Inside_Networks

THE NETWORK INFRASTRUCTURE E-M

Play it smart

BEST PRACTICES TO ACHIEVE CONVERGED NETWORK INFRASTRUCTURES IN INTELLIGENT BUILDINGS

AGAZINE WWW.INSIDENETWORKS.CO.UK

OCT
21

FIT

& LOSS

WHAT EFFECT WILL A GLOBAL CORPORATION TAX RATE HAVE ON THE DATA CENTRE SECTOR?

Factory communications

SPECIFYING THE RIGHT ENCLOSURES, RACKS AND CABINETS IN INDUSTRIAL ENVIRONMENTS

SIEMON INNOVATION

Protecting your critical connections, wherever they are.

Siemon's LockIT™ patch cords have been designed from the ground up to prevent unintended or unauthorized disconnection of the plug, from an outlet in public, shared and mission-critical environments.

These tamper-proof patch cords allow you to easily and effectively keep your network secure, while also remaining flexible to changing business needs.

Discover More

www.siemon.com

SIEMON™

Certified Wireless Infrastructure Technician

NEW 5 Day Program

Certify your knowledge and gain:

- Internationally and industry recognised BTEC Level 4 Award
- Official CWIT® Certification
- Use of CWIT post nominal title
- Use of the CWIT® Logo
- A CWIT® Digital Badge

Certified Wireless Infrastructure Technician (CWIT®)

Learn how to plan and install a wireless network to facilitate high speed access for smart mobile devices. Using the latest wireless technologies, ensure all users have comprehensive access at all times to benefit from a seamless roaming experience.

The CWIT® program takes existing network cabling knowledge and skills to the next level by gaining a valuable insight into current and emerging wireless networking technologies used to provide in-building wireless coverage. Methods used for connection to backbone networks also feature with explorations into the principles of microwave radio bearers, fibre systems and cable technologies. Each subject area covers the latest standards and codes of practice and ensures technicians are armed with everything they need to undertake installation projects to the highest possible standards.

Focused practical hands-on sessions are incorporated throughout this program, including advanced wireless infrastructure installation, troubleshooting, wireless coverage surveys and network testing tools. The organisation and management of site records and wireless system test results through OEM software are also included.

Certified Wireless Infrastructure Technician

BTEC Level 4 Award

5 Days

Download full program details here

CELEBRATING 25 YEARS

Contact the CNet team today:
info@cnet-training.com
+44 (0)1284 767100
cnet-training.com

Money matters

EDITOR
Rob Shepherd
07708 972170

SUB-EDITOR
Chris Marsland

ADVERTISING MANAGER
Kate Paxton
01603 610265

CREATIVE DIRECTOR
Vishnu Joory

TECHNOLOGY CONSULTANT
James Abrahams

CIRCULATION MANAGER
Debbie King

ACCOUNTS
Billy Gallop

CHALK HILL MEDIA

It's no secret that certain multinational corporations shift their profits to low tax jurisdictions to avoid paying higher rates in markets where they manufacture products or sell goods or services. Therefore, news that 130 countries have agreed to the Organisation for Economic Cooperation's (OECD) proposal to introduce a minimum 15 per cent tax rate has been broadly welcomed, albeit with some reservations about its effectiveness.

The data centre sector is not immune from this development and certain countries with low corporation tax rates have been very attractive to owners, operators and users of these facilities. To examine the effect of this 'levelling up' of the international taxation system, this month's Question Time asks a panel of experts to assess what impact it will have in terms of where facilities are built and operated, and whether there will be a knock-on effect in terms of issues such as reliability and sustainability.

Getting back to technology, the role of converged network infrastructures in creating intelligent buildings is now widely acknowledged and in this issue we have two articles on this subject. First up, Stuart McKay of Panduit offers five best practices to help achieve a converged network infrastructure, while Piers Benjamin of Corning Optical Communications looks at why we need to move away from rip and replace practices and leverage future ready infrastructure.

Also in this issue we have a special feature dedicated to enclosures, racks and cabinets. Jon Barker of Chatsworth Products (CPI) explains how to make smarter decisions by optimising data centre management through a cabinet ecosystem approach, and Andrew Wreford of Rittal looks at the importance of specifying the right enclosures, racks and cabinets in industrial environments.

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

Cable testing you trust.

Network testing you need.

LinkIQ™ Cable+Network Tester

The LinkIQ™ Network+Cable Tester is designed to provide trusted cable testing along with network testing professionals need to do their jobs. LinkIQ™ validates cable performance (up to 10 Gig) using frequency-based measurements and provides distance to fault information along with a wire map of the cable under test. The LinkIQ™ also performs nearest switch diagnostics to identify key network issues and validate switch configuration eliminating the need of using another device.

More information

FLUKE networks

Time for a Tech Refresh?

You've Come to the Right Place.

Lead your Edge revolution with the latest power, cooling and remote access technology from Vertiv to quickly deploy and protect your IT spaces.

Multiple Edge solutions in a single **Vertiv™ VR Rack**:

- **Vertiv™ Edge UPS** reliable, efficient power protection
- **Avocent® ACS** advanced serial console servers
- **Avocent®** LCD local rack access console
- **Vertiv™ VRC** rack-based cooling
- **Vertiv™ Geist™ UPDU** universal connectivity

What's Your Edge?

Vertiv.com/InsideNetworks

VERTIV.

5G adoption delayed by European network strategy decision makers

Sierra Wireless recently commissioned IDC to conduct a research project to gain a deeper understanding of end user perspectives on 5G, including adoption plans and implementation obstacles in 214 large enterprises across four key industries in Western Europe – public safety, transportation, utilities and manufacturing.


Marc Overton

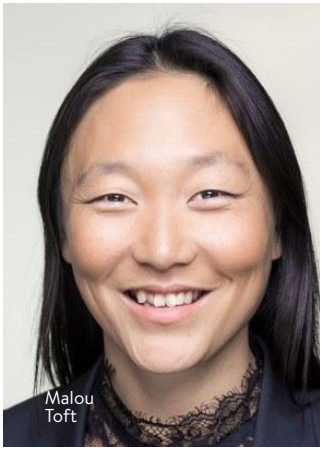
It found that 68 per cent of organisations do not currently have 5G as a part of their network services infrastructures, while 25 per cent of European network strategy decision makers are not currently interested and do not have plans to move to 5G. Furthermore, 47 per cent of organisations said they had given 5G consideration and decided against adoption. When asked why they had no interest or plans to move to 5G, 58 per cent flagged they were happy with their organisation's current network infrastructure and 61 per cent cited budget concerns.

Marc Overton, senior vice president EMEA and chief solutions officer at Sierra Wireless, said, 'It is surprising to see the current level of inertia. Research has shown the importance of real time communications that 5G brings, along with supporting process evolution. 5G's higher data speeds, lower latency and higher device capacity is set to transform several industries across a multitude of use cases.'

Greater awareness of smart technology's role in combatting climate change needed

Research by Milestone Systems has found that 80 per cent of Britons want their local authorities to take more effective action against climate change, as 230 councils have declared a climate emergency in their regions.

47 per cent are aware that enhanced use of data and technology can help to combat climate change. Younger respondents' awareness is significantly higher than the oldest members of society (52 per cent of 18-24 year olds versus 31 per cent of over 65s), signalling that greater communication of the benefits of smart tech on tackling climate problems to older people is especially needed.


Malou Toft

Malou Toft, EMEA vice president at Milestone Systems, said, 'There is clearly the need for greater education around smart city technology. Sustainability and tackling climate change are key priorities for many cities, so there would likely be a lot of support for technology that could help to make a real difference.'

Vantage Data Centers to reach net zero carbon emissions by 2030

Vantage Data Centers will achieve net zero carbon emissions globally by 2030. This marks a significant step for the company in its efforts to continually increase efficiencies and reduce environmental impacts at its hyperscale data centre campuses.

The company will not only actively work to reduce greenhouse gas emissions but will also invest in technologies and projects that remove carbon from the atmosphere. Vantage's goal specifically targets reductions for emissions that the company directly controls, Scope 1 and 2 emissions, as well as reductions that it can guide or influence throughout its supply chain. It is creating interim reduction targets that are in alignment with the Science Based Target Initiative (SBTi) methodology, which defines and promotes emissions reduction in line with climate science.


Amanda Sutton

Amanda Sutton, senior director of sustainability at Vantage Data Centers, said, 'Our comprehensive strategy includes everything from the use of renewable energy to water conservation, waste reduction and recycling. We are making a strong commitment to sustainability, while also rapidly expanding globally to support our customers' technological innovations.'

Customer and employee choice must be central to any unified communications strategy

The shift to remote and hybrid working patterns has led to an explosion in growth of unified communications (UC) technologies. As a result of this, alongside the permanent shift to more flexible working and an evolution in the way customers communicate with businesses, it is crucial that ongoing UC strategies are moulded to customer and employee demand, rather than decided from the top down, according to Kyocera.


Martin Fairman

Widespread home and hybrid working has meant people becoming fully accustomed to online collaboration tools as an alternative to face to face interaction. At the same time, customers have become much more comfortable with online communication methods such as live chat or instant messaging.

Martin Fairman, group sales and marketing director at Kyocera, said, 'Choice when it comes to communication channels is no longer considered an optional luxury. Customers expect to be able to contact a business in a way that suits them, so an organisation's UC capabilities should be designed to meet this need, rather than chosen purely by people at the top of the business.'

52 per cent of financial services organisations remain reliant on archaic manual data collection processes

Research from Oxylabs has revealed that over half (52 per cent) of UK financial companies are still reliant on archaic manual data collection processes to inform strategic decisions.


Julius Černiauskas

Access to data allows businesses to make correct investments and create real time responses to global stock market fluctuations. However, to achieve this companies must ensure a consistent real time data flow, which is impossible with manual collection.

The report also found that over a third (37 per cent) of respondents indicated that accessing data in real time was still a challenge.

Julius Černiauskas, chief executive officer at Oxylabs, commented, 'Data is only as good as the actions taken from the signals it creates. It's not enough to analyse data and predict insights that may or may not be profitable. These insights must fall into the hands of the right people at the right time. Proper data governance strategy execution ensures that no information is wasted.'

The EUDCA appoints new chairman and board of directors

The European Data Centre Association (EUDCA) has announced the appointment of a new board of directors, while Michael Winterson, managing director at Equinix Services, has also been elected chair to guide the association at this important stage of its evolution.


Michael Winterson

The EUDCA board of directors brings together technical excellence and commercial acumen, with a breadth of knowledge relating to data centre investments, sustainability, design and operations. Joining Winterson are Laurens van Reijen, Alex Rabbetts, Lex Coors, Andrew Harrison, Matthew Baynes, Matt Pullen and Philip Low.

Winterson said, 'It is my honour to lead the EUDCA at a time when the changes and positive impacts we make within the data centre industry reverberate to a far wider audience. The industry faces huge challenges, not least of which is addressing and mitigating its effects on climate change. The EUDCA will be at the forefront of shaping policy within Europe, building on its previous achievements.'

Lockdown widens the tech investment gap

The gap between tech savvy businesses and those struggling with technology has been accelerated by lockdown, with a huge difference in the amounts of money invested during this time, according to research from Hitachi Capital Business Finance.

The research surveyed 1,464 small business leaders across the UK on which areas of technology they had invested in during lockdown. It found that businesses that made full use of new technology as part of their core business practices were twice as likely to have invested as those who admitted struggling with it (65 per cent against 33 per cent).

During the course of the last 18 months, the average tech savvy small business spent £42,389 on technology. By contrast, the average amount invested by those struggling with technology was roughly a third of this at £15,097.

The research also showed that hybrid businesses (working part office, part remotely) were more likely to have been investing in their company's tech. 74 per cent had invested in their company's tech equipment, software and training, compared with 60 per cent of businesses that were solely office based, and 55 per cent working solely from home.


Joanna Morris

Joanna Morris, head of insight at Hitachi Capital Business Finance, commented, 'We are likely to see the gap continue to widen between businesses that have technology at the core of their thinking and those that don't. Alarm bells should be ringing for businesses that are struggling with technology to ensure they are not left behind.'

NEWS IN BRIEF

Finbold projects that about 4.74 billion people, or 60 per cent of the global population, will have access to 5G coverage by 2026. In the same year, 3GPP and LTE will both have a coverage rate of 96 per cent.

The Global Mobile Suppliers Association (GSA) has confirmed that the number of announced 5G devices has surpassed 900 for the first time and now stands at 938 – an increase of 24.1 per cent over the last quarter. The number of 5G devices understood to be commercially available has grown by 29.9 per cent over the same period. It now exceeds 600 for the first time, reaching 608 devices, which represents 64.8 per cent of the total number of announced 5G devices. Of these commercial 5G devices, over 400 are phones.

Iceotope Technologies has launched a CPD accredited training module for liquid cooling.

Claranet has achieved Amazon Web Services (AWS) Level 1 Managed Security Service Provider (MSSP) Competency status. It recognises that Claranet has successfully met AWS's requirements for a baseline of managed security services to protect and monitor essential AWS resources 24/7.

Adapt to Changing Requirements Without Disrupting Operations

Flexible in-ceiling and under-floor zone enclosures provide adaptable setups for managing hundreds of network devices.

- Cost-effective, robust and versatile
- Easy-access multi-media enclosures
- Up to 24 copper ports, 48 fibre splices or 96 MTP/MPO fibres
- Interchangeable mounting plates for copper or fibre installation options
- Chassis features cable-tie anchor points for correct routing and securing of cable

With over 35 years of experience, Molex cabling products are trusted by organisations worldwide for their exceptional build quality. Our products are designed to be used and re-used, delivering reliable high performance every time.

Find out more at https://www.molexces.com/solutions-overview/zone-cabling

molex

creating connections for life

Space race

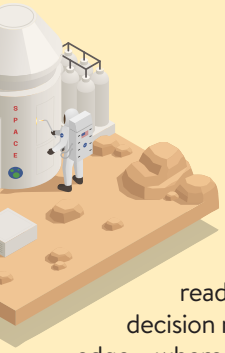
Hi Rob

Over the past few months I have attended dozens of virtual seminars and read countless articles to track the evolving message around edge computing. As with the emergence of the cloud, hype and media attention has put a spotlight on edge as the industry's next big thing and the enabler of our autonomous and connected future.

I believe it's true that the benefits of edge computing, like decreased latency, better bandwidth management and zero touch operations are key to supporting new expectations around how people, businesses and things interact. Yet, while helping my customers build their own strategies for the future, I still find myself reviewing solutions and asking 'is this edge?' As such, I have been trying to find a baseline example to articulate the foundations of edge and its relationship with the cloud. So step forward the International Space Station (ISS) and HPE Spaceborne Computer-2.

The ISS will soon receive Hewlett Packard Enterprise's Edgeline Converged Edge system, which, once connected to the Azure Space platform, will 'deliver edge computing and (artificial intelligence) capabilities to the ISS'. Following its predecessors' mission to investigate computer reliability in space, the Spaceborne Computer-2 will build on that learning to 'enable astronauts to eliminate longer latency and wait times associated with sending data to and from Earth, to tackle research, and gain insights immediately for a range of projects'.

Mark Fernandez, solution architect at HPE, says, 'The most important benefit to delivering reliable space computing with Spaceborne Computer-2 is making real time insights a reality. Space explorers can



now transform how they conduct research based on readily available data and improve decision making'. Now this is clearly edge – where specific constraints such as bandwidth and locality are driving a need to process data close to capture, while leveraging cloud services as a repository to send and process the results.

What I found particularly interesting here is that the base build includes recognisable hardware, such as the ProLiant DL360 server, albeit with a few 'space mods'. This confirms my outlook on the broader concept of edge, which is that while you might consume it as a service, there is still physical infrastructure somewhere and that still has dependencies which need to be planned, implemented and maintained. I find myself thinking about the challenges NASA, as the end user, and HPE face in deploying such a solution.

Pardon the pun, but space, power, cooling and network connectivity will all have been critical factors alongside the challenges of delivery, installation, remote telemetry and building a strategy to respond to fixes and changes in remote and harsh environments. It reminds me of our work for Dell. OK, so we didn't go into space, but we did go to deserts and the Arctic Circle!

Chris West
Keysource

Editor's comment

Edge computing is one of those terms where everyone thinks they know what it means but exact definitions differ from person to person! However, the fact that the ISS is now seeing the benefits of the edge shows how far it has come.

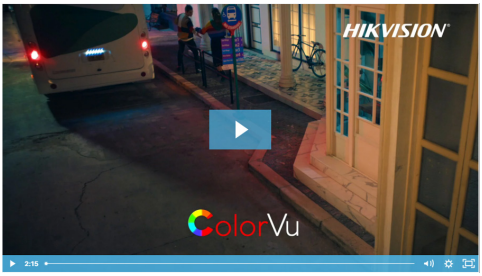
Hikvision ColorVu Solut available from Mayflex

Hikvision ColorVu enables you to capture better quality images in low light conditi

With advanced lenses and high performance sensors, coupled with a supplementary light for extremely dark scenarios, Hikvision's ColorVu cameras guarantee video and colourful details when you need them.

CLICK HERE to find out more about the ColorVu models.

Watch this short video to see the difference ColorVu technology can make.



ColorVu G2

With the ColorVu G2 range, Hikvision has included its AcuSense technology, which allows you to 'focus and act'. It allows you to pay attention to the things that matter, rather than being consumed with too much data/information, and also reduces false alarms.

CLICK HERE to find out more about ColorVu G2 models.

ColorVu Live Guard

With ColorVu Live Guard cameras, not only do you see images in vivid colour 24/7 but you can also give audible alarm

warnings to intruders. The new and improved G2 Live Guard camera within the ColorVu range also comes with AcuSense technology. The deep learning algorithm learns and focuses on humans and vehicles, creating a highly efficient system with a lower total cost of ownership.

CLICK HERE to find out more about ColorVu Live Guard products.

Learn more about the ColorVu ranges, and far more, by speaking to the team at Mayflex.

Why buy Hikvision from Mayflex?

Mayflex is a leading distributor for Hikvision in the UK and our experienced

tions

HIKVISION®

MAYFLEX
A Sonepar Company

ions

teams are on hand to advise and support you in making the right Hikvision product choices.

- Order until 8.00pm for next day free delivery via the Webshop or our new app
- Large Hikvision stockholding
- Competitive prices
- Commercial flexibility
- Trade counter open from 6.00am to 6.00pm
- Track and trace your deliveries
- Excellent pre- and post-sales technical support
- Specialist Support Services including IP configuration and camera spraying
- Free training courses and videos via the Mayflex Academy

CLICK HERE to find out more about the Hikvision products available from Mayflex.

Training

The Mayflex Academy runs the Hikvision HCSA, which is free for Mayflex account customers to attend. For those installers completely new to security we also run the Introduction to IP CCTV course, which provides a great foundation for customers looking to get into security and is a good course to take before attending the HCSA.

CLICK HERE to see future course dates and to book your place(s).

Get in touch

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

For more information about Mayflex **CLICK HERE**, call our security sales team on 0121 3262228 or **CLICK HERE** to send an email.

HellermannTyton

NEW Look...
NEW Products...
NEW Solutions...

MADE TO CONNECT

Visit us at Connected Britain 2021

HellermannTyton is exhibiting at this years Connected Britain event between 21st - 22nd September 2021. Come visit our stand and see how we can help you!

Connected Britain is the UK's leading connectivity event, covering full-fibre and 5G rollouts, the digital economy, smart cities and digital infrastructure development, digital inclusion and the evolving enterprise ICT landscape.

Britain CONNECTED

21 - 22 September 2021
Business Design Centre, London

Stand 9

Stay in touch with us!

IN-AD-HTC-C6A-R10

Financial times

Recently announced plans to overhaul the global tax system to ensure big companies 'pay a fair share' wherever they operate is likely to have implications for the data centre sector. Inside_Networks has assembled a panel of industry experts to explain what the impact could be on where facilities are built and operated

Finance ministers from 130 countries have agreed to the Organisation for Economic Cooperation's (OECD) proposal that aims to ensure multinationals pay their fair share of tax. The principle of the agreement is that they must pay a minimum of 15 per cent tax in each country they operate in.

It also includes plans to prevent the shifting of profits into tax havens, with the OECD claiming that more than $100bn (£73bn) was expected to be raised by curbing profit shifting. Although it's online behemoths such as Amazon that are the primary targets of this move, the data centre sector is also likely to feel some impact. It's no secret that some operators have chosen to locate their facilities where corporation tax is low and with this set to end, will they need to reassess their strategies?

To explain more about the possible effect of this worldwide initiative, Inside_Networks has assembled a panel of experts to offer their views.

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

EMMA FRYER

ASSOCIATE DIRECTOR DATA CENTRES AT TECHUK

I see this common tax threshold as a welcome development – and long overdue. Taxation systems lag behind modern business realities and the result is a vast economic quagmire that can only be addressed with a genuinely multilateral approach and a consistent set of rules.

In terms of any effect on data centre development, much depends on market maturity and growth drivers. In a nascent market, discrepancies in tax incentives are likely to have a much greater impact than in a mature one.

Ireland's attractive corporate taxation regime was a factor in its development as a data centre hub, but now it is fully established as a globally important cluster a few percentage changes in tax is unlikely to rattle anybody's cage. Market trends have also changed – we are seeing buoyant growth across first and second tier markets, driven by large cloud service providers building their availability zones, which seems to follow customer demand not taxation regimes.

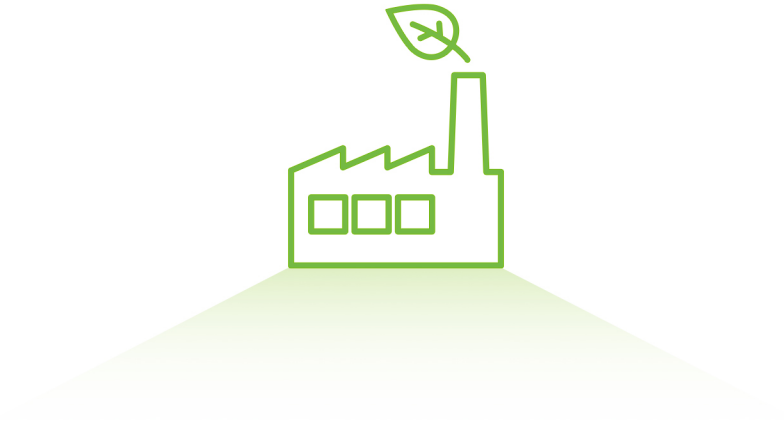
So I think that the impact will be muted. Of course, there are other fiscal measures like energy taxes that can be deployed as incentives, and other inward investment factor standardised criteria, like access to renewable power, will become more important differentiators. However, from my perspective, the 15 per cent corporation tax threshold is only half the picture. At the G7, finance ministers also agreed that the largest and most profitable multinationals will pay tax in countries where they have operations. I see much to welcome here.

In particular, the successful implementation of this measure will result in unilateral attempts to tax digital services being abandoned in favour of a global regime. Mindful of the UK's ability to produce burdensome and complex regulatory instruments (does anyone remember the Carbon Reduction Commitment?) that deliver limited or even perverse policy outcomes and put UK operators at a disadvantage compared to their counterparts in competing markets, then this is the something to celebrate.

The devil will be in the detail and we have a long way to go on both these journeys, but I will be travelling optimistically.

'TAXATION SYSTEMS LAG BEHIND MODERN BUSINESS REALITIES AND THE RESULT IS A VAST ECONOMIC QUAGMIRE THAT CAN ONLY BE ADDRESSED WITH A GENUINELY MULTILATERAL APPROACH AND A CONSISTENT SET OF RULES.'

LEVITON®



Reducing Cable's Carbon Footprint.

Leviton leads the way with a carbon neutral European Headquarters, sustainable manufacturing practices, and products that reduce waste.

LEARN MORE ❯

Get more done - faster!

EtherScope® nXG
Portable Network Expert

- Quickly test, verify, troubleshoot, and map Wi-Fi and wired networks
- NEW! LANBERT™ Media Qualification app tests the capability of premise cabling and media components for carrying Multi-Gig and 10Gig Ethernet

- Faster and easier Wi-Fi and Bluetooth/BLE site surveys with AirMapper™
- Full line-rate Multi-Gig to 10G performance testing and packet capture

Featuring AirMapper™ Site Survey App

No laptop. No dongle. No tethered device.

netAlly®

Visit us online at netally.com

JOHN BOOTH
MANAGING DIRECTOR AT CARBON3IT

There are two aspects to this question and the first is in terms of tax treatment. Colocation data centres do pay taxes and, of course, try and pay as little as possible. This is only natural, if morally unacceptable, but they live in a world where this is possible for now. A global tax rate will have some effect, but they will deal with it. This may mean some fancy accounting, but I do not expect to see any impact on where data centres are built and operated.

The second aspect is that data centres are essential infrastructure and through the pandemic this has been proven to be the case. We've all got used to working from home and, in most cases, there has been no discernible effect on operations or construction projects. But, if we look at the data centre network as the fourth utility, then there are still significant gaps in global coverage – in Africa for sure but also in other cities in all regions and, of course, the main driver for construction is the cloud.

In order to meet their stated goals, cloud providers need to have coverage in specific locations and this means that data centres are geo-specific assets. Add 'data of origin' laws, where data cannot cross country boundaries, and data centres have to be built in specific places. Then it's down to the three essentials – power, connectivity and staff – as to where the data centre is built. True, some countries may provide a favourable low tax environment, and I expect this to continue even with a global tax rate, as that is levied at federal or government level, whilst local taxation is down to states, regions, cities or even counties.

What I think is more important is carbon taxation, or the threat of it. The European Union (EU) Green Deal and the recent moratoriums on data centre construction in Amsterdam, Frankfurt, Dublin and Singapore point towards a more hostile planning landscape globally for data centres. And when I say hostile, I mean the addition of elements such as energy flexibility, waste heat reuse, bird and bat boxes, water management and community projects as a condition of planning.

So, if anything, reliability and sustainability will be enhanced by the new tax laws, which will force data centres to be better neighbours and actively assist local communities with their sustainability goals.

'IF ANYTHING, RELIABILITY AND SUSTAINABILITY WILL BE ENHANCED BY THE NEW TAX LAWS, WHICH WILL FORCE DATA CENTRES TO BE BETTER NEIGHBOURS AND ACTIVELY ASSIST LOCAL COMMUNITIES WITH THEIR SUSTAINABILITY GOALS.'

JOHN HALL
MANAGING DIRECTOR AT PROXIMITY DATA CENTRES

The data centre industry has continued to thrive in multiple countries over the past decade, despite varying tax rates from country to country. This industry is driven by market demand based on meeting the particular location requirements and IT needs of enterprise customers and service providers. For example, anywhere in the world, edge colocation data centres must be in proximity of target cities and conurbations, otherwise they are not fit for purpose from a latency perspective.

So, aside perhaps from the hyperscalers and global operators that cater specifically for them, the future existence and location of data centres will not be especially dependent on a particular country's tax rate. In any case, there are other key factors involved such as real estate and labour costs, power availability, local ambient temperature, geopolitics and convenience.

Neither should a new universal minimum tax arrangement agreed between countries affect the quality, reliability and sustainability of facilities. After all, data centre builders and operators are making a considerable investment when deciding on a particular location – whether it's a new build or the acquiring and modernising of existing facilities. There is also a myriad of regulations to follow, from building regulations to legislation governing carbon emissions, not to mention internationally recognised compliance such as ISO quality, environmental and security, and optimising Power Usage Effectiveness (PUE).

In the end, the customer is king and they are increasingly knowledgeable about the type of facilities they require, including the credentials needed. They will not be fooled into putting their valuable data and IT into substandard facilities.

That said, there are certain exceptions where a country or region has, from the outset, purposely targeted the data centre industry to stoke up demand by offering lower rates. Ireland, for example, is a data centre tax haven – and is currently one of the few countries not to agree to the new 15 per cent minimum rate. With over 70 data centres and dozens more seeking the go-ahead, it remains to be seen what impact, if any, a minimum 15 per cent tax rate might have there in the future. However, for those continuing to choose to build and operate facilities in Ireland, it is unlikely to result in the cutting of corners when it comes to quality and sustainability. Power supply, however, could be more of a problem.

'THERE ARE CERTAIN EXCEPTIONS WHERE A COUNTRY OR REGION HAS, FROM THE OUTSET, PURPOSELY TARGETED THE DATA CENTRE INDUSTRY TO STOKE UP DEMAND BY OFFERING LOWER RATES.'

Corning® Everon™ Network Solutions

Streamlined, powerful, flexible.

Learn more about Corning® Everon™ Network Solutions at
www.corning.com/everon/emea

INFINIUM FIBRE DATA CENTRE OFFERING

A SMARTER WAY TO CONNECT

Legrand's Infinium Fibre system is a pre-terminated, innovative data centre solution consisting of three performance levels that deliver never-before-seen headroom, latency, and future-proofing.

Infinium Quantum™	Industry leading lowest connection loss
Infinium Ultra™	Engineered to improve performance
Infinium Core™	Simplified low loss system

These performance levels are achieved by pairing cassettes, trunks, and patch cords to create one seamless and complete solution.

Learn more: ortronics@legrand.co.uk and **Legrand.us/fiber-optic-resources**

legrand

BARRY ELLIOTT
DIRECTOR AT CAPITOLINE

I don't think corporation tax levels will have a great deal of impact on data centre construction. If it did we would see swathes of data centres in Bermuda, Bosnia, Cyprus and Gibraltar instead of the current clustering in the UK, Netherlands, France and Germany. Data centre operators tend to want to be near to where their customers are.

We must also remember that data centres don't pay tax – their owners do on their reported profits, principally in the country or state of their incorporation. Amazon, Google and Equinix are incorporated in Delaware (8.7 per cent corporation tax). Digital Realty is incorporated in Maryland (8.25 per cent corporation tax) and Microsoft in Washington State (zero per cent).

Ireland has developed a strong data centre presence and bases some of that success on its relatively low corporation tax of 12.5 per cent. That will be under pressure from the European Union's proposed adoption of a global minimum corporate tax rate.

But how much corporation tax do data centres actually pay in Ireland? It seems the Irish government is more interested in the high paying/highly taxed jobs that data centres bring rather than corporation tax receipts. In 2018 Google paid zero tax in Ireland despite making $18.8bn profit, all because Google Ireland Ltd is owned by Google Bermuda Ltd.

Data centre operators and owners want to be near their customers and have access to low cost and reliable electricity. They want to be in a secure and stable political and financial framework with good infrastructure, communications and an educated workforce. Corporation tax tends to only affect small and mid-sized companies that don't have the accountancy muscle to pretend to be in Bermuda. For the big data centre companies tax will not be a deciding issue, except in a very few circumstances.

'I DON'T THINK CORPORATION TAX LEVELS WILL HAVE A GREAT DEAL OF IMPACT ON DATA CENTRE CONSTRUCTION. IF IT DID WE WOULD SEE SWATHES OF DATA CENTRES IN BERMUDA, BOSNIA, CYPRUS AND GIBRALTAR INSTEAD OF THE CURRENT CLUSTERING IN THE UK, NETHERLANDS, FRANCE AND GERMANY.'

STEPHEN BOWES-PHIPPS

SENIOR DIGITAL INFRASTRUCTURE CONSULTANT AT PTS CONSULTING

This global accord is mainly aimed at the global internet giants – Apple, Amazon, Facebook and the like – which successfully manage to avoid paying any significant taxes despite turning in huge profits for their global operations. The question is, what does a level playing field of taxation mean for future decisions around investment growth in digital infrastructures?

In many respects that ship has already sailed concerning where the hyperscalers are investing in concentrated areas and/or regions. Time and time again reports on the outlook of the data centre market show that the Frankfurt, London, Amsterdam and Paris (FLAP) markets still command the majority of investment and demand.

Dublin has joined them recently and there is significant growth in second tier markets such as Madrid, Milan, Warsaw, Sweden etc for reasons such as land cost, sustainability benefits and market demands. The international circuits that serve the top tier markets so well were initially laid due to the pull of large financial centres. Data centre demand and supply is concentrated around this international telecoms infrastructure and building a data centre without it is highly speculative at best.

I think it unlikely this new accord will have any impact over and above providing more income for countries that find themselves the beneficiaries of large concentrations of facilities. Mergers and acquisitions are still buoyant, in the popular markets revenues are still high and climbing, the coronavirus pandemic has pushed ever more work into the digital sphere and cloud take-up continues to rise all the time.

The biggest danger for data centre investors is that the market is in a bubble, is likely to plateau at some point and may even dip once capacity is reached. Taxation regimes can 'nudge' operators to more desirable outcomes for society but, if they get it wrong, it can also encourage poor outcomes with negative societal effects. With this base tax, we can only speculate at the effect on tax avoidance but I'm willing to guess it is unlikely to bring in any more total revenues and nation states will always incentivise investment using whatever levers they have.

> 'TAXATION REGIMES CAN "NUDGE" OPERATORS TO MORE DESIRABLE OUTCOMES FOR SOCIETY BUT, IF THEY GET IT WRONG, IT CAN ALSO ENCOURAGE POOR OUTCOMES WITH NEGATIVE SOCIETAL EFFECTS.'

VERTIV.

Data centre solutions to meet your unique needs.

Avocent® | Geist™ | Liebert®

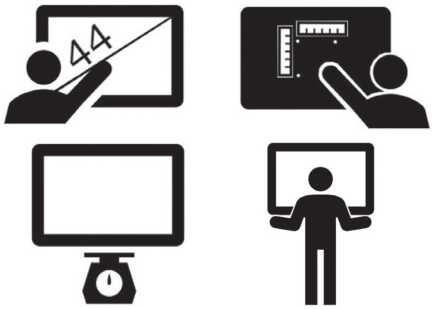
Contact the NBM Technology Solutions Team on **01442 838 500**
or email us at **sales@nbm.technology** to discuss your requirements today!

NBM technology SOLUTIONS

aura
experience different

TV Brackets from Aura

Find the right bracket for your needs



Choose from a great selection of quality brackets including; Tilt close to wall brackets up to 70kg and Full motion brackets for 45kg. All supplied with fixing hardware and in plastic free packaging.

Download our TV Bracket Selector Guide

View the full range of Aura TV brackets available

AR-50-005
TV Bracket Tilt VESA 200x200
14”- 43” 35Kg

AR-50-008
TV Bracket Tilt VESA 900x600
42” - 100” 70kg

AR-50-010
TV Bracket VESA 400x400
26” - 65” Full Motion 45kg

Call sales on: **0800 75 75 65** Email: **aura@mayflex.com** **www.aura-av.com**

IAN BITTERLIN

CONSULTING ENGINEER & FORMER VISITING PROFESSOR AT LEEDS UNIVERSITY

The traditional location of data centres in Europe has never been primarily based on paying, or not paying, business taxes. There have been some locations like Dublin and Luxembourg where it has played a minor role but the traditional hubs like London, Frankfurt and Paris are based on adjacency to the financial markets, and Amsterdam on transatlantic connectivity to wet-fibre.

However, the hyperscale facilities have introduced a paradigm shift towards locations where energy is cheap, plentiful, 'green' (or greenwash-able), and often where the air is clean and cold. Those facilities create very few jobs compared to their revenue. Latency considerations seem to have faded except for the relatively small number of trading platforms that need to have a <13km fibre route from stock exchanges.

So, what about taxing profits? Well, if all countries together applied new rules, then it would not change the status quo, would it? Traditionally, land cost, power availability, fibre availability, labour cost, access to educated workforce and data sovereignty issues all played a part. Those would still apply.

As an industry we should not be seen to be endorsing tax avoidance, or even getting caught sweeping it under the carpet. Our national economies depend on jobs and taxpayer money to pay for education, healthcare, infrastructure, police and security, overseas aid, and welfare for the less well-off. Without tax revenues we would descend into the anarchy and corruption, as witnessed in some of the poorer nations of the world.

The hyperscale businesses are not paying their share – and I fully understand the 'technical' reasons to do with the very nature of what we call the cloud and the dislocation between consumer and provider.

For example, how much do we pay Google to use its search engines? Nothing. So how does it have so much cash? It creates a globally based platform and each consumer uses it. Google gets paid for consumers' behavioural data and by advertisers pushing links to consumers – and the money mounts up and up. But where should the profit be declared? Globally? Pay per click? I have no idea as to the best answer, but I know that we need the tax to be paid.

> 'AS AN INDUSTRY WE SHOULD NOT BE SEEN TO BE ENDORSING TAX AVOIDANCE, OR EVEN GETTING CAUGHT SWEEPING IT UNDER THE CARPET.'

NetXs – next generation structured cabling from ST

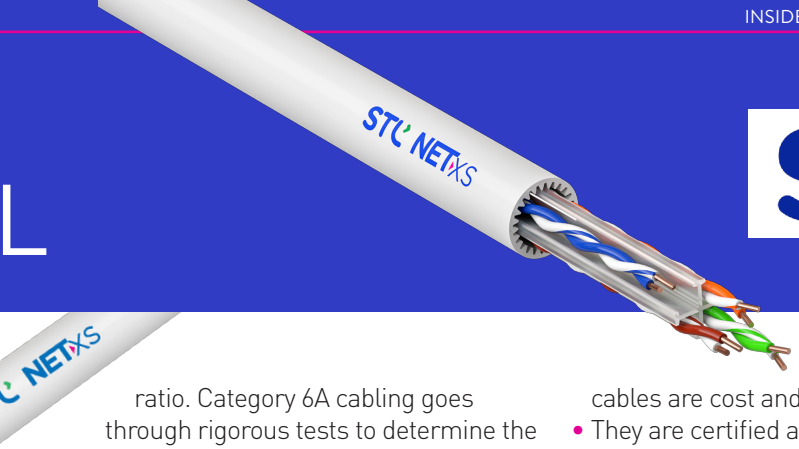
In our uber speed, ubiquitous digital era, alien crosstalk (AXT) is the latest mandate towards ensuring high performance communication cables. The demand is for minimal bit error rate (BER) from packet loss in data transmission. Packet loss is caused by interference, or noise near the cables, as a result of higher frequencies, along with 10GBASE-T (10 Gigabit Ethernet over copper twisted pair cable) transmission. It can severely impair performance.

Today's cabling imperative

Conventional communication cables with traditional cross separators fail to reduce packet loss in higher frequencies and, therefore, fall short of meeting the stringent AXT parameters laid down by the Telecommunications Industry Association (ANSI/TIA) and ISO/IEC standards committees.

Category 6A U/UTP unshielded cables have a unique filler and an innovative sheath structure that provides exceptional protection from transmission noise. They perform well up to 500MHz, deliver a speed of 10 Gigabit Ethernet over copper twisted pair cable and meet AXT parameters.

The cables' design ensures that the total combined power sum alien near-end crosstalk (PSANEXT) and power sum alien attenuation to crosstalk ratio far-end (PSAACRF) is limited to maintaining a minimal signal to noise



ratio. Category 6A cabling goes through rigorous tests to determine the impact of external noise sources on this cable design to see if certain conditions can degrade cable performance on a 10GBASE-T network. The set-up utilises a '6-around-1' cable bundle to measure the crosstalk immunity of the victim cable when six surrounding disturbing cables are used as interfering signal sources.

STL brings NetXs

A pioneer of innovation, STL harnesses the power of technology along with a passion to create new age solutions for communication challenges. Its range of NetXs solutions has taken centre stage as one of the leading high end data cables in the world. The solutions offer a full spectrum of data cables to foster superior noise immunity, with high headroom at both low and high frequencies.

The biggest advantage of NetXs Category 6A U/UTP lies in offering shielded cabling characteristics without the need for additional resources and costs associated with shielded cables:

- Their horizontal link performance margin makes them agile and future ready, supporting robust and scalable cabling infrastructure
- Their superior performance in data transmission makes them hyper-reliable
- With minimum need for fault management, NetXs Category 6A U/UTP cables are cost and time effective
- They are certified and confirmed by ETL for Power over Ethernet (PoE) Limited Power (LP) and meet the requirements of ISO/IEC TS 29125 for support of the IEEE 802.3bt Type 4 remote powering application
- They are ETL verified to ANSI/TIA 568.2-D and SO/IEC 11081-1, with applicable horizontal link electrical transmission characteristics

Your one-go cabling solution

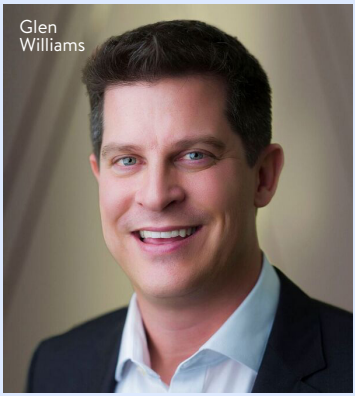
NetXs Category 6A U/UTP cabling systems can be deployed across a wide range of applications in structured cabling including customised cable designs in UTP, indoor and outdoor categories. They address physical layer field applications for enterprise networks, data centres, healthcare, education, Wi-Fi, CCTV surveillance and building automation.

Meeting international quality and testing standards, and with well-established global logistics and value added services, STL's NetXs meets the critical performance, time and cost imperatives of the current digital age. We have built the cables with incredible functional capabilities and confirmed proof of value. With these, we are helping businesses meet evolving digital needs for speed and scale, delivering continuous innovation and growth.

For further information **CLICK HERE.**
www.stl.tech

North acquires Data Techniques to aid growth plans

Following its recent purchase by mid-market private equity investor, Livingbridge, North has expanded its UK footprint with the strategic acquisition of Data Techniques. The investment will accelerate its ambitious growth plans, helping to drive regional expansion, strengthen service offerings and continue to build long-term partnerships with customers and technology partners.


Glen Williams

Formed in 1988, Data Techniques has 90 employees located across three UK offices in Camberley, Southampton and Basingstoke. North offers similar services and end to end capabilities to Data Techniques across a complementary range of markets, and shares a commitment to providing exceptional service and innovative solutions that transform the way people, organisations and places work.

Glen Williams, chief executive officer at North, said, 'The last year has seen tremendous change for North and we are well-positioned to take advantage of growth opportunities. The acquisition of Data Techniques demonstrates our focus on building our client base and breadth of services through smart expansion and acquisitions.'

Mayflex agrees distribution partnership with USystems

Mayflex has agreed to become USystems' exclusive distributor in the UK, supplying its full range of data centre cooling and micro and modular data centre solutions.

USystems is working towards more sustainable data centres by providing innovative technologies that use less energy and reduce carbon footprints. It provides edge compute and white space cooling products to global businesses to make their data centres and the world more environmentally friendly.

L-R Abi Atkins and Ross McLetchie

Ross McLetchie, Mayflex's sales director, commented, 'We are delighted to partner with USystems. We are well aware of the need for better cooling solutions and we particularly like the sustainable approach that USystems takes. USystems forms just part of our data centre offering, which includes high density copper and optical fibre cabling systems, pre-terminated products, floor standing racks and frames, power distribution units, uninterruptible power supplies and security products.'

BCS appoints head of critical infrastructure

In response to the increasing requirement by organisations in the data centre, commercial, media and high-tech sectors to upgrade, modernise and expand their mission critical facilities and infrastructures, BCS Group has appointed an experienced head of critical infrastructure.


Simon Harris

Simon Harris brings over 20 years' experience of delivering specialist mission critical systems and data centre consultancy across international markets. His new role will include project management, cost management, procurement and construction contract administration services, tailored to clients' specific needs. In addition, advice and guidance will be provided regarding capital allowances to support these types of initiatives.

Harris said, 'Critical infrastructure projects often face a unique and challenging collection of objectives and constraints, but there is no doubt that legacy infrastructure can be refurbished to increase capacity, support new and emerging business services, and reduce operating costs. With many clients also keen to deliver on their environmental, social and governance commitments, this sustainable approach is increasingly appealing.'

Sudlows opens new office in Singapore

Sudlows has opened its latest office in Singapore. The new location will be shared between Sudlows Consulting and Sudlows Enterprise Services.

Sudlows' increasing client base and completion of successful projects across the Asia Pacific (APAC) region, combined with the area's demand for data centres set to nearly double in the next 3-5 years, has prompted further expansion. It is the second new Sudlows office this year, following the opening of a new European office in Dublin. The office will better position the company to continue to deliver data centre, critical infrastructure and enterprise services across APAC.

John Collins, managing director at Sudlows commented, 'With over 330MW+ of data centre projects already being undertaken by our APAC team, our fourth international office in Singapore will enable us to better support our clients not only in APAC, but in neighbouring locations.'

Leviton publishes new network solutions catalogue for EMEA

Leviton has released an all new 2021-2022 digital product catalogue that includes the latest copper and fibre optic cabling systems for data centre and enterprise networks. At nearly 200 pages, the Europe, Middle East and Africa (EMEA) catalogue includes category rated copper systems from Category 5e to Category 8, multimode and singlemode fibre cabling systems, work area housings and wallplates, cable management and intelligent infrastructure management solutions.

'We are excited to present an expanded portfolio of cable and connectivity for customers in EMEA, giving them even more options to meet their network requirements,' said Jim Frey, senior director of global marketing for Leviton Network Solutions. 'It shows the strength of Leviton's offering, as we continue to support enterprise and data centre networks with truly end to end systems from a single global manufacturer.'

CHANNEL UPDATE IN BRIEF

Calvin Rowland has joined Extreme Networks as senior vice president of software as a service (SaaS). He brings over 25 years of experience driving business and cloud strategy, most recently serving as senior vice president and general manager of cloud services at F5 Networks.

Gigamon has been Certified by Great Place to Work. This prestigious award is based entirely on what current employees say about their experience working at Gigamon. This year, 89 per cent of employees said it's a great place to work – 30 per cent higher than the average US company.

Mayflex has appointed Sarah Long as an account manager to manage and develop accounts in the north west area of the UK, with a specific focus on the security product portfolio as part of a converged solution.

CityFibre has been recognised by the Ministry of Defence through its Employer Recognition Scheme Silver Award, thanks to its ongoing commitment to hiring reservists and veterans. The Armed Forces Covenant was set up to help reservists and veterans of the British armed forces by providing them with a promise that they will not face disadvantage compared to other citizens.

Red Hat and Nutanix have formed a strategic partnership to enable a powerful solution for building, scaling and managing cloud native applications on-premises and in hybrid clouds.

UNLOCK YOUR POTENTIAL WITH ECA

YOUR INDUSTRY PARTNER FOR GROWTH & PROSPERITY

- Expert helplines
- Industry-leading guidance
- Specialist webinars
- Dedicated Member tools
- Exclusive discounts
- Help shape your industry

Find out more at eca.co.uk/join-us

info@eca.co.uk
0207 313 4800
@ECAlive

ECA
Excellence in Electrotechnical & Engineering Services

Get specified with ECA Membership

Expect the unexpe

Louis McGarry, sales and marketing director at Centiel UK, explains the key considerations for a successful uninterruptible power supply (UPS) installation

How many times have you purchased something only to later find out that it's not turned out quite like you'd hoped or anticipated? We are often called in to see organisations in this situation, where a UPS system has been installed by others and it's not delivering on its promises. However, for many years we have been on a mission to change this.

Fact finding

The fact is that you can't fully understand and complete a successful UPS installation from behind a desk. There are many variables relating to the power infrastructure including space, other equipment and the environment, as well as timescales.

As manufacturers and suppliers, it is our responsibility to deliver clean, continuous power with the most available systems and, at the same time, ensure all the other elements that can impact successful UPS installations are also considered and resolved. It is often these factors which can end up compromising the original system design – if suppliers are not careful, the system provided may not meet the intended performance requirements.

Knowledge is power

We know from our own experience that there will be changes during projects, but this doesn't mean that the client has to compromise their critical power and availability. Working with our team of experienced engineers, who understand how to design and implement flexible UPS systems, can offer short-term and long-term savings without lowering performance criteria.

It's not just big changes that can make a difference – it can be simple things such as the correct labelling of DC cables, supplying proper containment or completely re-imagining the room layout. For us it's about working with whatever the situation requires to ensure our UPS always does what it says on the tin. This is how we do it:

• Getting the installation right

The installation can be impacted by other trades 'working on top of each other'. Timing is the all important element here. Over the course of a project, timelines will inevitably shift, and they

ected

centiel
continuous power availability

are always on the tight side! Therefore, keeping in constant communication with others involved in the project can help.

• Protection of equipment

Once the UPS has been installed it is important it stays safe while the rest of the build is completed. We try and mitigate the risk by protecting the UPS and the batteries, putting up barriers and, if possible, making the room secure.

• Maintenance

As manufacturers we have a duty of care and our relationship with the UPS doesn't end once commissioning is complete. It is essential that trained engineers undertake regular maintenance visits to ensure component health is monitored and corrective actions are taken to prevent potential failures. Understanding when remedial actions may be required will allow for budget discussions and planning to take place.

Support structure

Again, we are focused on expecting the unexpected, always aiming to remove risk and maximise overall system availability as far as possible. Selecting the most optimum solution means working in close partnership with manufacturers, contractors and consultants to meet the requirements for critical power protection and to help overcome the inevitable challenges experienced on any project.

At Centiel we are trusted to deliver to expectation every time and to support our clients and their equipment both now and in the future.

For further information about Centiel UK **CLICK HERE.**

www.centiel.co.uk

Thinking inside the box

Jon Barker of Chatsworth Products (CPI) explains how to make smarter and faster decisions by optimising data centre management through a cabinet ecosystem approach

As global demand for connectivity continues to skyrocket, data centre densities are following suit. In this always on world, there are a number of factors contributing to this increase. Power loads are becoming less predictable and the continual development of new technologies and services such as the internet of things (IoT), 5G wireless and edge computing is putting a strain on data centre operations. Because of these factors, data centre managers are adding capacity to stay ahead of the curve.

PHYSICAL FOOTPRINT

It is important to address the data centre holistically. A well designed, cohesive infrastructure enables efficient management and flexibility, giving data centre managers the ability to achieve total data centre optimisation. This holistic approach begins with the cabinet ecosystem.

The fundamental purpose of a data centre cabinet is to house mission critical IT equipment, allowing additional space for cable organisation and airflow management. Additionally, the cabinet must also house power management hardware, which allows for reliable power distribution within the cabinet and may include intelligent capabilities for remote monitoring and control. Within the cabinet, every bit of space counts.

SPACE RACE

With many organisations turning to remote

working and customer expectations of continuous, fast data reaching an all-time high, ICT infrastructure needs will not remain static. However, the more recent challenge that data centre managers face is the availability of scalable space for data centre cabinets.

Data centre real estate is in short supply, so organisations have been forced to make the most of their existing footprints. Even though it's important to maximise data centre space, it's just as important to invest in wider and deeper cabinets than the equipment they house, so they can also support proper power, cable and airflow management.

With more equipment per cabinet, load rating becomes critical. It is no surprise that data centre cabinets need to have a robust design with high load ratings. Advanced data centre cabinets feature incredibly high static ratings of 1814kg (4000lb) to 2268kg (5000lb) of equipment. For 'rack and stack' deployments – the option for sites that practice cabinet level deployment and utilise system integrators to load equipment into the cabinet and then deploy the integrated cabinet to the site – modern cabinets now feature high rolling loads of 1814kg (4000lb) and include heavy duty casters that support those loads.

MONITOR AND MANAGE

A data centre's power capabilities are critical for keeping IT infrastructure up and running – particularly with more processing being done within every cabinet. Power distribution, monitoring and control at the cabinet level are all critical to ensuring the availability and uptime of IT applications, as well as minimising the overall energy footprint of the data centre.

Reducing data centre cooling costs is a high priority among most data centre operators. The right cabinets should provide cooling and airflow management space to ensure optimal energy efficiency. An effective thermal management strategy that utilises practical concepts such as passive cooling promotes better energy efficiency and lowers costs in high density operations.

There are several factors that affect the performance of the data centre. One of the most common causes of downtime and the shortening of life of equipment is hardware failure due to exceeding temperature or humidity levels within a cabinet. The ability to monitor these environmental conditions to optimise efficiency, and identify and address any

issues before they result in downtime, is a key component in any data centre management strategy.

PROTECTING ASSETS

The need for physical security is critical and protecting personal and business data from theft has become an issue of paramount importance. Locking cabinet doors provides basic protection, whereas investing in networked electronic access control solutions offers numerous benefits. Access to IT equipment within cabinets must be properly controlled and managed, and a networked electronic access control solution at the cabinet level prevents unauthorised physical access. It also provides administrators with an audit trail of all authorised and unauthorised access attempts for regulatory compliance and incident response.

'To simplify operations and reduce supply chain complexities, data centre managers should look for market solutions that integrate power distribution, environmental monitoring and access control in the same platform, using minimal network connections.'

To simplify operations and reduce supply chain complexities, data centre managers should look for market solutions that integrate power distribution, environmental monitoring and access control in the same platform, using minimal network connections. This means three vital tasks that are typically deployed from different vendors – power management, environmental monitoring and access control – can now be integrated into a single hardware solution.

LIFE THROUGH A LENS

It is often said that a data centre infrastructure management (DCIM) software solution is the lens for gaining better visibility into the health of data centre assets and their operation. Simply put, DCIM software helps to visualise trends in the room and cabinet, all on a single screen and dashboard. Today's DCIM solutions include monitoring, asset management, change management and other digital tools to help data centre managers optimise cost and performance.

To achieve proper cable management, data centre managers can deliver optimal signal quality and transmission speed by eliminating kinks, twists and sharp ends. Today's advanced data centre cabinets must provide specific and physically separate pathways for power and network cables to ensure network integrity with minimal airflow interference.

TASK AT HAND

Those tasked with managing and implementing networks that deliver always on connectivity are quickly learning to embrace a new approach to managing data centre assets and white space remotely. By opting for a single source solutions provider, data centre managers stand to benefit from implementing customised cabinet solutions that simplify provisioning, accelerate deployment and ensure all of the elements of the data centre cabinet ecosystem are compatible. ■

JON BARKER

Jon Barker is CPI's technical manager for Europe. He has over 25 years' experience in the engineering industry, with 14 years specialising in data centre infrastructure. As technical manager, Barker serves as a technical contact, accountable for resolving pre- and post-sales technical support questions and issues, and provides support to CPI's sales team by delivering product and technology based presentations to customers, channel partners and industry event audiences.

LET'S **CONNECT!**

HUBER+SUHNER

Structured Cabling Solutions for Next Generation

with LISA Double Access CDR high-density fiber management systems

- Accommodates up to 3,600 Duplex LC Ports
- Quick, simple and reliable MACs (Moves, Adds & Changes)
- Enhanced space utilisation due it's 300mm depth and front accessible design

DUNASFERN Inc. **AURIGA**

For more information about the **Huber Suhner** solutions Dunasfern offer visit **www.dunasfern.com**
01908 282200 | enquiries@dunasfern.com

Patch Solutions

Whether you're looking for wall or floor mounted solutions, Patch Solutions has a comprehensive range of patching frames, data cabinets and server enclosures. We can ensure a swift, hassle free delivery that results in an easy to manage installation.

We stock a wide selection of wall mounted cabinets in varying heights and depths, complete with lockable side panels. A comprehensive range of accessories provides you with cable management options, power distribution units (PDUs) and shelves to complement your requirement – all from a single supplier.

If you need to source quality floor standing enclosures, we offer both the PI and FI series from Prism – starting at 600mm width, up to 1000mm in depth and varying height options. All cabinets are delivered fully built, complete with cable management to assist with airflow and cooling, as well as a choice of fixed, cantilever and adjustable shelves.

To view our full range **CLICK HERE** or contact our friendly team on 01442 890890 to discuss your specific requirements.

www.patchsolutions.com

Excel Networking Solutions

Excel Networking Solutions' comprehensive range of Environ racks, cabinets and open frames offers exceptional quality. They are suitable for a wide range of applications in the enterprise, data centre and security markets, as well as for everyday cabling systems.

To complement the Environ range, Excel offers the Environ Locking Solution to provide an ergonomic and stylish solution for environments where security is paramount. Bringing intelligence and monitoring right down to the lock level of a rack, the Environ Locking Solution provides ultimate access control. The full range, which is available for free next day UK delivery, can be viewed in the dedicated Environ digital catalogue.

Excel's Specialist Support Services include pre-configured cabinets and on-site rack assembly. This offers customers a flexible service that is proven to reduce installation cost and time, whilst providing a fully tested, fully traceable and 100 per cent inspected product.

CLICK HERE to find out more.

www.excel-networking.com

Molex Connected Enterprise Solutions

The simple, flexible architecture of zone cabling holds benefits for many types of workspaces – from open offices to education and healthcare, and for the deployment of smart building technologies.

Molex Zone Enclosures are cost effective, robust and versatile products that are designed to support moves, adds and changes in frequently changing environments. They accept copper or optical fibre cabling in a variety of formats and are designed to fit neatly into 600x600mm grid spaces.

Molex Zone Enclosures are available in underfloor or raised ceiling versions. The underfloor enclosure is manufactured from cold rolled steel with interchangeable mounting plates for copper or fibre installation options. The in-ceiling enclosure is made of Aluzinc, with slow release dampers for safe access and a lockable outer door.

Accommodating passive or active network equipment, it is ideal for fibre to the zone (FTTZ) implementations, as well as facilitating connections to wireless access points, lighting and other power over Ethernet (PoE) devices.

CLICK HERE to find out more.

www.molexces.com

Cable Management Warehouse (CMW)

Many industrial and external environments need equipment cabinets offering far more protection than what is usually required when installing cabinets indoors. The e-Harsh IP55 and eX-Harsh IP66 rated cabinet ranges from CMW are built to high ingress protection (IP) standards to ensure you can achieve this.

www.cmwltd.co.uk

Both the e-Harsh and eX-Harsh ranges are suitable for many industrial and external environments, and are manufactured in the UK. Standard rack sizes available are 4U, 6U, 9U, 12U, 18U and 21U. The cabinets are designed with rooves that gradually slope backwards, allowing for drainage to the rear.

The eX-Harsh range allows you to choose from three grades of stainless steel construction to suit the installation environment. Bespoke sizes and feature requirements can be easily supplied within a short lead time. Let the CMW team help you choose the right type of wall and floor standing cabinet for your installation environment.

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

cmwltd.co.uk

Unparalleled ITE Cabinet Customisation

FlexFusion™ Cabinets offer a universal platform for all types of data centres and servicing needs whether Hyperscale, Edge or Multi-Tenant Data Centre.

Built with best-in-class weight load of 1,588kg and doors with industry-leading maximum air flow of 80%, FlexFusion™ tackles your most challenging cabinet installations.

Whether it's for server, network or hybrid applications, FlexFusion™ Cabinets deliver performance to keep your networks running at optimal efficiency.

View the video: pages.panduit.com/FlexFusion

www.panduit.com

- 170-degree door opening for ease of access
- Multiple tool-less cable management options
- Adjustable front and rear equipment rails
- Easy lift side panels

For more details: https://pages.panduit.com/FlexFusion.html

Panduit London CBC, Oliver's Yard,
City Road, London EC1Y WHQ
Telephone: +44 020 8601 7200

PANDUIT™

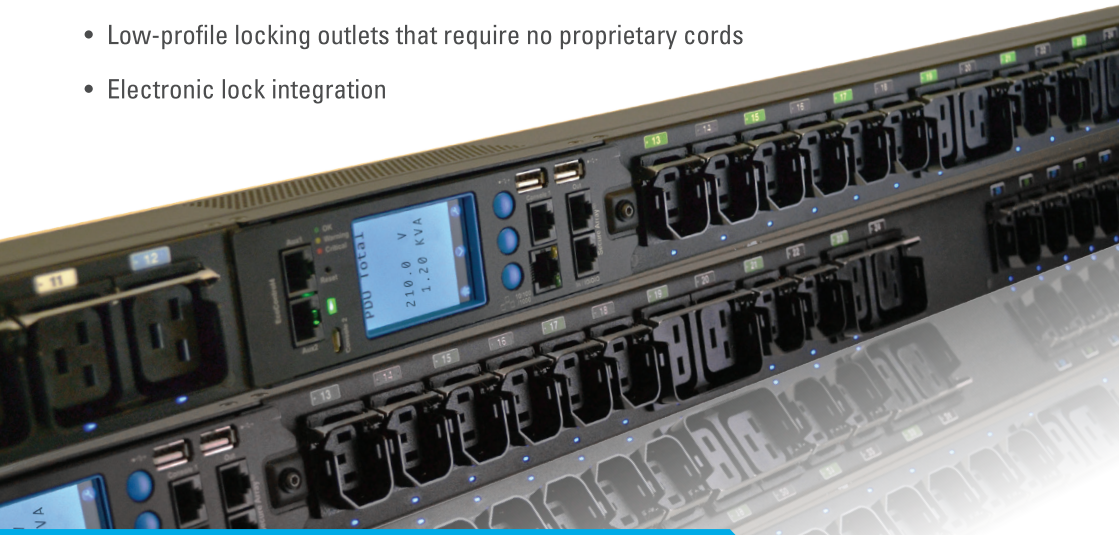
infrastruture for a connected world

The next generation of reliable, effective power distribution has arrived.

CHATSWORTH PRODUCTS

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

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



Visit **chatsworth.com/power**

to see the next generation of eConnect PDUs.

EDP Europe

EDP Europe's RackANGEL Co-Lo is a flexible and scalable colocation rack solution for multi-tenant or shared customer environments. Combining bespoke racks with an advanced access control system, biometrics and in-rack CCTV, RackANGEL Co-Lo provides the ultimate managed colocation rack offering.

As standard, RackANGEL Co-Lo cabinets are available with two, three or four compartments, in widths of 600mm or 800mm and heights of 42U, 47U or 50U, depending on the required configuration. Custom built cabinets can be designed to meet your exact requirements without any minimum order quantities or extended lead times.

Each compartment is completely independent with protected cable management, removable side panels that are locked from the inside, and vented shelves for better airflow management. They can be supplied with power distribution units (PDUs) and grounding installed. RackANGEL Co-Lo is delivered with IP addresses preconfigured, ready for you to plug and play on your network.

CLICK HERE to find out more, call our sales team on 01376 501337 or **CLICK HERE** to send us an email.
www.edpeurope.com

Austin Hughes

Austin Hughes' rackmount solutions help manage data centre rack capacity, reduce downtime and energy costs, and improve energy efficiency.

Given the mission critical nature of the data centre environment, InfraPower intelligent rack power distribution units (PDUs) are designed, built and manufactured to provide extremely high levels of resilience. Digital local touchscreen displays, DC power modules and latching relays are standard features within InfraPower Metered and Outlet Switched (WS) PDU and Outlet Switched with Outlet Metering (WSi) PDU models.

InfraPower PDUs can be integrated with InfraSolution networked smart card access control for added cabinet security or InfraGuard for full cabinet environmental monitoring and management. Installing a remote rack IP door access solution allows monitoring, control, alarm and reporting capabilities for all server racks. Sensors are available for complete environmental monitoring and peripherals such as fans and lights can be added to further expand functionality.

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

USystems

The EDGE-3 soundproof micro data centre (MDC) from USystems is an exceptional range of enclosures that can remove up to 28.5dBA (99.9 per cent) of IT noise, while providing a thermal load capacity of 11.5kW. EDGE-3 is a superior alternative to a costly data and communications room. It allows the deployment of servers and network equipment directly in the office and requires less than 1m^2 of valuable floorspace.

Reducing energy bills is always desirable but expecting a standard server cabinet to assist in this aspect is virtually impossible. That is where the EDGE-3 is uniquely different. It maintains sufficient airflow throughout the enclosure, providing the required level of thermal dissipation, while optimising the level of 'ambient' background noise the cabinet generates and minimising power expenditure.

Using simple plug and play, the EDGE-3 solution is supplied preconfigured from the factory with built-in intelligence. Typical application spaces include offices, IT and communications rooms, and laboratories.

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

Legrand

Globalisation and standardisation are changing how building networks are being deployed around the world. Deploying a standardised telecom room globally requires a flexible rack foundation to build upon.

Enter the Mighty Mo 20 adjustable four-post open racks!

Open racks are the best physical support solution for intermediate distribution frames (IDFs), main distribution frames (MDFs) and telecom rooms where security is provided by the room. MM20 four-post open racks as deep as 42-inches provide the cable management needed for high performance network cabling and the flexibility to support deeper network and power equipment. Maintaining telecom room cabling and active equipment is easier when there are no cabinet doors or side panels to obstruct access.

Legrand offers a physical support solution with a range of products that can provide solutions to fit small telecom rooms with a couple of patch panels and switches to larger IDFs and MDFs that require large campus switches and rackmount servers. Future expansions are much easier when the racks, cable management accessories and connectivity are designed to work together.

To find out more **CLICK HERE.**
www.legrand.us

Comtec

Comtec has you covered with a range of enclosures available from stock.

Data, server and wall mounted cabinets, including flatpack and IP55 variants, are all supported by a host of accessories and companion products.

Lande's DYNAmic range of data and server cabinets in 12U-47U provides a rigid structure and great features as standard. The REDI-RACK cabinet integration service is also available via CHH CoNeX.

Comtec's wall mount range includes Ultima flatpack options, 600mm wide, 6U-21U and 450mm or 600mm deep, offering great logistical advantages.

Features include a lockable toughened glass door, secure side panels and multiple cable entry positions. Assembly can be completed in just a few minutes.

For industrial applications, warehouses and outdoor areas, Lande's IP55 wall mount cabinets provide protection against dust and water ingress. 600mm wide, they're available in 7U-16U, 450mm or 600mm deep. A range of outdoor IP65 cabinets ideal for FTTX applications is also available.

Speak to our team on 01480 415000 or **CLICK HERE** to view the range online.
www.comtecdirect.co.uk

Industrial revolution

Andrew Wreford of Rittal looks at the importance of specifying the right enclosures, racks and cabinets in industrial environments

When you think of IT you might naturally think of a data centre with row upon row of enclosures, racks and cabinets housing IT equipment in a perfectly clean and purpose built secure room. However, sometimes this is not always the case!

FOUR TO THE FLOOR

Manufacturing is being transformed by digitalisation, with Industry 4.0 paving the way for digital twins, predictive maintenance and smart factories. Sensors in machines and their components are now networked, so redeploying IT equipment to the manufacturing area helps to meet these new demands and reduce latency between IT and smart production machinery, such as robotics.

In such instances, any change in the IT equipment's environment can be substantial. If not planned effectively it can result in IT failures that cause production line stoppages due to overheating, contamination and physical damage.

PHYSICAL PROTECTION

Many factory floors present harsh environments for IT equipment. Whether this is in manufacturing, food processing or car production, most industrial operations result in an unclean environment for IT to perform effectively.

A standard IT rack is not suitable for this

type of application due to vented doors, which can allow dust and dirt to be drawn into the server. A simple solution would be to put a non-vented door on the rack to improve the ingress protection (IP) rating. Unfortunately, it is not as simple as that. Even if you put solid doors on a standard IT rack, the server fans will naturally draw outside air into the server through gaps between the rack frame and the door, and even through the cable entry points.

So we need to look to solutions that are tailored to industrial applications, with high IP ratings of the units that shield IT equipment from dust, dirt and water spray. However, high IP protection comes with its own challenges. For example, an IP54 rack naturally stops air going in and air going out, which is a problem when IT generates heat. This will cause the interior of the rack to build up temperature until, eventually, the IT equipment fails. Therefore, the importance of having an adequate cooling system in place to cope with IT heat generation is essential.

EFFICIENT COOLING

The first thing we've learned about cooling the IT rack is that both the external and internal environments have an impact on what type of cooling technology to use. In addition to this, compared to the machines they control, IT components are particularly sensitive to temperature fluctuations, while also generating a considerable amount of excess heat. This must be managed, and the only effective way to do so is by using climate control that is designed to cater for the needs of industrial IT.

In environments with relatively stable ambient air, fans can be used to provide suitable cooling. In the event of the area being dirty, filters can then be added to reduce the ingress of dust and dirt into an enclosure. However, in areas of high contamination and high ambient temperature, fans and filters will not suffice. Alternative cooling methods such as DX and water based cooling systems can be used. Consideration should also

be made to solutions where redundancy cooling options are available to allow for servicing and maintenance without taking the IT equipment down.

‘Sensors in machines and their components are now networked, so redeploying IT equipment t the manufacturing area helps to meet these ne demands and reduce latency between IT and sm production machinery, such as robotics.’

RELIABLE AND CONSTANT

Even the smallest power outages or disturbances can lead to downtime in processing and affect production, resulting in lost revenue. Therefore, solutions to ensure the security of the power for the IT infrastructure should be carefully considered.

A solution where power is easily deployed should be sought. This could be provided in the form of power distribution unit (PDU) strips. These can be supplied with different socket configurations and power ratings to suit the power demands of the

IT equipment. If a more secure source of power is required a single or three-phase uninterruptible power supply (UPS) can be installed to provide back-up in the event of a power failure.

FLEXIBLE SOLUTIONS

When locating IT on the shop floor, physical security is not just about hiding the IT behind a closed door to discourage prying eyes, it is about physically protecting it from accidental impacts. Steel doors and side panels create a barricade behind which IT equipment is protected, while four point locking across a door provides a physical deterrent to any opportunist thief. Integrated access control systems offer access to the cabinet remotely or via a swipe card or pin code.

Such solutions often come with a range of plug and play sensors for the monitoring of environmental conditions such as temperature, humidity and airflow.

Fully tailored monitoring packages can also make remote management easy. These include built-in simple network management protocol (SNMP) cards for alarm reporting and monitoring packages. These alert the end user before issues start to arise and help to assist with remote maintenance and diagnostics. For alarm reporting, systems should ideally fully support many of the standard protocols and be integrated into an existing platform.

ESSENTIAL SELECTION

The effective provision of localised industrial IT is now an essential part of any smart factory – therefore ensuring that an environment is suitable will not only improve IT uptime but stop downtime. Identifying the right package for your environment is essential to delivering a solution that can be integrated simply into manufacturing, production and processing facilities, helping to future proof the demands of the shop floor. ■

ANDREW WREFORD

Andrew Wreford has over 15 years' experience within the IT and data centre industry. He joined Rittal in 2006 as a field service technician covering the south of England. His extensive knowledge led Wreford to become Rittal's product manager for IT – a role that enables him to capitalise on his experience and demonstrate his understanding of how crucial it is to support key data centre infrastructure.

Quick clicks

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

CloudBolt's The Truth About Hybrid Cloud and Digital Transformation report is available to read by **CLICKING HERE.**

How Wi-SUN Technology Empowers Smart City and IoT Development is an e-book by **Wi-SUN Alliance.** **CLICK HERE** to obtain a copy.

The Changing Shape of Colocation is a blog from **Siemon.** **CLICK HERE** to read it.

Save Time and Space With Structured Cabling that Grows Alongside Your Data Center is a blog from **Huber+Suhner.** **CLICK HERE** to read it.

Leviton has published its Data Center Network Interactive Handbook. **CLICK HERE** to download a copy.

Adopting Appropriate Infrastructure in Datacentre Design is a blog from **Centiel.** **CLICK HERE** to read it.

How to Limit the Impact of High Power PoE on Cabling is a blog by Didier Willems of **Nexans.** **CLICK HERE** to read it.

Rules of attraction

Andrea Palmer of BCS, the Chartered Institute for IT, examines the gender imbalance in IT and why it's vital to bring diversity into the workplace

The number of women in tech has, sadly, remained less than 20 per cent for at least the last two decades in the UK and despite organisations wanting more diverse teams there is little sign of improvement. This has exacerbated during the coronavirus pandemic, as underrepresented groups experience the majority of the challenges. For example, more women were made redundant, and others were forced to leave the industry as they tried to balance the additional responsibilities of being carers and home schooling.

FRESH THINKING

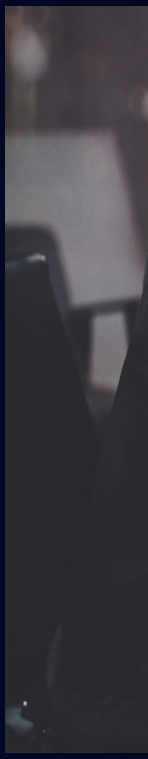
We are living in a rapidly evolving digital and technological world, and encouraging diversity in the workplace leads to fresh ideas and perceptions. Harnessing differences and empowering people to work together allows a company to adapt to our ever-changing world, discover new markets and understand what people want and need – therefore improving customer experiences.

Failure to embrace diversity and inclusion could result in missed opportunities, potential failure or disruption to your marketplace. Whilst diversity recognises differences between employees, inclusion embraces these differences, acknowledging that they can benefit a business.

WORLD VIEW

The global economy is becoming more interconnected, resulting in people from different backgrounds and cultures coming together in the workplace. Therefore, creating a workplace that reflects our society will present new opportunities and challenges, leading to an improved company culture that fosters adaptability, acceptance and trust.

Psychological safety helps build trust and enables people to appreciate other people's opinions and beliefs – particularly that it is safe to take speak up about ideas, questions, concerns or mistakes without the risk of humiliation or punishment. This, in turn, leads to high performing teams and lower attrition rates, as employees have a greater sense of belonging and wellbeing.



DECISION TIME

If organisations want to truly embed diversity at the core of their businesses, they need to be prepared to make some tough decisions and hold each other to account. Ensure the whole organisation goes through unconscious bias training, not just the hiring managers.

You need to win the hearts and minds of

your hiring managers and leaders, and be clear on the benefits diversity brings to a team and an organisation. Once a leader has a lightbulb moment and their decision making is anchored in fairness and is in line with company values, the more bias can be eliminated. Reducing biases will help to develop a culture of acceptance and enable individuals to bring their whole selves to work and believe that the tech industry is an environment where they can thrive.

not all about coding.

Yes, there are technical roles like enterprise architect, software engineer, data scientist and cybersecurity specialist but there are also non-technical roles to consider like user experience (UX) design, business change, marketing manager, business analyst, trainer, product manager and project management – these are all aspects of working in tech.

We need to talk about careers in tech

OPPORTUNITY KNOCKS

The gender imbalance starts in schools, meaning the pipeline is narrowed from an early age, as girls move away from studying computing. We need to demystify what computing really is and girls need to see role models and be shown how exciting and varied a career in technology can be – it's and signpost opportunities if we are to attract more girls. Organisations can work with their local schools to show what a day in the life of a tech professional is like and what the individuals studied at GCSE and university. Alternatively, they should be encouraged to run code clubs and science, technology, engineering and mathematics

(STEM) activities that could spark girls' interest to follow a career into tech.

> 'We need to demystify what computing really is and girls need to see role models and be shown how exciting and varied a career in technology can be – it's not all about coding.'

TALENT SCOUT

Attracting diverse applicants both internally and externally is key, so if you find that you don't have a diverse pool of candidates don't proceed to the next stage of the selection process. Go back to the agencies and head-hunters, and demand a balanced pool to select from – otherwise you won't accept any of their candidates. For internal candidates you may need to tap one of your high performing women on the shoulder and suggest that they should consider the role being advertised. Remember to highlight the skills they have that are applicable to the position.

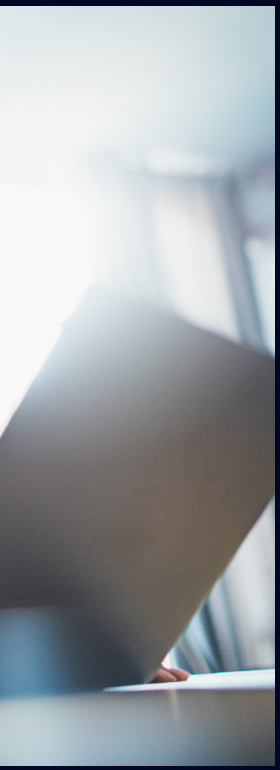
The tech industry struggles to retain women, as many leave at the mid-career point because they believe their careers have stalled, they lack mentorship or they feel isolated. It often means it is difficult to navigate the ladder to the top, especially when there is no one like you or supporting you.

Research states one of the key reasons women leave is unconscious bias and it is these biases that are hindering promotion. Show that your organisation supports its talent throughout their career paths. Create a safe environment for people to work in and offer reverse mentoring, as this offers opportunities to learn and understand some of the challenges diverse individuals face.

MIND THE GAP

There is currently a skills gap in the tech industry and this will only increase, as many of the roles we will require in five years' time don't exist yet. Whilst millennials are deemed to be the answer for many organisations looking to deal with their digital transformations, they are not the only answer – nor is there enough of them to plug the gap.

We need to examine alternative routes into how we can fill the roles. One way is to have returner programmers that help people who have been carers or on long-term career breaks to signpost how the skills they have learnt as a parent/carer can be relevant and applied in today's workforce, for example, project management, analytical skills or teamwork and collaboration. Having a range of ages, experience and diversity increases innovation and profitability.



In 2020 the BCS estimated there were around 13,000 unemployed IT specialists in the UK aged 50 and over, which equates to an unemployment rate of 3.4 per cent – well above the rate for IT specialists aged 16-49 (2.2 per cent). The lack of people over 50 working in tech is a strong indication that we need to reskill this group to meet the demand for the new skills and ensure we equip people with the knowledge required for fulfilling careers.

WORK IN PROGRESS

Developing people's digital skills will help the economy to recover from the impact of the pandemic. Organisations can attract talent by creating an environment and culture people want to work in through publishing equitable practices, diversity, equity and inclusion goals, and showing examples on websites how staff are able to work remotely and flexibly, and have support and development opportunities throughout their careers. ■

ANDREA PALMER

Andrea Palmer is the chair of BCS Women, sits on the BCS board and volunteers as a programme manager for iSAW. She is a digital transformation leader who focuses on embedding technological and cultural solutions to complex business functions globally – areas include trading, shipping, legal, finance, human resources and alternative energy.

Give me five!

Stuart McKay of Panduit offers five best practices to help achieve a converged network infrastructure

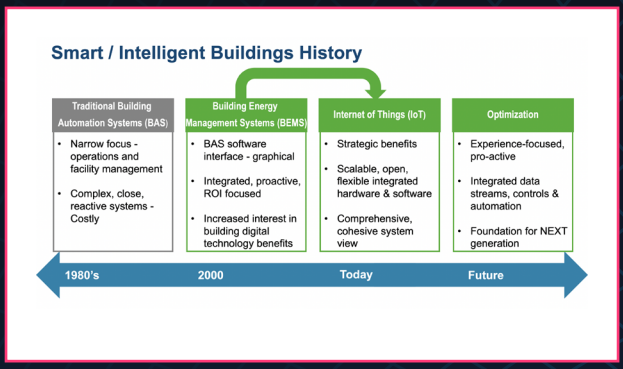
Converged infrastructure and smart buildings have been given even greater impetus by various factors over the past year. Keeping people away from close contact environments, increased pressure from regulators, investors and customers for organisations to reduce carbon emissions, and the continuous development of technology have all been key drivers. Wireless can only take a business so far within a building and the requirement for structured cabling infrastructure is greater than ever.

HISTORY LESSON

When they emerged in the 1980s, traditional building automation systems (BAS) were the solution to managing and monitoring equipment in large corporate buildings. While BAS focused on operational and facilities management (FM) requirements, they were complex and expensive.

In many situations the complexity, technical design and siloed nature of the systems constrained operator interactions and led to underutilisation.

In the mid-2000s, building energy management systems (BEMS) were introduced as a software solution to overcome the challenges of BAS. The software showcased easy to use graphical user interfaces (GUI), delivered equipment key performance indicators (KPIs) and created opportunities for improvement in energy efficiency. BEMS were a significant development on the journey to digital technologies for FM.



HERE AND NOW

Today, internet of things (IoT) based smart building solutions open the way to wider digitisation of smaller buildings previously unrecognised by the BAS market, and the explosion of connected devices over the past five years is testament to their growing importance. Gartner stated in 2017 that connected business devices such as power over Ethernet (PoE); LED lighting; heating,

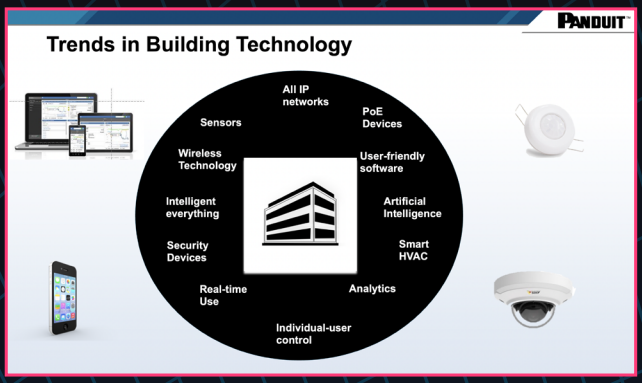
ventilation and air conditioning (HVAC); physical security and sensors numbered 1.5 billion devices worldwide and would grow to around 4.4 billion by 2020.

All these devices must connect at some point to the network and this load will continue to expand. As convergence continues the demand for PoE increases. The latest power specification for PoE Type 4 has reached 90W (power at source) and compliant with IEEE 802.3bt it uses all pairs to transmit power.

IoT is of great benefit to the expansion of a cost effective, open and flexible approach to the digital transformation of commercial facilities. Data streams from existing technologies can be implemented with low cost wireless components. The analytics of IoT smart building solutions are the foundation of the value proposition for investment in commercial real estate. These solutions use data from existing building systems, as well as supplemental devices, to provide a cohesive and comprehensive view of building performance – breaking down the siloes of individual system automation.

TREND SETTING

Looking at the trends of building technology above, we see increases in all of these areas. There are more devices with increased intelligence built-in, as well as more sensors to collect data on occupancy, temperature and building wellness.
The data can then be used to develop actionable information. We are witnessing the convergence on an all-IP network to manage, power and control all these devices. Data interoperability has given rise to the trend to combine all information and management on to a single software platform for ease of use and greater insights.



FIVE ALIVE

It is important to keep in mind best practices to maintain a check on infrastructure plans being developed and device decisions that will impact the scope and scale of the capabilities of any infrastructure scheme. Here are five key best practices for creating an effective converged building infrastructure:

- Invest in the highest quality and most flexible structured cabling

Modern device technology is allowing the reuse of legacy structured cabling in a variety of situations, helped by quality cable suppliers that offer 25-year warranties. Invest in the latest Category 6A cable and, in specific situations, optical fibre cable as essential elements in effective converged infrastructure. The next 25 years will see even higher loads being driven through the infrastructure, therefore no organisation can afford to restrict its future data speed or expansion capabilities for the sake of minimal savings at the front end.

• Optimise a telecommunications room

Space is at a premium in every commercial building and, like everywhere else, a telecommunications room must be optimised for the capabilities required across the network it serves. The strong growth in endpoints requires more available ports within cabinets. Flexible, higher density, taller cabinet solutions are helping to increase capacity, as are zero RU patching, one to one patching and 28AWG patch cords. This flexibility allows any sized telecommunications room or closet to provide increased capacity for building systems.

'Gartner stated in 2017 that connected business devices such as power over Ethernet (PoE); LED lighting; heating, ventilation and air conditioning (HVAC); physical security and sensors numbered 1.5 billion devices worldwide and would grow to around 4.4 billion by 2020.'

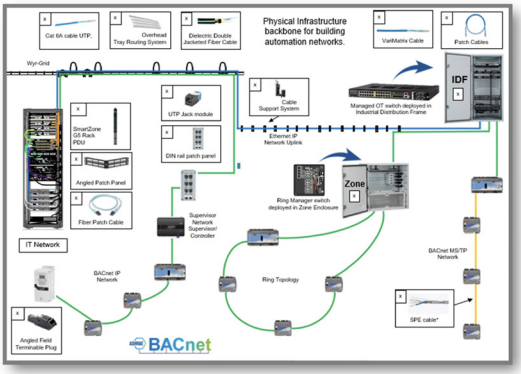
• Plan for all-IP BAS

To gain the fastest return on investment and retain occupants, building owners must understand and implement what the market requires from prime office, warehouse and manufacturing premises. Creating buildings that are easy for occupiers to move into, implement and/or connect to a BAS is becoming a necessity.

Increased cable density throughout a building requires innovative and space optimised wall cabinets and consolidation point boxes designed to house, secure and protect cables from human and environmental contamination in underfloor, wall and ceiling areas, whilst remaining easy to access and work on when maintenance and moves, adds and changes (MACs) are required. Network connectivity is allowing organisations to gather data from every attached device and analyse it in various ways to generate insights to reduce energy use, increase safety and security, provide individually programmable environments to maximise the users' satisfaction and productivity.

The all-IP based networked building will generate masses of data, creating the capability to be responsive to the changing needs of the owners and building users.

Example BAS Configuration



• Make connectivity easy – ease of device installation and MACs

The increased number of devices being connected, and the data generated, requires new robust and

simple to use connectors, such as external field terminated plugs, which now offer straight and 45° angled up or down cable connection for ease of use and are available in unshielded (UTP) and shielded (STP) formats. Also, Category 6A UTP cords with an RJ-45 plug on one end and direct TG-style connector on the other are becoming increasing required for direct connect solutions for plug attached network devices, where the smaller plug size is required. Being able to simply install and upgrade is an absolute requirement with the future growth of attached devices.

• Room scheduling technology

The rush to video conferencing apps during lockdown has set a precedent for the continued growth in audiovisual (AV). In the post-pandemic office touch-free AV with fully automated meeting spaces will be more in demand. Bring your own device casting and control can now operate the corporate AV system without dongles or connecting wires. Users can simply scan a QR code to control the room, while operating low touch AV with simple to use multiple room set-ups to reduce the number of people in individual rooms. The technology is here, and without the luxury of on-site AV teams, simple apps and remote monitoring and updates are essential.

SHIFT WORK

For many building owners and occupants, hard lessons have been learned over the past 18 months and the shift towards converged infrastructure offers the chance to create truly intelligent building environments. Within these new working and relaxing spaces requirements have changed, with a focus on improved engagement, job satisfaction and increased productivity for users. This is achieved while maximising space utilisation, energy usage and controlling other resources to help future proof an organisation. ■

STUART McKAY

Stuart McKay is a highly experienced business development manager for Panduit EMEA, with 21 years at the company spent 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 a number of white papers on intelligent building and PoE infrastructure.

EDP Europe

EDP Europe stocks and distributes the latest high capacity fibre optic management system from Huber+Suhner – IANOS.

IANOS is a class leading and future proofed fibre optic management system that facilitates Base-2, Base-8, Base-12 and Base-24 pre-terminated cable systems for best in class density, speed of installation, handling and scalability – all major factors in future proofing cabling infrastructure. IANOS is a unique fibre management system that is designed to accommodate a quick, simple and inevitable upgrade path from 10 Gigabit Ethernet serial to 40 and 100 Gigabit Ethernet parallel optics.

IANOS offers individual modules that easily slide out, reducing cord disruption and easing access, with each 1U chassis providing a maximum of 144 LC connections. Single or twin modules help improve flexibility, with twin modules offering improved routing space and splice handling. IANOS chassis are available in 1U or 4U rackmounts.

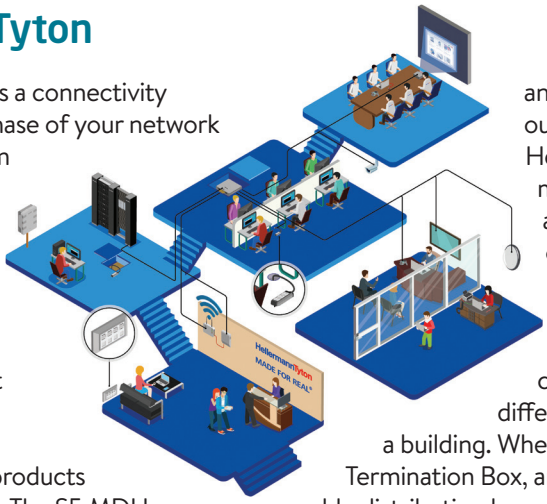
IANOS is available from stock at EDP Europe.

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

www.edpeurope.com

HellermannTyton

HellermannTyton has a connectivity solution for every phase of your network infrastructure – from cable entry into the building and distribution across the building, to the data outlet at the desk.



From the moment fibre optic cable enters the building, HellermannTyton's products come into their own. The S5 MDU enclosure will distribute any incoming fibre to the comms room or to multiple zones in the building. From the comms room, HellermannTyton has a number of copper and fibre solutions that can then be used to connect offices, active equipment and hardware to the outside world. HellermannTyton manufactures a wide range of innovative solutions that are designed to provide connectivity to different zones within a building. Whether it's the Zone Termination Box, an under the floor cable distribution box, a work area pod or a pre-terminated 'to the desk' solution, HellermannTyton has a product that can meet the network infrastructure demands of any intelligent building.

For more information **CLICK HERE.**

www.htdata.co.uk

Leviton

As connected technology and the internet of things (IoT) proliferate into every area of the enterprise, many organisations are considering an intelligent or smart building infrastructure. Yet this undertaking can bring challenges and complex choices that aren't always apparent at the outset.

Leviton can help you build the ideal infrastructure for a smart building, with cabling systems that are optimised for power over Ethernet (PoE) and solutions designed for connecting remote smart devices.

CLICK HERE to check out our white papers, on-demand webinars and other resources to prepare your network for the future.

www.levitonemea.com

Siemon

To Build A Truly Intelligent Building, Start With The End in Mind is the title of a new blog by Mike Brooman, CEO of Siemon complementary partner, Vanti.

In this blog he examines why it is time for businesses to rethink their office facilities and start focusing on creating a work environment that is smart and which optimises the experience for those returning to the desk. After all, working from home has offered many advantages including a better focus on work, creative thinking and work/life balance. So, how can companies provide employees with an environment that offers the same, plus the benefits of social interaction and collaboration?

According to Brooman, businesses must follow a 'people first' mentality and take a holistic, collaborative approach by establishing the desired user experience first and then implementing the right technologies accordingly. Put simply, to make a next generation smart building truly intelligent businesses must start with its users.

To read the full blog **CLICK HERE.**

www.siemon.com

Breaking bad *habits*

Piers Benjamin of Corning Optical Communications explains why it's time to build future ready converged network infrastructures

As we bring more and more technology into our buildings, we face the recurring challenge of needing more data and more power to support changing technology plans. Traditionally, we have solved the need for more data and power by ripping and replacing existing cable in a building with next generation copper cable. We have continued to do the same thing repeatedly by upgrading our cabling over the years – from Category 1 to Category 3 to Category 5/5e to Category 6/6A to Category 7/7A.

JOINING FORCES

If we choose to stick with long runs of copper cable in the horizonal, we can expect nothing else. Instead, it's time to think about choosing future ready infrastructure that can scale and adapt to support changing network needs. One solution is composite cables that include both optical fibre and copper conductors under the same jacket. This leverages the virtually unlimited bandwidth capabilities of singlemode fibre and the power capabilities of copper to deliver both data and power across distances of over 600m in some cases, to enable devices at the edge of the network.

Consider the following examples where choosing composite cabling can lead to different, and better, results:

- Reach further distances

A parking garage that did not plan for connectivity needs to install security cameras and access control. Traditionally, it would need to install conduit and local power outlets throughout the garage and intermediate distribution frame (IDF) closets nearly every 90m to support remote devices. Instead, it can use composite cable and remotely power these devices from the headend to provide connectivity beyond 600m. In the future

more devices, like smart parking sensors, can be added without having to pull additional cable.

• Repurpose saved space

A hotel is planning for a phone service, TV and Wi-Fi in every guest room. Traditionally, it would need to pull three separate category cables to each room, which would quickly crowd cable trays, leaving no room to expand. Instead, it can pull one composite cable to each room to provide enough data and power to enable triple play service. By overcoming the 90m distance rule of category cabling, the hotel can eliminate the need for a telecommunications room on each floor and repurpose saved space. For example, it could turn a standard guest room into a junior suite and charge more for that upgraded room per night. Senior living communities can benefit from this fibre to the room approach as well.

SIMPLY DOES IT

Once we have a future ready infrastructure in place, network upgrades and expansions become simpler and much more cost effective. As speeds and standards evolve, it is possible to upgrade electronics in the headend and at the edge without having to rip and replace cabling. We can apply these same lessons when choosing active LAN equipment for our networks too.

In the data centre world we've seen the evolution of needing 1Gb/s then 10Gb/s then 40Gb/s – with 100Gb/s now the next frontier. We are seeing this same evolution in the enterprise space, with new standards calling for faster speeds, especially to support increasing Wi-Fi demands. Our preference towards wireless connectivity has even led us to design spaces differently. For example, office spaces traditionally planned for 2-4 physical data drops per workstation.

Now, they are planning for only 0-1 drops

per workstation, with the remaining being wireless. As a result, network switches – which are responsible for moving data throughout the network – must be routinely replaced with the next generation of switching gear that can run at the latest speeds to support these increased data demands.

'It's time to think about choosing future ready infrastructure that can scale and adapt to support changing network needs. One solution is composite cables that include both optical fibre and copper conductors under the same jacket.'

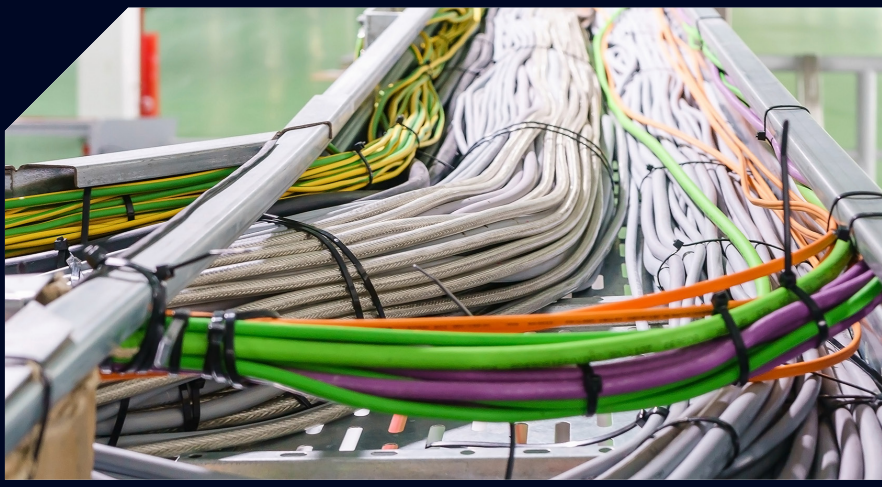
MONEY MATTERS

Network upgrades can be expensive because switching manufacturers often run their software and operating system on each physical switch. This means as we go to upgrade our switches to meet the latest speeds, we must also re-purchase that same software, even though the software was not part of the speed problem. The good news is that we can choose to design our networks differently and recoup some of these upgrade expenses.

Instead of using expensive, proprietary switching equipment that has software running on it, we can separate the hardware (data plane, switching) from the software (control plane, brains) into two separate devices. This alternative approach is called software defined LAN (SD-LAN). By separating the switching hardware from the control plane, network managers can replace their existing switch with one that runs at a higher speed, while leaving their software investment in place.

AT THE EDGE

We've explored two key considerations for designing smarter networks – future ready infrastructure and cost effective switching gear. Now, let's talk about the technology requirements at the edge and how we can choose flexible networks to enable our changing needs.



Above all, the most important network design consideration is understanding the applications at the edge that need

connectivity. Though we might know what our technology needs are today, how can we plan for unknown technology needs in the future, as buildings become smarter? The answer – design for flexibility.

PERFORMANCE ART

Because each application has different network requirements, it's important to understand that there is no one size fits all approach to network design. That's why choosing a flexible solution that can support both Active Ethernet and passive optical networks (PON) simultaneously within the same platform gives building owners and network managers the most flexibility to grow, change and expand, without having to install additional electronics at the edge or rework their entire network design.

High performance applications and devices such as those used for audiovisual that have specific timing requirements to prevent lag, Wi-Fi access points that seamlessly serve multiple users, and pan-tilt-zoom security cameras that send large amounts of data up the network, often demand more bandwidth. IT managers may choose to enable these devices with a dedicated point to point connection, also known as Active Ethernet.

More devices, more users and more network requirements can also mean more points of failure and more complex management. As we expect more from our networks, it's important to choose a management platform that gives us maximum control and visibility to the edge.

PLAN OF ACTION

As our technology plans continue to change, one thing stays the same – we are continuously planning for more data and more power. Rather than repeating the same rip and replace practices, let's leverage future ready infrastructure and adaptable SD-LAN networks to deliver data and power to the edge. By doing so, we can stay ahead of our technology plans. ■

PIERS BENJAMIN

Piers Benjamin joined Corning Optical Communications in 2018 as EMEA marketing manager for in-building networks. He has over 10 years' experience within the industry, with past marketing roles including working for a UK distributor. At Corning, Benjamin is responsible for marketing activities across traditional LAN and fibre in the horizontal technologies.

Blue Orange helps change the face of education

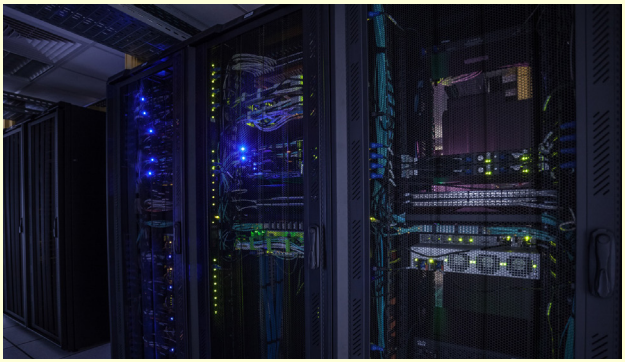
Blue Orange is working with Liverpool's Hugh Baird College on an innovative concept that involves the creation of collaboration walls with giant touchscreen displays, handheld mobile devices and more flexible room layouts where the traditional teacher isn't always stood at the front of the class.

Hugh Baird College is home to more than 5,000 students on over 300 courses, where technology is at the heart of a ground-breaking vision to create more compelling, inviting and engaging lessons. The Bootle based college is determined to future proof learning for generations to come and 're-write the education rule book'.

Blue Orange has installed 65-inch and 75-inch Sharp touchscreens in a series of refurbished classrooms. They are used as interactive touchscreens, which are complemented by writing walls. The screens are all network connected to enable many internet based applications that further bring education to life.

OpenText adds cyber resilience to its Netherlands data centre

OpenText has expanded its data centre in the Netherlands to support Carbonite Server. The expanded regional support empowers OpenText's small to medium sized enterprise (SME) customers and partners with greater flexibility and more options to store their data in compliance with UK and European Union regulations. OpenText is committed to expanding data centre support in additional regions to help customers address complex data sovereignty issues by uniformly ensuring compliance with government regulations.



This expansion demonstrates OpenText's commitment to grow its European presence, and provide support to SMEs and the partners who serve them. Carbonite Server is an all in one back-up and recovery solution for physical, virtual and legacy systems, with optional cloud failover. Recognised for its flexibility, Carbonite Server offers various deployment options and the ability to restore current or historical data from the cloud or a local appliance.

Olympiastadion Berlin strikes gold with Extreme Networks

Extreme Networks has been selected as the official Wi-Fi solutions provider for the historic Olympiastadion Berlin in Germany. Together with longstanding partner, PKN Datenkommunikations, and in preparation for the 2024 European Football Championship, Extreme Networks will deploy a high performance Wi-Fi 6 network that meets the Union of European Football Associations' (UEFA) stringent venue and networking infrastructure requirements.

Olympiastadion Berlin, part of the Berlin Olympic Park, was opened on 1st August 1936. It is one of the largest stadiums in Germany for international football matches and one of the world's most prestigious and versatile venues for sporting and entertainment events.

This will be the first and largest public Wi-Fi 6 deployment in a European stadium, allowing the venue to meet the most demanding connectivity requirements of spectators, staff and media attending football tournaments, concerts and international sporting events for years to come. It will also support mission critical operations and back of house systems.

PROJECTS & CONTRACTS IN BRIEF

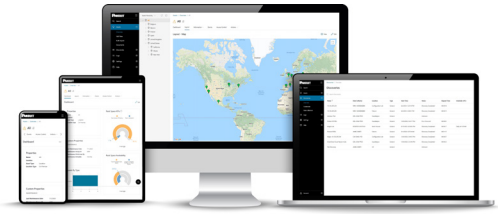
Neos Networks has announced a continuation of its partnership with CityFibre, expanding its network footprint and bringing greater connectivity opportunities to a further nine UK towns and cities. The places set to benefit from the announcement include Cambridge, Cheltenham, Coventry, Derby, Gloucester, Huddersfield, Peterborough, Southend and Swindon.

Community Fibre is partnering with Lifemote. It will see Wi-Fi issues experienced by Community Fibre customers solved more quickly thanks to advanced intelligence from Lifemote that can detect and flag any problems experienced by customers before they even notice them.

Autorama Group's leading brand Vanarama recently consulted Tech Amigos to provide strategic direction, offer unrivalled Amazon Web Services (AWS) cloud support and transform its online presence.

Hamilton Reserve Bank has completed its end to end transformation with Temenos. The unmatched breadth of Temenos' front to back banking technology will help Hamilton Reserve Bank provide its customers across 150 countries with secure same day worldwide payments and instant customer account access 24/7.

Panduit



SmartZone Cloud is Panduit's enhanced Microsoft Azure cloud based enterprise data centre infrastructure management (DCIM) software. It integrates power and environmental monitoring with cabinet access, asset tracking and physical infrastructure connectivity management. Data centre managers, engineers, operators and customers can monitor critical infrastructure resources and make informed decisions about capacity, changing environmental conditions and performance from any authorised device and via unlimited users worldwide.

Providing single pane of glass dashboard visualisation is a vital step towards improved data centre agility and increased efficiency. The capability to track critical infrastructure resources helps stakeholders achieve service level agreements (SLAs) and allows customer defined users access to SmartZone Cloud's real time monitoring, management and reporting of key attributes across assets, power, cooling and provisioning.

Agentless auto-discovery of IT devices eases installations and reduces set-up time and real time software updates ensure optimisation. SmartZone Cloud's open API is REST based and integrates with IT service management systems, whilst also supporting power distribution units and competitor devices.

To find out more **CLICK HERE.**

www.panduit.com

Secure Power

Micro-modular solutions and the need for even greater flexibility are key priorities for the industry, as businesses look for more 'scale as you grow' options that not only deliver on resilience but also efficiency. Understanding the real benefits of modularity and what can be achieved with modular options is key to meeting power protection strategies.

Secure Power is a long standing partner of Socomec, which offers a three phase rack mountable modular solution that is ideal for micro-modular environments. Offering as little as 25kW N+1 up to 75kW capacity solutions between 9U-15U of rack space, the MODULYS GP configurations can significantly reduce mean time to recovery (MTTR).

For more information about Socomec's modular UPS systems and other products and services that Secure Power offers **CLICK HERE** or call 0800 080 3118.

www.securepower.com

HellermannTyton

HellermannTyton manufactures and supplies a wide range of 'to the building' connectivity solutions for last mile networks and fibre to the home (FTTH) applications.

Deployed as a fibre connection point or a building entry point, the Aerial Fibre Node (AFN), Fibre Facade Enclosure (FFE) and the Multi-Customer Connection Enclosure (MCCE) can deliver up to 24 (AFN) or 12 (FFE and MCCE) fibre drops to buildings or individual customers. The AFN and FFE can both be pole or wall mounted, giving the installer flexibility with their network design and fibre connectivity options.

With a range of Customer Connection Points (CCP) and the Customer Connection Enclosure (CCE), HellermannTyton has a number of 'to the home' fibre options. The CCP is available in various formats and can be either wall mounted or placed in a chamber or toby box at the property. The CCE is a wall mounted solution but can store up to 50m of fibre ready for a later fibre connection.

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

All you need to know

CLICK ON THE COVER TO VIEW THE 2021 MEDIA KIT

The sky's the limit

Adrian Rowley of Gigamon explains why it's all about strategy when migrating to the cloud

Cloud is king in the current business landscape, with organisations looking to implement a permanent hybrid infrastructure. Recent research from Alight highlights that 65 per cent of workers want to be able to combine office working with home working moving forward, and the cloud environment not only enables this level of flexibility for organisations and their teams, but also encourages scalability and allows data and IT infrastructure to grow exponentially if needed. Similarly, decreasing resource is just as simple, allowing businesses with a reduced workforce and tighter budget to cut down on costs – an essential factor in the continuously challenging financial climate.

NOT AS EASY AS IT LOOKS

Cloud migration is not a simple process and can often become a larger investment than network operations teams and their chief information security officers (CISOs) initially expect. It is therefore essential that the journey from core to cloud is optimised, and a number of factors must be taken into consideration.

Alongside bolstering security for the cloud environment, visibility into all data in motion is indispensable. Establishing a successful strategy beforehand can save a lot of time and money. Creating this foundation to act as a guide for teams leading a cloud migration strategy – and putting visibility and security at the very centre of operations – can be the difference between a fast and

successful migration and a failed digital transformation attempt.

START WITH STRATEGY

A solid cloud migration strategy, which includes analysing each corporate asset before any decisions are made, as well as developing a detailed plan that explores a variety of avenues and outcomes, will inevitably be the most important part of the journey for any organisation. The best place to start is to establish the desired operating system – a decision that will be influenced by which applications an organisation plans to use within the cloud.

While Linux is the most common – the majority of cloud applications will run in this environment – it is not unusual for Windows Server or a variety of other operating systems to be in place. It is important that these systems are considered early on as part of any strategy planning.

The second stage of the strategy development process is to assess the type of migration that the team would prefer to embark on. If legacy systems are already in place, the migration is likely to be complex and it is possible that data will need to be modified to fit within the more modern cloud infrastructure. Similarly, important questions need to be asked by the team leading the migration into how portable the data is and what format it will be transferred in. Is coding the answer to gather the files you need, or will the physical movement of hard drives be a more reliable solution?

COST AND PEOPLE

Without the right team behind the migration, it will be a challenge to get it right first time. Typically, a business has two choices when deciding how best to drive its digital transformation initiative – make it an in-house project or hire a cloud provider's migration team to manage the transition externally.

Taking into account that the industry is currently facing a digital skills shortage, it is no surprise that a lot of organisations simply do not have the in-house resource to dedicate whole teams to a migration. However, fees from cloud providers can often be exorbitant and it is worth negotiating early on to make sure the initial contract includes support to ensure a smooth migration process.

'The migration to the cloud is clearly not a straightforward process and no decisions should be made lightly. Considering the significant investment, organisations will be hoping to do it once and do it well.'

Cost is an important consideration when planning a move to the cloud, and pricing will differ between each cloud provider. By ensuring that teams shop around before they make any decisions, and fully understand what differentiates each provider from the other, it is easier to choose the right contract to fit business needs. This, in turn, allows digital transformation to succeed.

MIGRATION SUCCESS

Once a strategy is in place, cloud migration can begin to take shape. However, ensuring complete visibility into an organisation's data – both in the transition to the cloud and once it is firmly within its new environment – has never been more important.

A recent study by Flexera found that less than 25 per cent of organisations have complete visibility into their IT assets, with cloud infrastructure harder to view than on-premises hardware and software. Not only does less observability make threat detection far more of a challenge, without a clear and unified view into traffic it is impossible to optimise performance. A slower network, with bottlenecks and blindspots, will have negative repercussions for internal teams and end users alike.

Therefore, in order to avoid cloud migration failure, either in the transition period or in the early stages of managing cloud data, visibility must be built in from the start. A top priority, particularly for those working with a hybrid cloud environment, observability can often only be available in 'islands' rather than as a cohesive view across the whole network. This split visibility creates dangerous gaps, whereas cloud operations teams should be aiming to achieve a single pane of glass view into traffic. While the cloud is inevitably a more difficult infrastructure

to manage due to its distributed nature, without a clear line of sight into data all migration efforts and strategy planning as detailed above will be worthless.

BOLSTERING SECURITY

Security in the cloud is a consistent challenge for businesses looking to migrate. Just as visibility must be prioritised within every process, security should also be engrained from the very start and cutting corners will only create vulnerabilities that hackers will quickly detect and exploit.

As part of a cloud migration, organisations should make sure that teams have assessed their current cybersecurity strategy and identified how it needs to adapt following the introduction of the cloud. Again, this can be done in-house, although it is advisable to consult a cloud security expert – or developers of the applications within the cloud – as they will have had experience of all manner of breaches in the past. Security should also be part of the decision making process when choosing a cloud provider, and research into the breaches they have experienced, as well as how they have responded, should influence the final choice.

BEST PRACTICE

The migration to the cloud is clearly not a straightforward process and no decisions should be made lightly. Considering the significant investment, organisations will be hoping to do it once and do it well. It is also an unavoidable transition for many companies hoping to accommodate a changing workforce. However, as long as planning is prioritised and time is spent exploring the many options, organisations can be confident that they are making informed decisions that are best for business outcomes. ■

ADRIAN ROWLEY

Adrian Rowley is senior director sales engineering EMEA at Gigamon. He has over 15 years of experience in the industry and joined the Gigamon team in 2017. Rowley has since been a prominent thought leader discussing the importance of network visibility and, more recently, the challenges of successful cloud migration.

WE HOPE YOU HAVE ENJOYED

Inside_Networks

COMING UP IN NOVEMBER 21'S ISSUE:

SPECIAL FEATURES:
> DCIM
> GREEN NETWORK INFRASTRUCTURES

TO FIND OUT MORE ABOUT PROMOTION WITHIN THESE FEATURES CLICK HERE

> ALL THE LATEST NEWS, VIEWS, COMMENT AND ANALYSIS

> OPTIMISING PHYSICAL SECURITY IN AND AROUND DATA CENTRES

> HOW TO MAINTAIN A GREEN BUILDING IN AN INTERNET OF THINGS (IOT) WORLD

> NEIL CRESSWELL GOES UNDER THE SPOTLIGHT

> WHY SURGING DATA CENTRE GROWTH DEMANDS A GREATER FOCUS ON SUSTAINABILITY

> HOW DCIM CAN DELIVER REAL VALUE TO A DATA CENTRE

> WHY ASIS HAS CREATED A SECURITY BEST PRACTICES DOCUMENT FOR THE CANNABIS INDUSTRY

> MOVES, ADDS AND CHANGES IN THE CHANNEL

> NETWORK INFRASTRUCTURE CASE STUDIES FROM AROUND THE WORLD

> THE LATEST PRODUCT, SYSTEM AND SERVICE DEVELOPMENTS

FOR A FREE SUBSCRIPTION CLICK HERE