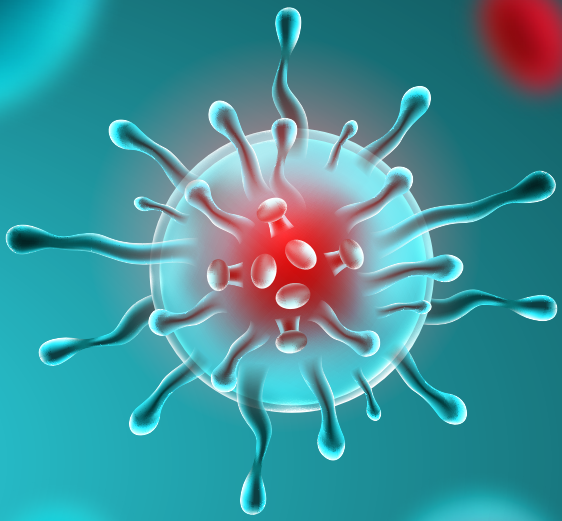
Inside_Networks

THE NETWORK INFRASTRUCTURE E-M

Cop
me

HOW TH
CRISIS IS
NETWOR
SECTOR

JUN
20



Go with the flow

THE EVOLUTION OF SMART NETWORK MONITORING AND MANAGEMENT

ping chanism

E CORONAVIRUS
IMPACTING THE
RK INFRASTRUCTURE

Cold light of day

WHY IT PAYS TO LOOK BEYOND THE NORM FOR TRUE COOLING INNOVATION

SIEMON™

Ultra High Density Fibre Enclosure

Future-proof your Data Centre with Siemon's LightStack® 8 Fibre Solution.

LightStack® 8

Modernise your data centre to support high density applications for the ever growing data demand.

Siemon's LightStack® 8 Ultra High Density Plug and Play System enables 100% fibre utilisation, and supports high density data centres with 40 gigabit and 100 gigabit, as well as future 200 and 400 gigabit applications.

Connecting the world to a higher standard.

siemon.com

Discover more >

Certified Network Cable Installer

Shaping the Future of the Industry

Certify your knowledge and gain:

- The highest levels of knowledge, skills and expertise in network cabling infrastructures
- 2 x BTEC Level 3 Awards
- Official CNCI® Certification
- Use of the CNCI post nominal title
- Use of the CNCI® Logo
- Use of the CNCI® Digital Badge

8 Day Instructor-led Remote Attendance and 4 Day Classroom-based Program

Certified Network Cable Installer (CNCI®) – Remote Attendance Program

To allow learning to continue during this restricted time we have re-organised the sought after CNCI® program in the UK to be a blended learning option that combines Remote Attendance classes (allowing you to learn the theory elements) followed by practical sessions to be scheduled in the future once restrictions are lifted.

The CNCI® program allows you to demonstrate the highest levels of knowledge, skills and competency in network cable infrastructure. Successful completion proves you can undertake copper and fibre cabling installation, termination and testing to the highest quality whilst complying to industry best practice and standards to ensure a right first-time approach.

Read the program overviews here:

Certified Network Cable Installer (CNCI®) - **Complete Program**

Certified Network Cable Installer (CNCI®) - **Copper Cabling**

Certified Network Cable Installer (CNCI®) - **Fibre Optic Cabling**

Certified Network Cable Installer

2 x BTEC Level 3 Awards (Copper & Optical Fibre)

=

4 Day
CNCI OPTICAL FIBRE THEORY
(via Remote Attendance)

+

4 Day
CNCI COPPER CABLING THEORY
(via Remote Attendance)

+

4 Day
PRACTICAL SESSION
(Classroom)

What is Remote Attendance?

For the last three years CNet has been delivering programs via 'Remote Attendance' (currently 42% of our learners are remote attendees), we anticipated this would be driven by the need to operate in a more sustainable and environmentally sensitive way, we obviously did not anticipate COVID-19.

We have worked hard to expand our Remote Attendance capability and are pleased to add the Certified Network Cable Installer (CNCI®) to our list of remote attendance programs. If you have not seen our Remote Attendance program delivery, we urge you to book onto one of our 40-minute demonstration sessions so you can see for yourself.

Read more about Remote Attendance here.

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

Crisis point

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

Amidst the devastation caused by the coronavirus pandemic, the reaction of the network infrastructure sector is worthy of recognition. In addition to making sure we can all stay connected, many industry professionals, manufacturers and distributors have offered their expertise to health services as they look after those struck down by COVID-19.

Over the last month or so I've spoken to some of those involved with getting the NHS Nightingale Hospitals up and running across England. To hear first-hand about the long hours that people have put in under immense pressure, while selflessly compromising their own safety, is incredibly humbling. This type of scenario will have been replicated across the world, so hats off to everyone that has contributed to this herculean effort.

It's also been interesting to see the different approaches and reactions by companies to the situation. Some have been quick to implement ways of communicating with their audiences via remote learning opportunities, webinars and videos. In order to assess the short-term and long-term effects of coronavirus, we've asked a panel of experts to offer their views and you can read their responses by **CLICKING HERE.**

Automated infrastructure management (AIM), intelligent infrastructure management (IIM) and data centre infrastructure management (DCIM) are three of the most well-known network management tools. Thomas Wellinger of R&M examines why he believes real value can derived from combining them into a complete, integrated smart network monitoring solution and you can read his article by **CLICKING HERE.**

The need for high quality containment in data centres has never been more important and we have two excellent articles on this subject. Jon Barker of Chatsworth Products (CPI) explains how the cabinet ecosystem approach is changing the data centre, while Karl Lycett of Rittal explains why it's vital to look beyond the norm for true cooling innovation. **CLICK HERE** to read Jon's article and for Karl's **CLICK HERE.**

With much more besides I hope you enjoy this issue of Inside_Networks. Stay safe and look after each other.

Rob Shepherd
Editor

Answers to your top fibre questions.

Get in-depth answers to eight of the most common fibre testing questions our Technical Assistance Team gets asked in this useful digital handbook.

Our team has over 150 years of combined experience and helps hundreds of customers every month with some of the toughest fibre questions.

Download your FREE copy here:

www.flukenetworks.com/request/top-fiber-questions-digital-handbook

FLUKE networks

LET'S **CONNECT!**

DUNASFERN Inc. AURIGA

LET'S **CONNECT!**

Proud to be playing our part **keeping critical services connected**

NHS

01908 282200
enquiries@dunasfern.com
www.dunasfern.com

Moving to multi-cloud and the edge tops business priority lists

Equinix has published the findings of a global survey exploring IT decision makers' insights into the biggest technology trends shaping the worldwide economy. The results of the study – which gathered responses from nearly 2,500 participants from 23 countries in the Americas, EMEA and Asia-Pacific – show companies were already preparing for a more connected world, ahead of the coronavirus pandemic.


Russell Poole

Findings revealed there are significant ambitions by businesses to embrace a multi-cloud approach, but that adoption is still at less than 20 per cent worldwide. 50 per cent of IT leaders state they are prioritising moving their infrastructure to the digital edge, as part of their organisation's overarching technology strategy.

Nearly three-quarters (71 per cent) of global respondents said they plan to move more of their IT functions to the cloud, and two-thirds of these plan on doing so within the next 12 months, despite 49 per cent of respondents still seeing perceived cybersecurity risks around cloud adoption as posing a threat to their businesses.

Cloud strategies considered include a dispersed multi-cloud approach, where a single company uses different cloud providers for different functions. This is a major trend emerging in the marketplace and corroborated by the study. 45 per cent of global IT leaders say their technology strategy includes moving to a multi-cloud approach, which will have significant implications for the industry as businesses continue to diversify their portfolio of cloud providers.

But while there is clearly a strategic shift underway, multi-cloud adoption is far from ubiquitous – 17 per cent of IT decision makers said their businesses are currently deploying across multiple clouds. Hybrid cloud deployments, whereby companies use a combination of one or more public cloud providers with a private cloud platform or IT infrastructure, are more commonplace, with 34 per cent of IT decision makers already having hybrid strategies in place.

Russell Poole, managing director UK at Equinix, commented, 'The use of cloud in the enterprise IT sector has increased significantly in recent years. As this survey shows, this upward trajectory is set to continue as companies look to increase their as-a-service offering and diversify their portfolio of cloud service providers.'

Sue Daley, associate director technology and innovation at techUK, added, 'Multi-cloud services are delivering massive business benefits to organisations through the scale and flexibility they provide. However, as this research shows, multi-cloud adoption is still less than 20 per cent worldwide. With organisations keen to embrace the opportunities of innovative technologies such as artificial intelligence (AI) and the internet of things (IoT), and as they consider their recovery strategies from the current pandemic, the cloud will provide the digital tools and infrastructure needed to make this happen.'

BCS campaign recognises the vital role of IT workers in national life

A new campaign highlights the essential role IT professionals are playing in connecting people, personally and professionally, during the coronavirus crisis. The #vITalworker campaign launched by BCS, The Chartered Institute for IT, is asking people to share and celebrate examples of IT and IT professionals working to keep essential elements of our national life functioning.


Paul Fletcher

Simply @ tag them in a social media post on LinkedIn, Twitter or Facebook and include the hashtag #vITalworker in that post. BCS will be tagging the best #vITalworker examples in postings from its accounts and giving those professionals the opportunity to claim a vital worker sticker and badge.

As part of the campaign, BCS will be running weekly webinars on everything from cybersecurity risks to mental wellbeing top tips and how to protect children and vulnerable groups from social media harm. BCS chief executive, Paul Fletcher, said, 'As the coronavirus crisis moves our personal and professional lives online, computing and digital services are more valuable to society than ever. We want to support and champion IT professionals doing vital work during these difficult times.'

Networks stand firm as coronavirus spikes demand

During the coronavirus lockdown, people are asking how well telecommunications networks are coping with increased usage and what it means for the future.

Firstly, voice calls are becoming increasingly popular. In the UK, O2 reported that average call duration jumped 40 per cent in a week, whereas in the USA AT&T experienced a 44 per cent increase. Consumers have also been switching to internet based services or landlines – AT&T reported a near 90 per cent increase in Wi-Fi calls.

Networks are steadfast because fixed line broadband traffic demand has risen during the day, whereas, volumes typically peak between 8-10pm. Mobile networks are also playing a wider role in supporting governments, with SMS updates. However, SMS infrastructure in the UK hasn't been recently updated, meaning that the high-traffic volumes are challenging.

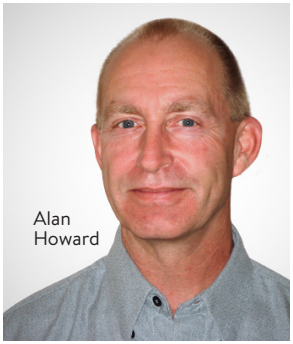

Kester Mann

Kester Mann, director consumer and connectivity at CCS Insight, said, 'In the future, the UK government should fund the mandatory implementation of a wireless emergency alerts system across all networks. This technology is used in the US to provide alerts in the case of major emergencies.'

Cloud and colocation data centre CapEx to reach $125bn by 2023

Data centre capital expenditure (CapEx) by cloud and colocation providers is expected to grow at a 9.8 per cent compound annual growth rate (CAGR) from 2019 to 2023, as service providers work to stay ahead of customer demand, according to Omdia. Worldwide CapEx is forecast to rise to $125bn in 2023, up from $82bn in 2019.

Data centre CapEx fell eight per cent in the first half of 2019 compared to the second half of 2018. However, CapEx was up eight per cent from the first half of 2018, as reported by Omdia's Cloud and Colocation Data Center Capex Market Tracker.


Alan Howard

Alan Howard, principal analyst colocation and cloud services at Omdia, said, 'Last year represented a major phase of data centre construction among the largest cloud and colocation service providers. Physical infrastructure spending in 2019 increased by 9.9 per cent over 2018 – outpacing IT infrastructure, which was up 1.7 per cent. However, the pendulum is swinging the other way in 2020, with IT infrastructure growing by 12.3 per cent and physical infrastructure rising by 8.4 per cent compared to 2019.'

Employees are losing two work weeks a year to IT downtime

Nexthink has found that IT challenges and poor digital work experiences are costing businesses in lost worktime and that the problem is much bigger than IT leaders realise. With employees saying that only just over half of workplace technology issues they experience are actually reported to IT, the IT department does not have visibility of the problems that exist in their organisations.

The Experience 2020 Report: Digital Employee Experience Today, conducted by Vanson Bourne, shows that employees are losing an average of 28 minutes every time they have an IT related problem. The report also shows that IT decision makers believe employees are experiencing approximately two IT issues per week, wasting nearly 50 hours a year.

However, as only just over half of IT issues are being reported, the numbers are more likely to be nearly double that – close to 100 hours (two work weeks) a year. This has led to a vicious cycle of employees trying to fix IT problems on their own, leading to less engagement with the IT department, which doesn't have visibility into how the technology is being consumed.

Jon Cairns, vice president of global solution consulting at Nexthink, said, 'Every day, employees settle for small IT glitches such as slow boot-up times, patchy internet connectivity and programs crashing, but these problems go unreported, unnoticed and amount to more wasted time than we'd like to admit. Combined, all of this hurts productivity, morale, organisational culture, employee retention and ultimately the top and bottom line for millions of businesses. Add in the fact that so many of us are all working remotely during the coronavirus crisis and the problem may be much bigger than the research shows.'

Reducing data centre energy costs remains a top priority

A poll from Secure IT Environments has revealed that reducing energy costs (46 per cent) and improving energy efficiency (39 per cent) are key priorities for IT professionals. It found nearly a third (29 per cent) will be focusing on relocating their data centre(s) over the remainder of 2020.

Asked about the top two challenges facing their IT infrastructures over the next two years, half (49 per cent) cited upgrading their existing data centres as the biggest challenge. Second was the pressure organisations face around regulatory compliance (37 per cent), either in terms of their specific industry or in areas of general compliance related to the IT department.

34 per cent see recruiting skilled professionals as a key challenge for the coming years. Budgets for projects can also be a problem – 37 per cent reported getting the budget they require, but 27 per cent said they need to fight for it, and 20 per cent described themselves as 'always underfunded'. Only 15 per cent felt they got budgets that allowed them to do everything they require.

Asked to comment on the emotions conjured up when they think about the state of their IT infrastructure 51 per cent reported negative emotions – worry (27 per cent), anxiety (22 per cent) and despair (two per cent). The most reported emotion was pride, at 32 per cent.

Chris Wellfair, projects director at Secure IT Environments, commented, 'Finding skilled staff to deliver transformative projects remains a challenge, even though organisations can secure the budgets needed to upgrade. Having key personnel and external partners is critical to the long-term success of any data centre project, so the time required to assemble that team needs to be factored in.'


Chris Wellfair

NEWS IN BRIEF

According Atlas VPN 43 per cent of business professionals predict US companies will get involved in a cyber incident by the end of 2020. A survey conducted among business and risk consultants reveals that cybercrime, data breaches, and IT failures are the most common threats to enterprises in the US this year.

Centiel UK has been awarded ISO 14001:2015 environmental management system accreditation by the BSI.

The Global mobile Suppliers Association (GSA) has revealed that 5G subscriptions reached at least 17.73 million globally by the end of 2019. By the end of 2024, GSA and Omdia forecast that 5G will account for 19.3 per cent of the worldwide market, with LTE still dominant at 59.4 per cent of all mobile subscriptions.

Cisco and Google Cloud are collaborating to develop the industry's first application-centric multi-cloud networking fabric.

Smart Solutions for Smart Buildings

Prepare your infrastructure for PoE, IoT, and wireless networks.

The first step to optimizing your smart building is choosing the right network infrastructure. We make it easy with service, expertise, and solutions tailored to fit your current and future needs.

Learn more at levitonemea.com/smartbuildings

LEVITON®

Don't put all of your egg

Hi Rob

Recent research from Canalys found that spending on cloud computing infrastructure services continues to grow at record speed – it went up by 37 per cent last year. The same research also found a third of spending was dedicated to one hyperscaler – Amazon Web Services (AWS) – with organisations spending $34.6bn on AWS' cloud infrastructure in 2019, up from $25.4bn the previous year. It was closely followed by Azure, Google Cloud and Alibaba Cloud.

While this is welcome news for the 'big five' – AWS, Microsoft, Alibaba, Google and IBM – and the infrastructure as a service (IaaS) industry as a whole, firms must be cautious about placing the entirety of their 'IT eggs' into the proverbial 'basket' of one hyperscaler.

The findings from Canalys are positive but it's important for businesses taking their first steps into outsourcing their IT infrastructure to consider all points, before following the crowd. Having a hosting provider that can cover all IT requirements might appear to be the simplest solution but this is not always the most advisable one, and can actually expose a business to unnecessary risks. In recent years we've seen outages occur across the big five. While the amount of downtime experienced was relatively small and localised, anything more significant could have yielded disastrous consequences for customers.

To put this example into context, if your infrastructure provider has an outage and it is also responsible for your recovery, there is a good opportunity this will be impacted as well. Your data could potentially be lost forever. For this reason, we would always advise organisations to embrace a multi-cloud approach.

It's not just security and recovery that need to be understood. Hyperscalers remain a popular choice with businesses due to their established names. However,

s in one basket

due to the sheer size of hyperscalers, it's incredibly difficult to provide all but their largest customers a level of personalised service and support that takes into account the intricate needs of every organisation. In most cases hyperscalers will direct customers to their public cloud offering, which in the first instance appears incredibly affordable. However, this quickly changes when customers face extra charges for basic cloud functions such as a virtual private network (VPN), read and write, and firewall services.

The reality is, despite their dominance, hyperscalers are too big to provide the same level of care that smaller cloud providers boast. We know security can be challenging because the platforms are complicated and difficult to manage safely without the right in-house technical skills or expertise. Additionally, if and when an outage does occur, for most businesses it is unlikely small customers are going to be at the top of their priority list when it comes to support. In the event of an incident, hyperscalers will need to get their own house in order before tending to customers, which will cost time and money.

It is therefore critical that organisations outsourcing their IT infrastructures do not ignore the value of a personalised, localised and tailored service for an alternative that seems cheaper from the offset.

Chris Burden
Memset

Editor's comment

The success of the big five, as Chris refers to them, is perhaps down to the trust that their customers place in their ability to provide a high level of service and keep their data safe. That said, there are dangers too and some companies could find that smaller cloud providers provide a personal touch that suits them better.

Balance of powe

Hi Rob

I am writing to comment on the article on lithium ion (Li-ion) storage batteries by Keith Stewart of Networks Centre in the May 20 edition of Inside_Networks, as I believe it does not give a fair comparison of the battery technologies it mentions. In the article, apart from cost, all features of Li-ion battery technology were favourably compared to valve regulated lead acid (VRLA), without the 'other side of the coin' being put forward.

One of the key arguments used was that a VRLA battery typically only lasts four years, compared to 12-15 years for Li-ion. Firstly, there is no proof that Li-ion will last 12-15 years in uninterruptible power supply (UPS) float-charge service – even Tesla only grants an eight year warranty to 80 per cent capacity. There is a huge difference between UPS duty of 99.99 per cent in float-charge, with often little more than a single minute per year of discharge in anger, and a battery in a car that will be characterised by a discharge/recharge cycle every trip.

Secondly, the service life of a VRLA battery depends primarily on the reputation, quality and design life of a chosen product. You do get only four years if you choose the cheapest VRLA, with a nominal five year design life. Unfortunately, UPS original equipment manufacturers (OEMs) are largely to blame for offering such low quality solutions as, over the past 10 years or so the market sale price of UPS has come under pressure.

The battery, which UPS OEMs just buy and resell, used to represent 40-50 per cent of the overall UPS solution price, so the temptation to cut the specification was irresistible, rather than cut their own manufacturing margins. There is no reason – nor excuse, given the 'reliability' message that all UPS OEMs try to promote – why a UPS cannot be supplied with 12-15 year design life blocks that are capable of delivering nine year service life if properly specified and maintained. However, pushing Li-ion will, if successful, provide margin recovery and take pressure off of the UPS price.

It is ironic that many UPS OEMs are now promoting Li-ion with claims for longer life in comparison to short-life VRLA that they themselves were responsible for pushing into the market!

The cost of a good quality VRLA may be 20-25 per cent higher than the low cost imports, but that is peanuts compared to an unproven leap of faith to a new technology such as Li-ion. On a historical note, we have been here before – when

er

the battery industry first released VRLA as the answer to a maiden's prayer, claiming it was 'sealed and maintenance free', it was false on both counts.

There are several applications where the attributes of Li-ion, particularly physical volume per Wh and weight, are very attractive – handheld consumer electronics, drones and cars etc. However, medium to large UPS is not one of them. Vendors push the cyclic capacity (4,000 full discharges compared to 500) but UPS batteries might only be fully discharged once per year for their entire life. For data centres the only exception might be in cabinets providing 12V or 48V DC, but they are rare indeed.

It is worth highlighting some of the other 'features' of Li-ion technology, such as:

- High environmental damage in South America caused by the lithium mining brine injection process, and only 350 years of known reserves at existing consumption levels, which will rapidly shorten by increasing all electric automobile adoption.
- The current lack of any recycling of the active lithium material, compared to the successful 100 per cent recycling of lead.
- Li-ion cells have a highly flammable gaseous electrolyte under pressure that must have a battery monitoring system to prevent overcharge and resultant fire. Note that of 300 large scale energy storage systems in the USA, four have been destroyed by self-ignition.
- The cost of Li-ion with its essential battery monitoring system is still four times that of good quality VRLA with no battery monitoring system.

Time will tell, but I would like to see better informed decisions before exporting more manufacturing capacity and valuable jobs to places where labour is cheap and scant regard is paid to health and safety and the environment.

Ian Bitterlin

Editor's comment

Li-ion has certainly captured the hearts and minds of UPS manufacturers and its positive attributes have been heavily promoted over the last few years. It's very interesting to hear an alternative take on the subject, particularly the issues surrounding Li-ion's environmental impact.

Cabling Cafe

Catch up from our library of recorded webinars

All webinars

Why AIM?

FIBREROUTE Planner Software Tutorial

Sign up

Nexans Cabling Solutions UK
2 Faraday Office Park
Faraday Road, Basingstoke RG24 8Q
Tel: 01256 486640 / ncs.uk@nexans.com
www.nexans.co.uk/LANsystems

Nexans
BRINGS ENERGY TO LIFE

Taking care of business

With coronavirus causing severe disruption across the globe, the network infrastructure sector is playing a key role in maintaining public services and keeping us all connected. Inside_Networks has assembled a panel of experts to discuss the sector's response to the pandemic so far and what its long-term impact will be

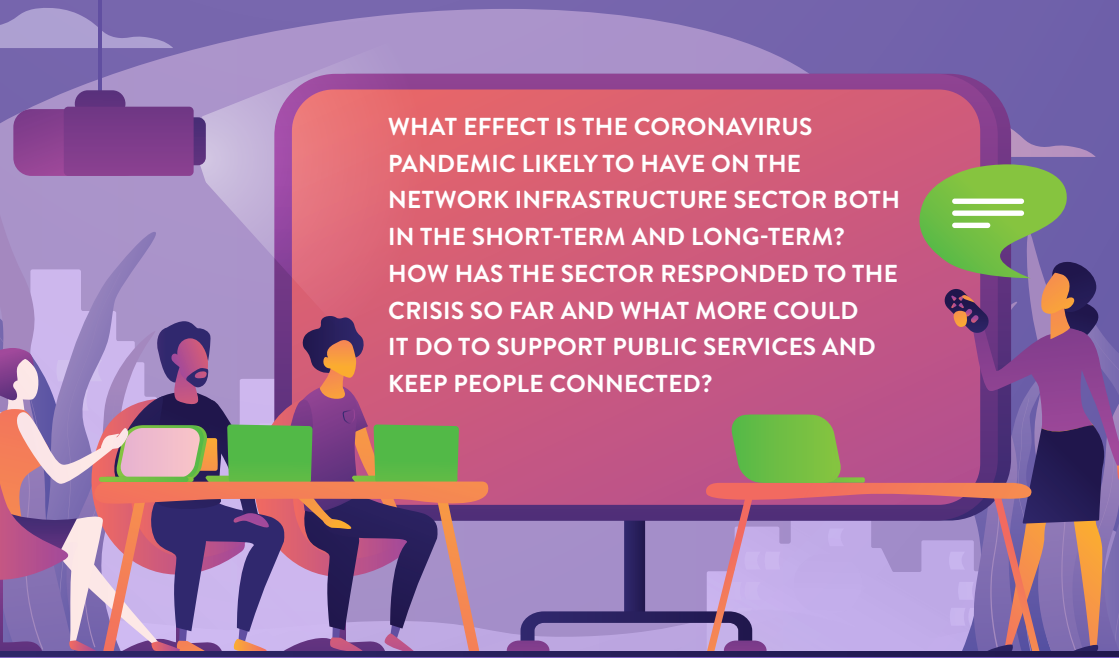
We are living through an extraordinary period in our history, and the way in which all aspects of our personal and work lives have changed in such a short time is quite remarkable. The fact is we don't really know when things are likely to return to anything resembling normality.

Enterprise and data centre network infrastructures have become more important than ever in terms of enabling people to work from home, use teleconferencing services and keep businesses trading, as well as allowing us to communicate with our loved ones.

Although not all companies in the sector have reacted in the same way to the crisis, many have been impressively quick to configure new and innovative ways to ensure that their products and services get to those who need them most.

To take stock of the situation so far, Inside_Networks has assembled a panel of experts to examine the impact the coronavirus pandemic is having on the network infrastructure sector and its possible long-term repercussions.

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 AT TECHUK

The coronavirus pandemic has obvious implications for business continuity across the entire economy. Data centres, by consolidating the IT functions of organisations from government through to small to medium sized enterprises (SMEs), are a critical part of their customers' operational resilience, so the sector is in the spotlight right now. UK government is therefore taking a close interest – there is a new dedicated team and data infrastructure was added to the key workers list in March.

In principle our sector is well positioned to deal with these new challenges – identifying potential risks and managing them is what data centres do, and operators are aided by physical characteristics like security, relatively low footfall and high levels of automation. True to form, operators reacted quickly to limit routes for infection and protect employees, whilst ensuring that facilities remain adequately staffed. Operators were implementing precautionary measures like shift segregation, reduced customer footfall, visitor screening, new cleaning protocols and detailed decontamination routines long before formal requirements were in place. Operators are also managing ongoing risks such as supply chain shortages, staff absence and deferred maintenance.

The short-term challenge extends beyond business as usual. Operators must also handle major changes in customer demand. The level of digital communications, especially online conferencing, has risen dramatically. Record traffic is passing through Europe's largest internet exchanges, schools are delivering lessons through remote learning tools and online shopping and delivery services are at capacity. Meanwhile, those self-isolating are using social media to stay connected to friends and family, and government updates and announcements are arriving by internet, broadcast, telephone and social media.

Longer-term is tricky to predict. Organisations that have temporarily moved activity to online platforms for remote working may choose to retain some of that functionality. Therefore, demand may not drop back down, and a 'new normal' may emerge. On the other hand, a recession may reduce capacity required by some traditional enterprise customers. Overall though, and taking into account the number of construction projects currently underway, the demand trajectory seems to be relentlessly upward. So both short-term and long-term, business as usual within digital services is not about maintaining the status quo but about accommodating ever-changing requirements.

'OUR SECTOR IS WELL POSITIONED TO DEAL WITH ANY NEW CHALLENGES – IDENTIFYING POTENTIAL RISKS AND MANAGING THEM IS WHAT DATA CENTRES DO, AND OPERATORS ARE AIDED BY PHYSICAL CHARACTERISTICS LIKE SECURITY, RELATIVELY LOW FOOTFALL AND HIGH LEVELS OF AUTOMATION.'

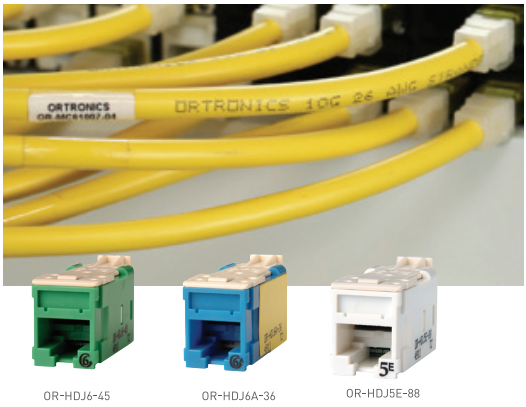
ORTRONICS®

CLARITY® HIGH DENSITY COPPER SOLUTION

THE NEW HIGH-DENSITY CLARITY® JACK AND PANEL PRODUCTS SOLVE DENSITY CHALLENGES WITHOUT SACRIFICING PERFORMANCE.

The smaller HDJ jack footprint allows up to 48 ports of premium Category 6a, 6 or 5e performance in 1 rack unit panel. This system is ideal for applications like data centres, distribution areas (TIA-942 Standard) or limited space, high density environments.

Ortronics® HDJ patented, recessed angled modular patch panels combine with Ortronics vertical cable managers to provide up to quadruple the density as standard panels with horizontal cable managers.



OR-HDJ6-45 OR-HDJ6A-36 OR-HDJ5E-88

THE NEW HIGH-DENSITY JACK AND PANEL SERIES PROVIDES:

- Less required rack and floor space to reduce real-estate costs
- A nearly transparent signal path, when used with Clarity patch cords, for enhanced network performance
- New cable termination process that is easier and faster for Category 6a and 6
- A new slide-lock mounting for a quicker installation time that reduces labour costs, while locking the jacks firmly in place
- Flexibility by combining copper and fibre in the same panel

legrand®

E: ortronics@legrand.co.uk | W: legrand.us/ortronics/high-density-copper

BRUNO FILIO

VICE PRESIDENT OF INTERNATIONAL BUSINESS DEVELOPMENT AT LEVITON

We all face an incredibly challenging time due to the spread of coronavirus, and data networks are playing an important role in keeping people connected. Network infrastructure is considered an essential business, as communication systems are a critical part of buildouts for hospitals, medical test sites and government facilities. At the same time, data centres are scrambling to handle evolving demands, as they adapt to jumps in online purchasing and support those businesses and schools which have shifted to virtual meetings to facilitate remote work and education.

Network cabling specification and technical experts are more important than ever. They provide guidance on everything from the right healthcare infrastructure to connect caregivers, researchers and patients, to helping university IT departments in updating their systems to support teachers with the audio and video capabilities they require.

As a result, many network cabling and connectivity manufacturers are currently operating at regular or limited capacity. At Leviton, we continue to monitor the situation closely, considering information from international health agencies, local governments and our own safety and security protocols. Our factories have implemented precautionary measures to minimise exposure to coronavirus including temperature scanning and the use of personal protective equipment.

One important way to keep people connected is through online training courses as a replacement for in-person training. For example, BICSI has made many of its online courses available at no cost and transitioned some traditional classroom training to virtual classes. Many of these courses will help network installers integrators obtain continuing education credits (CECs) for their certification renewal. Similarly, Leviton and other manufacturers are stepping up with webinars and online training courses – many of which also provide ongoing education credits and bring IT managers up to speed on the latest networking trends.

'NETWORK INFRASTRUCTURE IS CONSIDERED AN ESSENTIAL BUSINESS, AS COMMUNICATION SYSTEMS ARE A CRITICAL PART OF BUILDOUTS FOR HOSPITALS, MEDICAL TEST SITES AND GOVERNMENT FACILITIES.'

CARRIE GOETZ

PRINCIPAL AND CHIEF TECHNOLOGY OFFICER AT STRATEGITCOM

During this crisis, network infrastructures have been stretched incredibly thin. Working from home, learning from home, studying from home, reporting needs, healthcare needs and streaming have crippled many networks.

Rural areas and those outside of main network services have left their inhabitants out of the local loop (pun intended) for many required services. However, there was simply no way to predict the onslaught of demand in an instantaneous fashion, with no gradual increase in capabilities from which to benefit. Models for shared bandwidth simply proved to be woefully oversubscribed and all eyes are on billed speed versus realised throughput.

5G is simply not a reality in many places, and there is a worry about the power that will be consumed at the edge and 5G centres. I would expect this to increase as the predicted usage is likely to be surpassed immediately at turn-up. I believe that there will be an influx of fibre to the premise projects springing up as an alternative to wireless, which proved to be incapable of handling recent demands, with backhaul circuits for wireless beefed up as well.

Without a doubt some people will continue to work from home, at least partially, after this is over. Remote learning is opening up new avenues for education that will continue to evolve.

They key moving forward will be elasticity and the rapid reconfigurations provided by software defined services. Application aware circuits that can be optimised, based on the type of traffic and bandwidth, will see a certain uptick. Brokers will be in high demand by the networking sector, as they can provide a shortcut menu of solutions to companies assuring productivity, security, circuits and cloud productivity options over those circuits. Regardless of the network transport chosen, services must be reliable, secure and easy for an end user to consume.

The network infrastructure sector is going to spend some time closing holes that were opened so that people could work. Then it will be time to roll up sleeves and plan for the lessons learned and the new portability of people and workloads.

‘THE NETWORK INFRASTRUCTURE SECTOR IS GOING TO SPEND SOME TIME CLOSING HOLES THAT WERE OPENED SO THAT PEOPLE COULD WORK. THEN IT WILL BE TIME TO ROLL UP SLEEVES AND PLAN FOR THE LESSONS LEARNED AND THE NEW PORTABILITY OF PEOPLE AND WORKLOADS.’

ANDY HIRST

MANAGING DIRECTOR CRITICAL INFRASTRUCTURES AT SUDLOWS

My first thoughts following the decision to lockdown was that it would have a major short-term detrimental effect and add significant strain to the telecommunications infrastructure. This was partly due to some aged and inadequate systems, but also due to the sudden rise in use of high bandwidth IT technology platforms such as Teams and Zoom.

However, several weeks into the lockdown it is clear that the UK's network infrastructure has been more resilient than first thought. All meetings that were required have still taken place and all tender responses, presentations and meetings have been successfully completed, albeit via the various virtual conference platforms that are available.

As one of the organisations supporting the core national infrastructure, Sudlows has continued to help critical public services, such as the NHS. It has clearly been challenging, as although we can supply experienced engineers, we have still had the pain of sourcing materials and parts, along with other basic requirements that are usually just taken for granted, such as hotels for engineers. That said, it has all been achievable and is a small price to pay for supporting the frontline healthcare staff and associated carers that have been at the forefront of this pandemic.

Even though, at present, the IT infrastructure is certainly holding up well, this may well be simply due to outstanding engineering support and the determined efforts of data centre and network managers to do whatever they can to maintain uptime. What has been made very clear by this crisis, is that more resilience is definitely required and that these kinds of unthinkable situations can and will happen in the future. Therefore, the need to upskill more engineers and make sure that all essential facilities have detailed and rigorous gap analyses will no doubt become hot topics within key organisations and public bodies.

It has also become quite clear that we can actually cope with a reduced service of certain modes of transport such as air travel, but what would have been the wider impact if the global telecommunications network was compromised? That would have compounded this major catastrophe far above and beyond what we are experiencing now.

'EVEN THOUGH, AT PRESENT, THE IT INFRASTRUCTURE IS CERTAINLY HOLDING UP WELL, THIS MAY WELL BE SIMPLY DUE TO OUTSTANDING ENGINEERING SUPPORT AND THE DETERMINED EFFORTS OF DATA CENTRE AND NETWORK MANAGERS TO DO WHATEVER THEY CAN TO MAINTAIN UPTIME.'

gabocom

HellermannTyton

The full FTTH solution from HellermannTyton and gabocom

The Perfect Partnership

Together, HellermannTyton and gabocom deliver a full end to end FTTX solution, combining strong industry knowledge and a wide choice of quality products... A winning combination.

Visit us online at htdata.co.uk and gabocom.co.uk

IN-AD-FTTH-HT-GABO-R10

Stay in touch with us!

Netscale Solutions

Delivering the highest fibre density

R&M's Netscale solutions combine unmatched fibre cable management with automated connectivity tracking and an innovative tray design to deliver the world's highest port density for 10/40/100G Ethernet.

For more information and further details about the highest 10/40/100GbE density of any fiber solution out there, visit **www.rdm.com**

Reichle & De-Massari UK Ltd
+44 (0) 203 693 7595

R&M

MARTYN LEWIS

GENERAL MANAGER AT DUNASFERN INC AURIGA

Although we are still well-placed ourselves, I am starting to see some squeezes in availability across our sector. Despite this and other challenges, there's been a real industry-wide appetite to mobilise quickly and support the critical services on which we all depend – particularly the new NHS Nightingale hospitals.

To achieve this whilst maintaining the safety of our teams should make us very proud of the industry we are all a part of. Dunasfern has designated an NHS Nightingale support manager to help liaise with the various parties involved and to co-ordinate our support. This has allowed us to be much more proactive in responding to the needs of these unique projects.

We have seen over the past several weeks just how critical that manufacturer/distributor relationship is and I would expect to see a big focus on those well-established relationships that have served us all so well in the past. The manufacturers that we work closest with have been fantastically supportive and, as a result, we are doubly as committed to them now as we were. As the cashflow of many businesses has been stretched significantly, financial stability and ability to pay on time will be central to a lot of key commercial decisions going forward.

We have already seen an increased desire to buy British where possible. While we have some wonderful overseas partners, I expect a significant growth in demand for our wide range of British manufactured products, particularly when it comes to public funded projects. At the very least, the expectation will be for distributors to have a strong British option in their portfolio.

Changing working patterns during this crisis have seen unprecedented numbers of people working from their homes. While many will be anxious to return to the workplaces, I expect to see greater numbers than ever staying at home, now that they have seen that it is possible. This will create many new opportunities, as the advantages of installing structured cabling into housing developments becomes more apparent.

Whatever their situations, our colleagues have really dug deep throughout this crisis and deserve every thanks.

> 'THE MANUFACTURERS THAT WE WORK CLOSEST WITH HAVE BEEN FANTASTICALLY SUPPORTIVE AND, AS A RESULT, WE ARE DOUBLY AS COMMITTED TO THEM NOW AS WE WERE.'

MARK BIRD
TECHNICAL DIRECTOR AT LYNX NETWORKS

The network infrastructure sector does not have immunity to the coronavirus pandemic, despite what appears to be the world's greatest ever reliance on IT systems.

As many businesses prepared to work from home, we saw an increase in sales of software licenses, hardware upgrades and laptops. While this activity was boosting sales figures in March, there was a worrying trend in the delay of capital infrastructure spending. As we moved towards April and the crisis really took hold, it was clear this trend was now across the board, despite the government confirming that IT was an essential service industry. The key issues for businesses were to preserve cash and reduce occupation of business premises.

Some organisations are taking the opportunity to get disruptive infrastructure works completed while premises are quiet, although the cost of health and safety of on-site staff has increased, and the sliding value of sterling has also squeezed profit margins further.

The world has been forced into a massive home working experiment and a number of businesses may now, having felt the benefits, choose to reduce office space and have a more mobile workforce. To support this, it is likely that cloud and hybrid services will experience a push. We will also see a permanent increase in video conferencing for collaborative teams. The phrase 'work is not somewhere I go, but something I do' sums it up, with people enjoying a more flexible working environment enabled by IT infrastructure.

Moving forward, many businesses will be in financial recovery, whilst striving for more efficiency. For bigger businesses, technology could be used as an efficiency enabler, driving more distributed workforces and better availability. However, for SMEs, IT is often seen as a pure cost, not an investment, and spending is likely to be cutback. Those IT providers that adapt to the change in environment and have offerings that match the new working norm should thrive as we come out of lockdown.

'THE WORLD HAS BEEN FORCED INTO A MASSIVE HOME WORKING EXPERIMENT AND A NUMBER OF BUSINESSES MAY NOW, HAVING FELT THE BENEFITS, CHOOSE TO REDUCE OFFICE SPACE AND HAVE A MORE MOBILE WORKFORCE.'

LEADING FIBRE OPTIC CABLE TECHNOLOGY

Draka UC Fibre Cable integrates our entire technology stream from optical fibre core manufacture to finished cable designs that are perfected for any application.

This includes

- Easy to install high-performing cables for all CPR fire ratings in designs that are flexible, slim and robust whilst also protecting the fibre inside
- Leading edge fibre technology in any cable design your network requires, i.e. BendBright® bend-insensitive multimode and single mode fibre in every cable
- Sirocco®Blown Fibre technology now an integral part of UC-Connect warranted installations
- Our Flextube technology enables high-density cable installations and is ideal for pre-terminated cabling

Keeps What It Promises!

draka.mms@prysmiangroup.com

Draka

A brand of the Prysmian Group

Our Partners

CommsCentre. COMTEC DUNASFERN Inc. AURIGA PRECISION CABLES

Scratching the su

Karl Lycett of Rittal explains why it's vital to look beyond the norm for true cooling innovation

To an outsider, the term IT conjures up images of cavernous futuristic facilities, a myriad of twinkling LEDs, and technologies at the 'bleeding edge' that are implemented at a blistering pace in response to the demands of our connected life. Don't get me wrong, there are facilities like this but most installations are operating on technology that has been in place for years – and this is not always effective.

THE LEGACY

From a climate control perspective, computer room air conditioning (CRAC) units are the mainstay of white space, supplying the cavity below a raised floor with cold air, which is then directed up to equipment via perforated floor tiles in front of racks. There are some possible downsides to CRACs though.

You must have the right location and employ a professional installer to fit the raised floor. Many small and medium sized businesses don't have the funds, space or management backing to make large office moves or extensions a reality. A CRAC unit requires planning and pre-work to be a success and with businesses becoming increasingly dependent on agile solutions to meet their ever-changing needs, CRACs don't fit the bill.

As the air is delivered from below the floor, it rises and increases in temperature. Equipment placed in the highest Us of a rack receives the air, which can be degrees warmer than that situated lower down. The discrepancy between required and actual air temperatures can be detrimental to the performance, lifespan and reliability of the equipment. In some cases, the distance of the CRAC to the equipment results in a delay in response to any increase in heat load. This delay, however slight, means that equipment will be exposed to higher temperatures, degrading the overall life or performance of the equipment, and reducing installation efficiency.

Clearly, most businesses can't know for certain how fast their IT installations need to grow to keep pace with change. A large project, or influx of new staff, may mean new racks have to be installed, thus increasing the heat load. If a business hasn't budgeted for new cooling

urface

equipment, then problems may quickly arise.

A CRAC unit has a maximum cooling capacity. If that is exceeded, there are two options:

- Remove the existing unit and replace with a larger and more expensive alternative.
- Supplement the existing unit by buying another smaller CRAC to support it.

Both options have downsides. Replacing a unit that has, for example, only been in place for a short time is likely to be an unpopular – if not a financially unviable – option, while supplementing the unit with something smaller is possible but will take up significant space. Ultimately, CRACs may be an option for some businesses, but for those wanting to take their install to the next level, there are other (better) alternatives.

THE PRESENT

In-row and in-rack cooling solutions have a lot in common but what sets them apart is how they deliver the air to equipment.

In-row requires racks to have perforated doors and should be used in conjunction with aisle containment to prevent hot and cold mixing. Cold air is pushed directly out of the front of a cooler into the cold aisle and then passed across IT equipment. By contrast, in-rack requires the use of glazed doors and doesn't require aisle containment. Instead it creates a mini-cold aisle by supplying cooled air sideways, directly in front of any equipment.

Using in-row to cool an aisle means that if one cooler was to break down then the other, within what is a shared aisle, could increase output to support. Meanwhile, for businesses with only limited space,

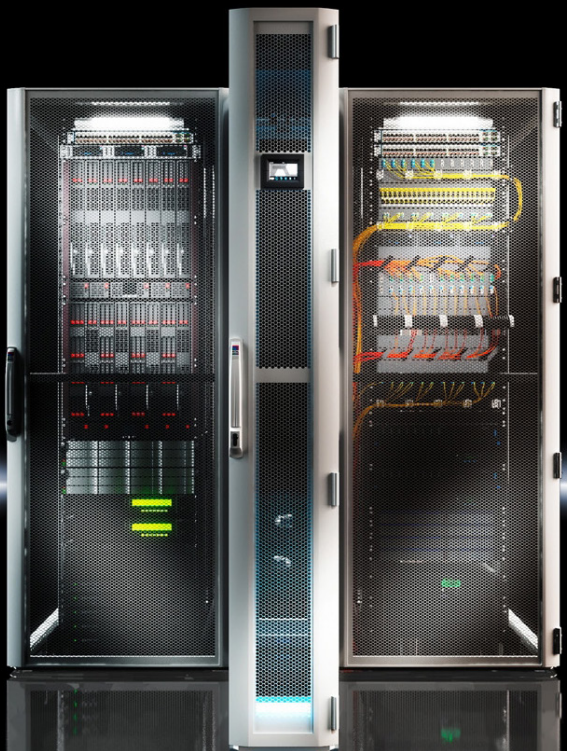
or where the equipment is placed within the office, a glazed in-rack option is all-enclosed, quieter solution. There is also no requirement for a raised floor, so general office space could be converted over just a few days. If the heat load increases, output can also be increased rapidly by inserting more fan units into the front of the cooler. Added to which, with cooling capacities of 53kW in a unit that occupies just 0.36m^2, it's highly scalable.

The use of rear door coolers means replacing the existing rear door of a rack and installing a replacement that houses a large air to water heat exchanger. Ambient air in the room is drawn through rack equipment using internal fans and hot air is exhausted and passed over the rear door cooler. Chilled water running through the rear door removes heat from the air and it passes back into the room for reuse at the set temperature. This solution is particularly suited to lower cooling requirements (<20kW per rack) and if you already have a chilled water supply on-site that it can be connected to.

THE FUTURE

It may also be worth investigating more cutting edge solutions.

On-chip cooling directs cooling inside servers to small heat sinks, which are attached to chips and other important hardware within. This method has been around for some time, using air as the medium for removing heat, however, as processing power continues to climb and miniaturisation is still the focus, the amount of heat generated is increasing. Liquid on-chip increases the efficacy of this method and continues to push the limits of cooling within increasingly smaller



'Businesses are moving away from the traditional white space and placing IT equipment closer to its sour which means the demands placed on cooling systems a also changing.'

footprints.

Full immersion cooling takes things to the next level. Instead of passing liquid by the heatsink to wick away excess heat, a whole server is placed into a reservoir of thermally conductive dielectric coolant, which comes into to contact with the equipment from all angles, allowing maximum removal of waste heat. It's a method which is becoming increasingly popular with data centres that wish to enhance their green credentials and combining this with other methods of cooling is a big positive, as full immersion can operate at higher water temperatures than other techniques. Even after all the cooling has been performed, users can use the gathered waste heat to warm offices, raising the efficiency levels up further!

EVOLVING SPACES

The rise of automation, Industry 4.0, and the industrial internet of things (IIoT) means that, whether a facility produces tins of baked beans or jet aircraft, the amount of data that can now be generated is exponential. Businesses are moving away from the traditional white space and placing IT equipment closer to its source, which means the demands placed on cooling systems are also changing.

Robust design, improved IP ratings and increased functionality into building management systems are part of the new reality. However, nothing will function if your computing equipment doesn't run smoothly. That expensive new robot arm will become, instead, a very expensive sculpture!

MAKE THE BREAK

The reality is that, despite the newer and potentially better options, CRAC units will be around for some time. Legacy equipment will continue to be replaced and businesses will simply perform like-for-like swaps on their old raised floor installs. However, I implore you to look beyond the familiar and embrace the new – you won't regret it! ■

KARL LYCETT

Karl Lycett began his career as a mechanical design engineer before moving into product management while working for Eaton. He joined Rittal as climate control product manager in 2017 and focuses on both the industrial and IT markets. His main focus is to support the UK customer base by providing expert advice and sales support.

EFS

F-Range by EFS is the perfect solution for all needs relating to the management and containment of IT infrastructure.

Designed and manufactured in the UK, the range offers a wide variety of rack configurations to cover all critical applications, be it colocation, high density or edge computing. F-Range is complemented by an extensive range of accessories, which further enables ease of installation and flexibility whilst working with server and IT equipment in a rack.

New to the EFS range are the Co-Location racks, which are available in 2, 3 and 4 bay variants. Built with individual compartment locks and two-way secure trunking to each bay, the Co-Location offers complete individual security for any environment. This, in turn, optimises flexibility and revenue for U space and per square metre costs in today's market.

CLICK HERE to find out more about the F-Range from EFS, or to contact the EFS sales team **CLICK HERE.**

www.e-fs.co.uk

Rittal

As increasing demands are placed on IT systems, there is a pressing need to upgrade existing infrastructure, and for installations to be carried out in the shortest possible time to allow businesses to remain competitive.

Rittal has created RittalXpress, which offers the rapid distribution of a specially selected range of its most popular TS IT racks and accessories. RittalXpress facilitates fast, flexible IT infrastructure upgrades – making it as easy as ABC.

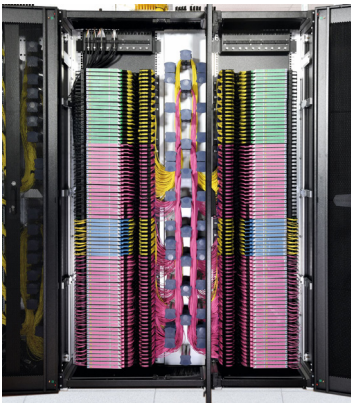
- A: Choose your rack
- B: Choose your accessories
- C: Choose your delivery

Rittal's TS IT data centre range gives IT users unrivalled structure and support through flexible design and a wide array of accessories. TS IT racks offer an efficient internal space, variable widths and depths, as well as baying versatility. Standard parts allow users to configure solutions that are tailored to individual data centres and enable efficient cabling and thermal management.

For further information **CLICK HERE.**

www.rittal.co.uk

Huber+Suhner



LISA Double Access from Huber+Suhner is a high-density, modular cross-connect optical fibre management solution, with a clear demarcation point between incoming and outgoing connectivity. Aimed for use in meet me rooms, the solution has been designed for customers who demand quick, simple and reliable moves, adds and changes, while delivering an attractive cost benefit.

In addition to the traditional LISA benefits, the Double Access design physically separates incoming and outgoing connections, and uses a centralised overlength management area to provide an accessible visual overview of the connectivity.

Operators appreciate the simple and effective cable handling solution, where each port within the rack can be reached with a 3.5m patch cord, further simplifying day-to-day operations. Using a 1500mm rack reduces floorspace requirements by 17 per cent compared to the conventional LISA set-up with equivalent port density, and 3,600 fibres can be accommodated using LC connectivity.

For more information call 01869 364100 or **CLICK HERE.**
www.hubersuhner.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 offering 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 to offer customers a flexible service that is proven to reduce installation cost and time whilst providing a fully tested, fully traceable, 100 per cent inspected product.

To find out more **CLICK HERE.**

www.excel-networking.com

EDP Europe

Aisle containment, as part of an airflow and thermal management strategy, improves cooling optimisation and thermal performance, and delivers potential energy efficiency gains at computer room air conditioning (CRAC) unit level.

EDP Europe's hot and cold aisle containment solutions are fully flexible, customisable and cost effective, and can be utilised in new build data centre projects or retrofitted within existing/legacy environments. Bespoke design capability enables EDP Europe to deliver a solution that is tailored to a customer's requirements and is independent of cabinet manufacturer. It can be designed to fit any configuration of rack heights and widths, aisles with varying widths, obstructions, or aisles that are offset or have empty rack positions.

EDP Europe's containment offering includes metal, Perspex or polycarbonate infill panels; PVC curtains; fixed, passive and active drop away roof systems including FM Global approved roof panels; and double or single clear path soft closing sliding doors.

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

www.edpeurope.com

Boxing clever

Jon Barker of Chatsworth Products (CPI) explains how the cabinet ecosystem approach is changing the data centre

As the data held within data centres increases year on year, both in quantity and value, facilities are continually seeking new technologies and techniques to make them more efficient, resilient and secure. Such increasing demands have naturally resulted in a rise in rack power density. Cabinets now draw on average up to 15kW of power – five times the amount an average cabinet drew a few years ago.

RIGHT THINKING

As data centres support more demanding and sophisticated technologies, the continual need for an increase in equipment density per rack, and the associated cooling requirements, also continues to rise. Data centre managers now recognise the significant role the cabinet can play in achieving their goals and how it is the starting point for an energy efficient strategy that is the key to 24/7 resilience, as well as a central part of the security protocol of the data centre.

A cabinet ecosystem solution is a perfect ally to help control the different dynamics related to airflow management. Additionally, cooling a data centre can demand vast amounts of power, which combined with the power required to run the IT equipment, makes costs spiral. Cooling issues can also place limits on the capacity of the data centre.

KEEPING IT COOL

The first step to reducing cooling costs and increasing energy efficiency is the introduction of an effective containment or airflow management strategy. This is critical in allowing the data centre cabinet to support high-density equipment.

Airflow must be well controlled and hot/cold aisle containment should be in place to enable critical equipment to be protected from environmental extremes.

The separation of hot and cold air within a server room will maximise cooling system efficiency and reduce the energy consumed by the cooling systems by increasing 'free cooling' hours – the time that the cooling units are run using the outside temperature of air or water.

THREE OF A KIND

Cooling and airflow management in the cabinet ecosystem must be optimised. To

do this, it is worth considering three key points when selecting airflow management accessories and cabinet features:

• The first is door perforation and internal airflow management. It is advisable to select a cabinet with door perforation of at least 78 per cent for maximum front to rear airflow.

• The second regards the specification of thermal management accessories that optimise airflow. These include baffles that seal the space between the equipment mounting rails and the top, bottom and sides of equipment to block airflow around equipment and blanking panels to seal and open (unused) rackmount spaces in between equipment.

• The third consideration takes airflow containment a step further. Whether it's through vertical exhaust ducts, hot aisle containment (HAC), or cold aisle containment (CAC), isolating hot from cold air within the cabinet or room provides huge savings in cooling costs.

UP AND DOWN

The simplest method of airflow containment is through vertical exhaust ducts, which are placed above the cabinets to direct hot exhaust air from the servers out to a plenum above the drop ceiling. The air goes into the computer room air handler (CRAH) or outside vents and is recycled back as cooled air.

To maintain energy efficiency levels, it is also important to monitor both cooling and power and measure environmental variables. The appropriate temperature levels within the white space need to be carefully maintained as they have a strong correlation to the overall energy consumption within a data centre. Hardware failure caused by extreme temperature or humidity levels within the cabinet is one of the most common causes of downtime. A sensible precaution is to

‘Data centre managers now recognise the significant role the cabinet can play in achieving their goals and how it is the starting point for an energy efficient strategy that is the key to 24/7 resilience.’

place temperature and humidity probes near the top front and rear of each cabinet.

Incorporating cooling monitoring into any service level agreement (SLA) is another sensible step, as well as tracking inlet temperature against the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) guidelines and evolving equipment specifications. The overall energy efficiency of the data centre will also be affected by other considerations such as the cabinet structure and cable management. Selecting a certain size of cabinet will not only affect the cabinet footprint but also the effectiveness of airflow management.

POWER RANGER

The cabinet should include specific and physically separate pathways for power and network cables, as well as mounting locations for power distribution units (PDUs) that minimise interference with airflow. EN 50600 requires deeper and wider cabinets for proper cabling and airflow.

A well-designed PDU should have features such as branch and outlet monitoring and switching, and be operational at a high ambient temperature. Efficient power management will boost operational efficiency by managing and monitoring power at the rack and device level. In addition, to simplify management of all cabinets at a single site or multiple edge sites, it is important to consider an easy to use, centralised data centre infrastructure management (DCIM) solution. This will provide the ability to visualise trends of all monitored parameters within both the room and the cabinet via a single screen.

Such a solution should be able to map out all cabinets and, in a snapshot, provide equipment health information covering power and environmental considerations, as well as any cabinet access attempt through the lock and door status. It should also provide

a timestamped filterable event and data log for audit, regulatory compliance such as the latest General Data Protection Regulation (GDPR) and troubleshooting purposes. It can also be used to make bulk configuration changes, and push firmware upgrades to all integrated devices across sites.

SAFE AND SECURE

Another benefit of the cabinet ecosystem is its ability to provide a much higher level of physical security than open frame racks, and therefore a much safer environment for hosting sensitive or valuable data. There are now a variety of cabinet locking systems available to protect against unauthorised entry. These electronic locking solutions are compatible with most employee cards and allow IT to easily track, authorise and manage who should access each cabinet.

The recent trend toward edge computing is resulting in more equipment being colocated or placed in remote sites and requires a more holistic approach to simplify monitoring and management. Considering the cabinet as the foundation of a complete ecosystem from which to address infrastructure, hardware and software as one single cohesive, integrated system allows for operations to be better managed, better monitored and protected. Such an approach provides the ability to set and manage energy efficiency objectives whilst ensuring compliance with all the necessary performance standards.

THE KEY TO SUCCESS

Ultimately, the cabinet could hold the key to simultaneously optimising and simplifying the processes involved in managing data centres, no matter how big or small, or where they are located. ■

JON BARKER

Jon Barker is CPI's technical manager for Europe. He has over 25 years of experience in the engineering industry, with 12 years specialising in data centre infrastructure. 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.

Centiel strengthens its team as UK expansion continues

Centiel has further strengthened its team, as the company continues to expand in the UK. Aaron Oddy has been appointed as a sales engineer, with responsibility for generating hardware sales enquiries, as well as on-site surveys and the management of key accounts.

Prior to joining Centiel, Oddy worked for Harland Simon UPS as industrial sector manager for four years, where he developed skills and experience in technical sales. He was responsible for providing key account management and sales support to clients delivering large scale industrial projects.

Oddy commented, 'Centiel occupies a unique position in the market. It's modular UPS solutions stand out for their Swiss-built quality and maximum levels of availability, and the team is focused on providing trusted advice to clients to ensure critical loads are protected optimally. I'm looking forward to providing recommendations and solutions that match the needs of Centiel's clients across the UK.'

New Benelux regional sales manager for Excel Networking Solutions

Excel Networking Solutions has appointed Mitch Verbeeck as an international regional sales manager to focus on maximising opportunities and growing the company's business across Belgium, the Netherlands and Luxembourg.

Verbeeck has 12 years of technical sales experience, having graduated as an electrician. His knowledge of the industry and understanding of Excel's product portfolio will be critical to his success with the business and Nadeen Tisi, Excel's international sales director, stated, 'I am delighted to welcome Mitch to the team. He joins Excel during an exceptionally challenging time for the global industry. We are therefore adapting Mitch's induction plan to make full use of the digital tools and infrastructure set in place by our IT team.'

Verbeeck commented, 'I am very excited to get started in this role! I truly believe in partnerships between companies and people, and I'm looking forward to meeting with my colleagues and customers in person to support their individual project requirements.'

Dataracks appoints Justin Bewick to implement sustainable sales model

Dataracks has appointed Justin Bewick as director. Responsible for developing a new sustainable sales model, his role will include reviewing existing channel partners and developing new value add partnerships to further enhance the company's product portfolio.


Justin Bewick

Commenting on his new position, Bewick said, 'Whilst reviewing our existing channel relationships, my remit is to build a progressive sales model that enables us to maintain our growth and marketing positioning within the data centre market. By reviewing and refining existing reporting procedures and linking sales directly into our manufacturing processes, my intention is to deliver operational efficiencies and increased productivity.'

On welcoming Bewick to the company, Jeremy Hartley, founder and manging director of Dataracks, commented, 'With over 15 years' senior level experience in the industry, Justin brings with him a real understanding of customers' needs and perspectives, as well as a full appreciation of the operational challenges of designing and implementing network infrastructures. The outputs we have asked Justin to deliver will bring significant change to the company, and we're looking forward to embracing and implementing his recommendations.'

CHANNEL UPDATE IN BRIEF

Mobotix has signed a distribution agreement with Norbain SD.

Citrix has appointed Darren Fields to the position of vice president networking EMEA.

Mayflex has appointed Matthew Farthing as account manager for the Midlands and surrounding areas, with a specific focus on the company's security product portfolio.

One Distribution and RangeForce have announced a partnership to broaden availability of the RangeForce platform in the UK and Ireland.

eacs has announced a new strategic alliance with Memset, which will allow both companies to further their delivery of leading multi-cloud solutions and data security services across a range of sectors.

Following a European distribution agreement with Versa Networks, Nuvias is launching the rollout of the Versa Secure SD-WAN cloud service for small and medium enterprises.

Exertis Hammer and Tripp Lite have extended their distribution agreement to service resellers in Germany and the Nordics.

Quick clicks

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

CNet Training has adapted the Certified Network Cable Installer (CNCI) program into a blended learning option, which allows individuals to work towards the certification from home.
To find out more **CLICK HERE.**

Data Centers on a High is a blog from Thomas Wellinger of **R&M.** **CLICK HERE** to read it.

Siemon has produced a new interactive guide to help owners and operators solve today's data centre challenges.
CLICK HERE to download a copy.

Fluke Networks' Fiber Best Practices Pocket Guide has now been configured for use on smartphones.
CLICK HERE to download a copy.

Cabling for the Next Wave of Enterprise Wireless is a blog from Yuna Shin of **Leviton.**
CLICK HERE to read it.

In her latest podcast Carrie Goetz of **StrategITcom** interviews Amanda Trumble of ABB about her career and current activities.
CLICK HERE to hear it.

A Closer Look at Cybersecurity and LANs is a blog by Jan Middeldorf of **Nexans.**
CLICK HERE to read it.

Trend setting

Thomas Wellinger of R&M examines the key drivers for smart network monitoring

Traditionally, automated infrastructure management (AIM), intelligent infrastructure management (IIM) and data centre infrastructure management (DCIM) have been treated as distinct entities. However, it could be argued that real value is derived from combining these solutions into a complete, integrated smart network monitoring solution made up of three stacks – conventional panels and cabling, an internet of things (IoT) layer on top on it, and finally a DCIM app to manage and monitor all the acquired data. At present, we see three closely related trends changing the face of infrastructure management in data centres. What are these developments, how are they related and what could they mean for network monitoring and management?

ON THE EDGE

The first main trend is the growing importance of edge computing and edge data centres. Data transmission and processing requirements are driving the rollout of infrastructures that extend and support centralised structures with computing power at the network edge. To improve performance and user experience, popular content and applications are cached closer to less densely networked markets, for example. This is introducing a paradigm shift in the way networks are designed, provided and monitored.

Edge is a key driver for a second trend – high density. Today's networks need more capacity and space to prepare for the future. High density enables this and allows users to start off with a single rack unit, growing as required. High density – 72, 90 or more ports per rack unit – helps the backbone support several consecutive generations of hardware and bandwidth standards as data hungry technology solutions expand rapidly. Fibres are brought directly from server ports to an ultra-high density platform, which can accommodate up to 50 per cent more fibre optic connections in a traditional housing.

However, high density and growing network complexity introduce risks, such as unmanageable cabling, which makes moves, adds and changes (MACs), cable tracking and fault finding practically impossible. This, in turn, is driving trend number three – an increased need for smart network monitoring

to facilitate passive infrastructure management. The entire infrastructure is represented in a consistent, up-to-date database that is monitored and administrated from a common software tool. This 'single source of truth' provides precise and real time insight into the current state and future requirements of a data centre.

SEE THE LIGHT

To guarantee operational reliability, a data centre accommodating hundreds of thousands of fibre optic connections in a sensitive operating environment should be monitored fully automatically. An integrated hardware and software system can automatically detect when patch cords are inserted or removed and documents the cabling infrastructure and all connected equipment, unburdening humans and boosting efficiency. Administration of cabling infrastructure and connected devices is always up-to-date.

With a properly specified management system, port and asset utilisation will be significantly improved. Having an accurate, real time inventory of network components ensures connections and equipment are properly deactivated and avoids multiple assignments to a single port. 'Lost' devices can be detected and optimised or shut down. Futhermore, network resources can be used more efficiently, downtime is reduced and higher asset utilisation can result in considerable savings.

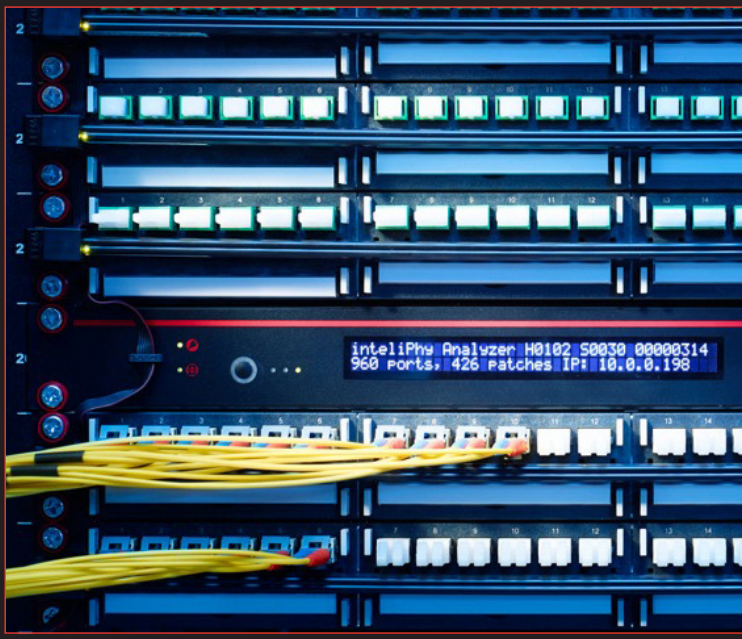
EFFICIENCY DRIVE

These solutions vastly improve the efficiency of operation and administration, and can reduce downtime by 75 per cent. Smart monitoring should eliminate stranded capacity, facilitate end-to-end analysis and agile infrastructure management, as well as predictive analysis. Inquiries into resources such as server ports, cabinet space, energy requirements and cooling capacity are answered quickly and precisely.

Smart network monitoring solutions can reduce incident management resolution time, providing the potential for significant savings in terms of both IT resources and

'Constant asset tracking and management, in combination with event notifications and alerts, can play an important part in physical network security. Monitoring also helps find security weak spots, and plan detailed improvements and upgrades.'

lost business output. Smart monitoring can also help organisations with simple and exact planning of changes and expansions, reduce power usage and generate significant savings, while helping them comply with strict governance. Data can also be used to create useful reports for financial budgeting and inventory of IT infrastructure.



WEEDING OUT WEAK SPOTS

Constant asset tracking and management, in combination with event notifications and alerts, can play an important part in physical network security. Monitoring also helps find security weak spots and plan detailed improvements and upgrades. If monitoring is inadequate and logs are out of date, switches, firewalls or routers can be (accidentally) connected to the outside world – a huge potential security hazard.

A smart network monitoring system continuously scans every connection within a network and send alerts when something out of the ordinary takes place. Unused servers, network equipment and connections can be tracked.

THE BIG IDEA

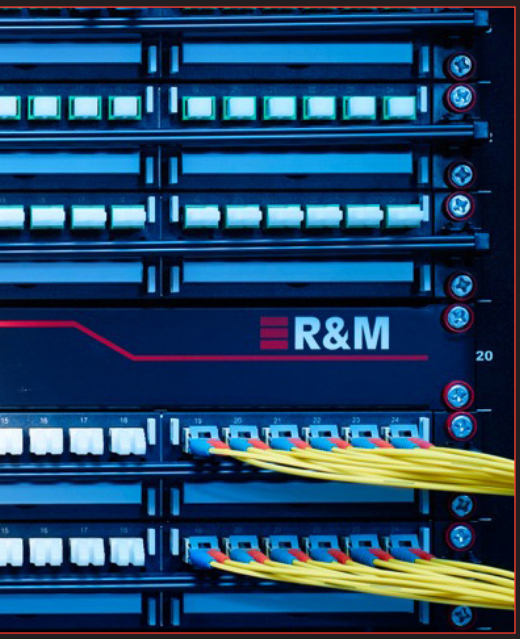
It's important to have a clear idea of the business requirements you hope to meet by implementing a smart network monitoring system. These include infrastructure and environment related considerations, future growth plans and the expectations from having such a system.

With smart monitoring, the choice of technology and system is very important, as it could either introduce limitations or facilitate expansion. System configurations need to be done wisely with the help of template based modelling and an intuitive

user interface. Open architecture systems are recommended for easy integration with third-party systems. Contactless data acquisition with no influence on data transmission is a preferable solution, as it does not violate well established cabling standards for connecting hardware and therefore presents a neutral and viable solution for any future transmission upgrade requirements.

MEETING THE CHALLENGE

The complexity of implementing a smart network monitoring solution on top of an existing infrastructure may be a challenge to organisations, as it entails revamping designs, replacing investments on cabling



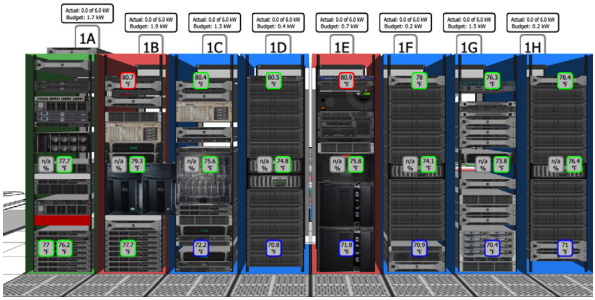
solutions, as well as possible downtime and business continuity issues. That's why it's important to look for a solution that has taken this into account at the design stage. Several solutions are retrofittable on existing networks, without replacing components or even disconnecting active users. ■

THOMAS WELLINGER

Thomas Wellinger is market manager data centres at R&M and is in charge of global data centre business. He previously worked in the company's research and development department, developing optical interconnects for future data centre applications, and has extensive link modelling experience. Wellinger holds a degree in electrical engineering and information technology from Karlsruhe Institute of Technology, Germany, and a PhD in physics from Imperial College London.

Sunbird Software

Easily manage your large scale edge and 5G deployments with Sunbird's data centre infrastructure management (DCIM) software solution. With the latest release of dcTrack 7.1, Sunbird now provides full visibility into your direct current power chain, with real time direct current power utilisation and the capacity to simplify management of thousands of remote sites.



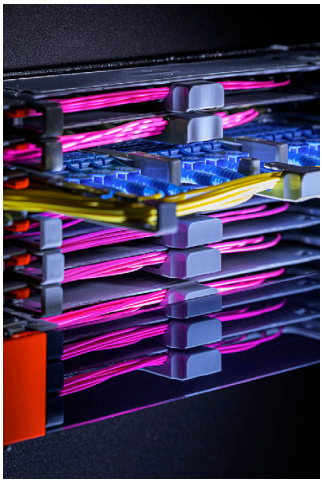
Sunbird fully supports all direct current -48V power chain objects and calculations. When the load of compute devices is connected to a direct current power chain, Sunbird will serve as an electrical engineer and accurately perform all the necessary calculations to ensure that the load can be handled by the power chain – reducing costly unplanned downtime.

Sunbird also performs battery runtime calculations based on detailed battery specifications and the present plant load. You can further simulate future expected load and model the effect on battery runtime.

CLICK HERE to schedule a demo.
www.sunbirddcim.com

R&M

R&M has a range of infrastructure management systems for data centres. As a fibre optic distribution platform, Netscale 72 supports Base-8 and Base-12 parallel optical cabling. Distribution modules for both applications fit in the same system drawers and data centres can adapt trunk cabling within existing racks and housing. In this way, Netscale 72 facilitates fast migration to new network generations.



R&MinteliPhy net is an easy to operate DCIM solution for asset, capacity and change management. Users can organise and document an entire network infrastructure digitally, as it bundles and visualises information on capacities, cabling, patch panels, racks, PDUs and IT equipment in a single database. Component representations can be added and moved by dragging and dropping, and ports and patch cords can be monitored in real time. Network managers can ensure they are utilising resources and satisfying quality, compliance and service requirements.

For more information **CLICK HERE.**
rdm.com

Siemon

The rise of edge computing has seen a corresponding rise in edge data centres. These edge facilities not only require high-density cabling and connectivity solutions for high-speed, low latency data transmission, they also require infrastructure management tools for remote management, as many will be unmanned or limited access sites.

Siemon's MapIT G2 automated infrastructure management (AIM) solution allows for real-time monitoring of an entire network including the management and monitoring of copper and optical fibre connections. Real-time email alerts notify IT or security staff when unauthorised access occurs, to help prevent downtime.

MapIT G2 integrates innovative smart patch panels and fibre enclosures with

user friendly master control panels and EagleEye Connect software, which is web-based to enable access from virtually any device anywhere. This provides immediate guidance to managers carrying out tasks remotely and, when necessary, to local maintenance teams to properly drive, control and execute daily work orders and/or emergency operations in a quick and secure manner.

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

Hitting the target

Mark Acton of RiT Tech examines the evolution of automated infrastructure management (AIM) in the internet of things (IoT) era

The dependency on IT infrastructure, networks and data centres is growing for organisations of all sizes. They constantly seek to increase output while maintaining stability and reliability, with every second of downtime translating directly to financial loss. Maintaining IT and network infrastructure, however, is becoming increasingly difficult, as networks become more complex and data centres become larger and more geographically distributed. This poses a significant burden on IT budgets and is becoming extremely difficult, if not impossible, to manage and maintain manually.

MANAGEMENT DECISION

As changes happen in a data centre or across a network environment, the connectivity and network infrastructure is the most time consuming, and potentially risky aspect to keep up-to-date and accurately document. As a result, many environments are dependent upon messy, poorly documented and often redundant cables in cabinets, under the floor and in overhead cable trays.

Manual network maintenance is labour intensive and error prone – most downtime starts from errors in the physical network or inaccurate documentation, which can be overlooked in large projects and frequently results in unnecessary downtime and operational inefficiencies. This, in turn, has direct cost impact on revenues and

project timescales.

There needs to be an intelligent approach to managing and controlling connectivity and network infrastructure, with the use of applications and tools specifically designed to address these challenges. In addition, company processes must be better integrated by being aligned and encapsulated within these tools in order to keep the services being provided in sync with the physical infrastructure.

SOLUTION PROVIDER

As an answer to all the above challenges AIM brings real time visibility, monitoring and control of all network physical layer components and identifies points of failure before they escalate. AIM also automates work processes, eliminates manual errors and helps with provisioning new equipment – enabling full utilisation of all IT assets down to the last port. This is particularly important in the increasingly distributed and remote world of edge and IoT. It is important to know that an AIM system is a combination of hardware and software designed to help better manage the network. This combination allows for the most efficient and effective use of physical infrastructure, which is centrally controlled by an intelligent software system. With an increasingly distributed architecture, there is a rising demand within data centres, edge sites and office spaces for managing – accurately and rapidly – patching between switches and devices. An AIM solution should have the capability to represent both cross-connect and interconnect topologies.

Every IoT or IP enabled device located in a building needs to be mapped with an AIM system identifying and tracking any patching changes made to the network, managing alerts, offering simple dashboards and reporting – regardless of vendor or connection methodology. The AIM system should also be able to manage the connectivity in any combination – between switch and panel, between panel and server, server and storage etc.

SETTING THE STANDARD

ISO/IEC 18598 (ANSI/TIA 5048) specifies requirements and recommendations for AIM systems. It states that '...an AIM system shall include the following two functional elements:

- Hardware that automatically detects the insertion or removal of cords.
- Software that collects and stores the resulting connection information, relates the connection information to cabling connectivity information, relates the cabling connectivity information to information from other sources and makes the connection information accessible to either an authorised user or to other systems.

The software used for AIM systems shall include either application program interfaces (APIs) or data exchange formats

to allow data from the AIM system to be shared with other systems used by the organisation. This is an important aspect for enhancing and automating the management and operational functions in the building and data centres.'

BUILDING BLOCKS

This standard neatly defines the three basic building blocks of an AIM system:

ASSET MANAGEMENT

AIM systems should be capable of tracking device history for networked and devices including details such as:

- When device was first connected to the network
- If and when it was removed from the network
- If and when it was moved from one physical location to another
- How long it has been active or inactive

CAPACITY MANAGEMENT

Accurate port capacity information for patch panels and network distribution equipment are required to enhance the capacity planning. As a minimum:

- Total rack space and occupied rack space
- Total number of AIM-enabled panel/closure ports and AIM-enabled/closure with a detected connection
- Total number of non-AIM enabled panel/closure ports and the number of non-AIM enabled panel/closure ports with a manually documented connection
- Total number of switch ports and their assigned service
- The number of switch ports with a detected connection
- Hierarchical relationship between uplink/downlink ports

CHANGE MANAGEMENT

Automated tracking of connectivity changes to support moves, adds and changes (MACs) of IT and network assets, such as the commissioning and decommissioning of servers, patching records etc.

- Real time tracking of authorised and unauthorised patching activities
- Generation of MAC work orders
- Providing means for retrieval of work orders at racks with AIM equipment
- Automated tracking of work order completion
- Scheduled work order history

BEST EFFECT

This offers best in class solution benefits including:

- More robust infrastructure. Increased service availability based on improved knowledge, understanding and use of available resources
- Better accuracy, visibility and control. This results in improved productivity and flexibility, with more effective use of available resources and capacity
- Improved network and infrastructure management. Greater integration and intelligence for the network manager
- Allows network and infrastructure to proactively detect and alert administrators to potential problems. The transparency of systems allows for faster services with fewer manual processes and opportunity for error
- Prevents downtime. Enables supervision and control of physical infrastructure in

'With an increa
distributed ar
there is a risin
within data ce
sites and offic
managing – a
and rapidly –
between swit
devices.'

real time, which increases uptime, labour efficiency and asset utilisation
- Extra network security. Guards the network from unauthorised connects, disconnects, moves and changes, which adds an extra layer of security to mission critical communications networks
- Ability to effectively manage increasingly distributed edge and IoT deployments remotely with confidence.
- Greater integration of process. Improved information flow allows for improved process integration and more effective communication and cooperation between different infrastructure teams

asingly
chitecture,
ng demand
entres, edge
ce spaces for
ccurately
patching
ches and

MANAGING THE COST BASE

A best in class AIM solution allows companies to make significant operational efficiency gains, whilst also avoiding unnecessary costs. The more complex the environment, the bigger the opportunity for cost and efficiency gains.

Operational efficiency:
- Offers greater site knowledge and configuration management database (CMDB) accuracy
- Reduces network downtime
- Improves network output
- Reduces maintenance time
- Allows greater process integration
- Eliminates errors

Cost savings:
- Reduces downtime
- Reduces power consumption
- Lowers management and technician overhead
- Optimises infrastructure utilisation
- More effective capacity planning ■

MARK ACTON

Mark Acton is business strategy and technology director at RiT Tech. With over 25 years of experience in the data centre sector, Acton is a specialist in the delivery of business critical services from highly reliable, world class facilities with 24x365 availability expectations. This includes offering consultancy and technical advice, as well as working in senior management roles.

Nutanix enables JM Finn to work remotely

JM Finn selected Nutanix to deliver a private cloud infrastructure that is secure, flexible and reliable to support its changing business needs. The JM Finn IT infrastructure was recently put to the test when the company needed to support remote working for all employees in response to coronavirus – all in about a week.

As many companies focus on how to best maintain business continuity during this difficult time, organisations in highly regulated industries, like financial institutions, struggle with enabling remote work securely while ensuring compliance. The ability to work remotely in the financial services industry has always been heavily dependent on security and safeguarding access to customers' financial information.

JM Finn had recently undergone an IT modernisation initiative, leveraging Nutanix's HCI platform to power its private cloud, with a focus on virtualisation and software defined solutions. This enabled it to easily deliver a virtual desktop infrastructure (VDI) to all essential employees. The Nutanix private cloud infrastructure, which powers all of JM Finn's workloads including VDI, plays an integral part in keeping employees safe and productive while working remotely. With its Nutanix private cloud infrastructure, the JM Finn team can also ensure all necessary data and information is stored locally and securely.

Glide supports key workers at NHS Nightingale Hospital Bristol

Glide Group is supporting key workers at the new NHS Nightingale Hospital in Bristol. The NHS and the Armed Forces have set-up a Nightingale hospital on the Frenchay campus of the University of the West of England (UWE Bristol), comprising 300 intensive care beds.

Glide is supporting NHS and other key workers at the new hospital by providing Wi-Fi connectivity to their accommodation, for no additional cost, as part of its existing contract with UWE Bristol, which has been ongoing since 2012. Having undertaken a series of remote and on-site technical checks, the infrastructure provider will be able to provide wired and wireless broadband to between 300 and 800 key workers. Glide has invested heavily in its core network capacity in the last 12 months and is confident in its ability to cope with any increase in network traffic.

Nowcomm delivers IT infrastructure for Robert Clack School of Science

Nowcomm has delivered IT infrastructure that will help Robert Clack School of Science students access the latest education technology at its new Lymington Fields site. The project, which involved the creation and delivery of a LAN, also saw Nowcomm responsible for linking the network to the school's existing IT infrastructure at two other locations using a WAN.

To ensure that teaching staff and students can access the network throughout the site and while on the move, Nowcomm mapped and configured over 60 Wi-Fi access points, meaning the school can now implement a range of technology driven teaching tools, from interactive, internet connected whiteboards to smart devices across a range of classrooms and teaching spaces.

Nowcomm will provide ongoing network maintenance and support to the school, which it has been doing since 2019, in order to ensure continuity of service for staff and students alike.

PROJECTS & CONTRACTS IN BRIEF

maincubes has added RETN to its portfolio of network providers available in its Frankfurt FRA01 data centre in Germany.

The Xilinx Versal adaptive compute acceleration platform (ACAP) will be utilised by Samsung Electronics for worldwide 5G commercial deployments.

Boston Networks is joining the fight against coronavirus by giving free access to the IoT Scotland network by anyone responding to the unique challenges raised by the pandemic.

966 rural properties in Devon and Somerset were connected to Gigaclear's ultrafast-fibre network in March, as the country entered the first weeks of the coronavirus lockdown.

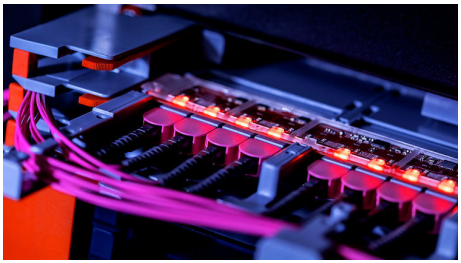
Atkins and Cardiff University are working in partnership to develop a digital twin programme that will help drive digital transformation across the built environment. The organisations will focus on leveraging Cardiff University's Computational Urban Sustainability Platform (CUSP), which creates a digital twin of buildings, infrastructure and cities to optimise design, build, operation and maintenance of assets.

R&M

As networks continue to evolve, the role of structured cabling is also changing. This is making smart, future proof decisions more complicated than ever, but R&M can help by sharing its longstanding experience and vast know-how.

In addition to its recently launched blogs featuring background information and specialist articles on technology and market trends, R&M is starting a series of blogs covering cabling related topics. The first blog topics are:

- Chemical resistance. Cables and components need to remain operational in even the harshest environments. So how do you make smart decisions without overspecifying or overspending?
- Last mile cabling deployment methods. How do you make the most practical, cost effective choices without compromising on data speed, latency and user experience?
- Rodent protection. Which solutions are available and how much protection do they provide?
- Cable shrinking behaviour. Thermal conditions can severely affect cables and therefore network performance. What are the causes and possible solutions?



To access the R&M blog **CLICK HERE.**
rdm.com

CNet Training

With sustainability at the forefront of industries across the world, CNet Training has reviewed and updated the content of its Certified Data Centre Sustainability Professional (CDCSP) program to reflect the latest sector needs and innovations.

Increased awareness of the urgency to implement and maintain a sustainable future, coupled with evolving legislation, means that data centre operators are under pressure to embrace sustainability strategies, improve their 'green' credentials and evidence improvement to stakeholders. On completion of the CDCSP program learners will be able to consider the requirements for compliance and have a full understanding of national and international regulations, codes and standards.

Successful completion also provides the learner with a Level 5 BTEC Award, official CDCSP certification, use of a post nominal title and a digital badge. The digital badge can be easily shared via social media and downloaded to verify knowledge, skills and certifications gained – adding credibility to individuals' professional profiles.

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

Leviton

An integral yet complex part of optical fibre networks is polarity. Fibre optic signals at one end of a fibre channel must match the corresponding receiver at the other end. This can become even more complex with multifibre cables and MPO connections.

Leviton's Universal Polarity Fibre Cassettes reduce the complexity of a fibre network, ensure consistent polarity and streamline any network deployment. Instead of using different cassettes at both ends of a fibre channel in Method B polarity configurations, the new Base-12 MTP to LC cassettes allow data centre managers to use the same, interchangeable cassettes.

The Universal Polarity Fibre Cassettes are available for Leviton's three popular fibre patching platforms in 12-fibre or 24-fibre options – HDX ultra-high density, e2XHD high density and SDX standard density.

CLICK HERE to learn more.

www.leviton.com

HellermannTyton

Together, HellermannTyton Connectivity and gabocom deliver a full end-to-end FTTX solution, combining a wide choice of products and strong industry knowledge.

A winning partnership of quality optical fibre management closures and wall boxes, along with perfectly manufactured microduct, means that the demands of optical fibre deployments are met at every stage of the last mile network. From the street to the building and into a property, HellermannTyton and gabocom offer a full range of connectivity solutions, completing the fibre journey from the central office to the router.

With products for both internal and external fibre applications, the combination of HellermannTyton and gabocom allows end users and installers to source a full fibre solution from companies with a wealth of knowledge and experience in fibre connectivity in the UK, across Europe and the wider global market.

To find out more **CLICK HERE.**

www.htdata.co.uk

All you need to know

CLICK ON THE COVER TO VIEW THE 2020 MEDIA KIT

Growing up

Tim Godfrey of the IEEE 802.24 Vertical Network Applications Technical Advisory Group explains why the development of networking standards is imperative to the future growth of the internet of things (IoT)

The interconnection of devices, more commonly known as the IoT, or the industrial internet of things (IIoT) for machine to machine communications, enables every business sector and consumers to obtain data and information from sensors and devices, and remotely control and manage those devices. Smart buildings, smart appliances, smart factories – none of these can claim to be smart without reliable, robust, flexible and scalable networks to manage increasing volumes, velocities and varieties of data. The critical reliance on networks to build interconnections that enable that rich range of use cases is based on network standards to ensure frictionless connectivity.

MAKE THE CONNECTION

There are already billions of IoT and IIoT devices installed globally in homes, cars, offices and manufacturing facilities. These connected devices can be anything from a power meter, streetlight or refrigerator to a security camera, thermostat or even a lightbulb. In IIoT applications, sensors and other communication enabled devices can be part of a vehicle, a building, a power substation or a production line.

The total installed base of IoT connected devices will amount to 75.44 billion worldwide by 2025 – a fivefold increase in 10 years, from just 15.41 billion devices in 2015 – all of which will be collecting and sharing data. The associated increases in data transmitted to and from applications residing

'The telecommunications sector has a long history of establishing global standards to govern connectivity and integration of a multitude of different devices to networks. Networking standards continue to remain at the forefront of emerging technologies and applications.'

in distributed computing platforms and clouds means that we must construct the standards based infrastructure to support this growth.

STANDARD ISSUE

While people enjoy the benefits of smart homes, they may not realise that these conveniences would not be cost effectively achievable without networking technology standards. Networking standards enable interoperability of communications technologies and define the rules of data exchange between devices. Since IoT and IIoT devices are produced by a wide range of vendors, it is important that a standard for those communications networks is created to enable multi-vendor interoperability – especially in new vertical markets.

The telecommunications sector has a long history of establishing global standards to govern the connectivity and integration of a multitude of different devices to networks. Networking standards continue to remain at the forefront of emerging technologies and applications. In the IEEE 802 LAN MAN Standards Committee (LMSC), several working groups have developed standards to address IoT applications.

GROUP CHAT

The IEEE 802.11 standard is important for IoT because of the ubiquitous deployment of IEEE 802.11 (Wi-Fi) for access to the internet. The IEEE 802.15 working group has developed standards for wireless connectivity for IoT in multiple vertical applications including mesh networks, body area networks, wearables and visible light communications. However, it is important to emphasise that IoT and IIoT networks are not limited to wireless.

The IEEE 802.3 working group has developed new Ethernet standards for applications in vehicles and factories, and the IEEE 802.1 working group has developed time sensitive networking standards to enable critical IIoT applications. Indeed, networks based on IEEE 802 standards enable products to serve the unique requirements of smaller vertical markets and niche applications to deliver the benefits of interoperability through standardisation.

This means that in specialised use

cases – such as those found in healthcare and manufacturing – IIoT devices from different vendors can cooperate and successfully interoperate along with other devices in the application space. These range from short range body area networks for medical applications to the smart utility network that can connect electricity meters and grid automation equipment in metropolitan areas. Standards also define the over the air wireless protocols that allow devices from different manufacturers to exchange messages and data.

OPTIONAL EXTRAS

An ecosystem of interoperable sensors and devices encourages innovation and robust solution options. Networking standards have not only helped keep production costs down for vendor ecosystems, they have established organisations for manufacturers to test and certify that their devices can interoperate no matter where on the globe they are used. Put simply, any action on an IoT device – such as a refrigerator that measures the remaining food and instructs a supplier to order more items – creates data packets to be

transported through multiple networking technologies to a variety of destinations for action. The IEEE 802's family of networking standards has been a key factor in this success.

Active standards are periodically amended to include new features that meet changing market needs and incorporate the latest technology innovations.

Each standard has specific characteristics aligned and optimised to serve specific IoT application requirements. Some IoT applications require devices that can run for years on a small battery, while others require reliable and robust connectivity in environments with many potential signal obstructions. The variety of standards allows the rapidly growing IoT and IIoT use cases to be implemented with interoperable connectivity that meets unique requirements.

INNOVATIONS IN THE FUTURE

An increasing number of homes have some sort of smart device or control application – with more than a fifth of adults looking to update their homes and smart lights, thermostats and security cameras over the next 12 months. Similar transformations are underway on the other side of the meter for electric utilities, where the connected grid is enabling improvements in grid management, reliability and cybersecurity. This is all being made possible by the network standards created by the IEEE 802 Working Groups and the IEEE's family of 802 networking standards produced over the past four decades. Without these technical standards, the connected world would be a far different place – and the hyperconnected world of the future would have a different trajectory. ■

TIM GODFREY

Tim Godfrey is an IEEE member and technical executive with the Electric Power Research Institute, specialising in telecommunications and managing the telecom project set in the information and communications technology program. He is involved in standards development and communications system architecture, design, simulation and evaluation. He holds a BSEE from the University of Kansas in electrical engineering and has 24 granted patents.

WE HOPE YOU HAVE ENJOYED

Inside_Networks

COMING UP IN JULY 20'S ISSUE:

SPECIAL FEATURES:
> COPPER CABLING STANDARDS
> ENERGY MANAGEMENT

TO FIND OUT MORE ABOUT PROMOTION WITHIN THESE FEATURES CLICK HERE

> ALL THE LATEST NEWS, VIEWS, COMMENT AND ANALYSIS

> HOW THE IOT IS CHANGING THE WAY DATA CENTRES ARE DESIGNED AND OPERATED

> THE GROWING POPULARITY OF POWER OVER ETHERNET

> THE LATEST DEVELOPMENTS IN COPPER CABLING

> WHY ACHIEVING 100 PER CENT UPTIME MUST BE THE PRIMARY GOAL IN UPS SPECIFICATION

> MANAGING DATA CENTRE ENERGY PERFORMANCE IN THESE CHALLENGING TIMES

> HOW ARTIFICIAL INTELLIGENCE WILL KEEP DATA CENTRES INNOVATIVE

> 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