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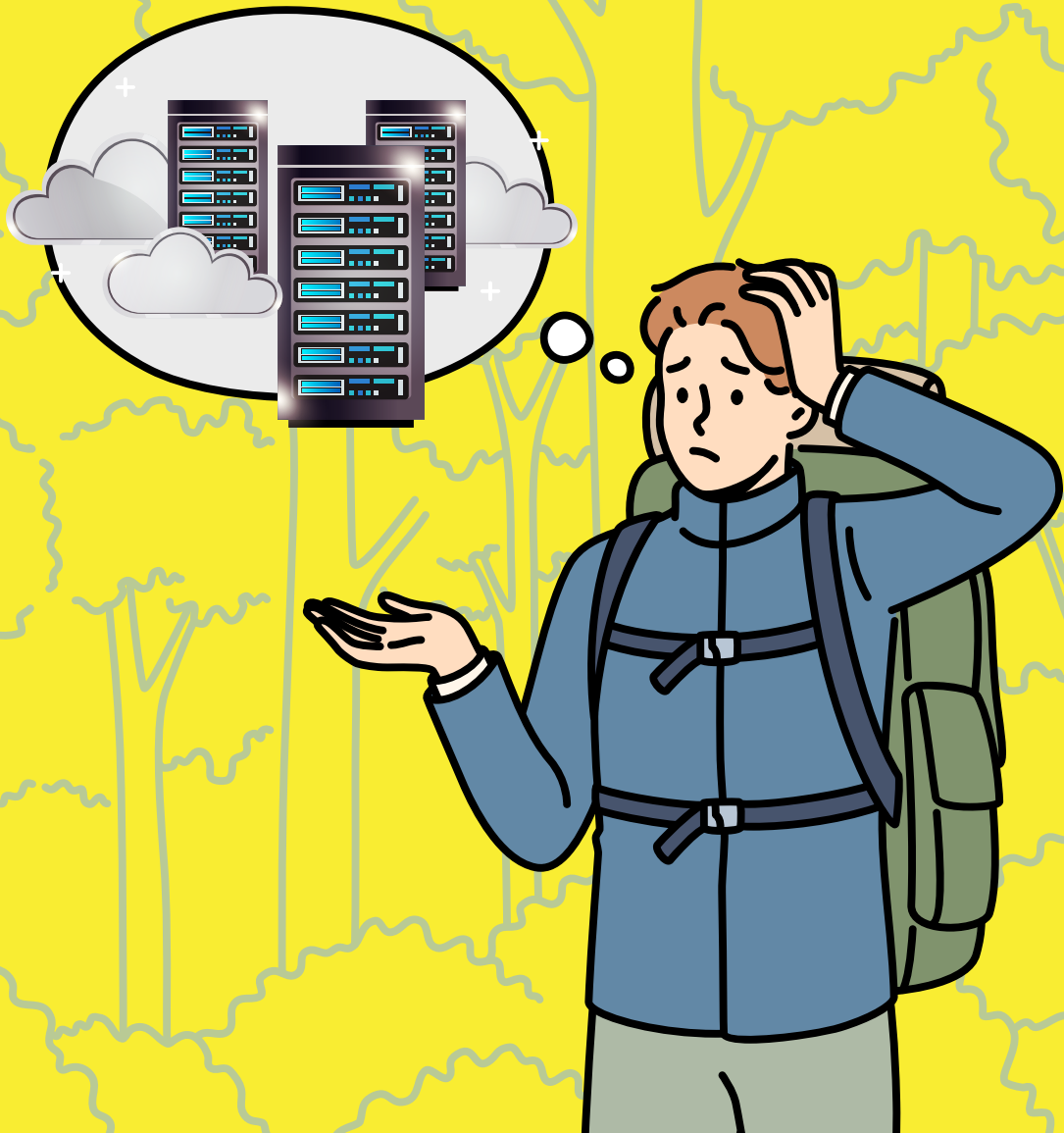
An open and shut case?

THE PROS AND CONS OF CABINETS AND RACKS

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SELECTION CRITERIA FOR
NTRE LOCATION




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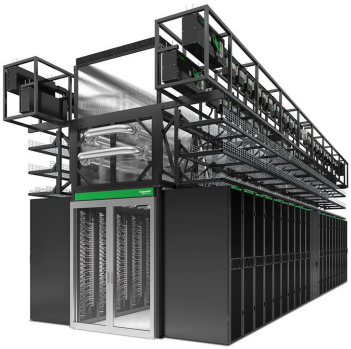


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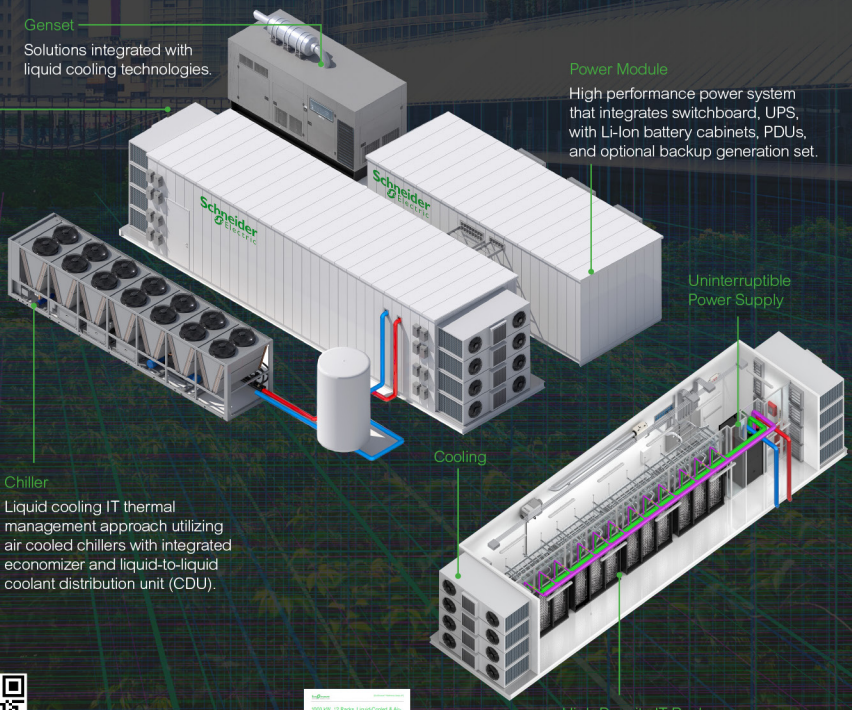
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EDITOR
Rob Shepherd
07708 972170

SUB-EDITOR
Chris Marsland

ADVERTISING MANAGER
Kate Paxton
01603 610265

CREATIVE DIRECTOR
Vishnu Joory

TECHNOLOGY CONSULTANT
James Abrahams

CIRCULATION MANAGER
Debbie King

ACCOUNTS
Billy Gallop

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Choosing the best location for a data centre has never been as important as it is in the age of artificial intelligence (AI), Put simply, the wrong site can undermine even the most well designed facility and since each data centre has unique operational and infrastructure needs, location decisions should be tailored to those specific requirements.

Not so long ago climate conditions would have been top of the selection checklist and while this is still an important consideration, factors including connectivity, energy supply and long-term scalability are now equally so. Proximity to renewable energy sources, low latency network infrastructure and regions with stable power grids can also significantly improve efficiency and uptime. Equally, regulatory, security and ethical issues play a larger role.

A carefully selected location supports both commercial success and technical performance but this process clearly isn't as straightforward as it sounds. To provide some clarity, in this issue's Question Time we've asked a specially selected panel of industry experts to offer their views on the subject and outline what key site selection criteria should be considered to ensure a data centre can meet both current operational needs and future growth demands.

Staying on the topic of AI-driven data centres, this issue also contains a feature on this subject with three excellent articles. First up, Mark Pestridge of Telehouse Europe explains how a better understanding of data centres will unlock the promise of AI. He's followed by Mark Yeeles of Schneider Electric, who explores the vital role of prefabricated data centres in an AI focused future. Last but certainly not least, Paul Mellon of Stellium Datacenters explains how the AI age presents significant power and cooling challenges.

Also in this issue we have a special feature dedicated to enclosures, racks and cabinets. Nick Taylor of Networks Centre explains the advantages and disadvantages of cabinets and open racks, while Jon Barker of Chatsworth Products (CPI) warns that as IT infrastructure races forward, most traditional cabinets simply aren't ready for the challenges ahead.

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

Rob Shepherd
Editor

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IT teams are overconfident when it comes to resilience as outages still consume a quarter of their time

Research from SolarWinds based on a survey of over 200 IT professionals across Europe shows that 55 per cent consider their organisation resilient, though just 34 per cent feel it's 'very resilient'. In the UK, 44 per cent describe their organisation as resilient, while 52 per cent feel 'very resilient.'

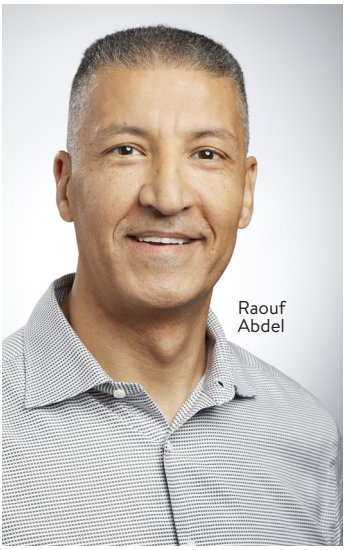

Sascha Giese

Despite this optimism, the data suggests that much of this confidence could be superficial. In the UK, 44 per cent of IT leaders spend a quarter of their working month resolving critical issues and service disruptions. This highlights a clear disconnect between perceived confidence and the day-to-day reality of managing IT disruptions.

Sascha Giese, tech evangelist at SolarWinds, said, 'Teams are dedicating real budget and effort to resilience, but many remain trapped in reactive mode. Technology alone cannot solve problems – it needs people with the knowledge and expertise, plus investment, to be able to succeed. Organisations must adopt new ways of working to shift from firefighting to innovation, without compromising reliability.'

Equinix collaborates with alternative energy providers to power AI-ready data centre growth

Equinix is working with leading energy companies that are developing innovative approaches to generating reliable and sustainable electricity. This is part of Equinix's diversified portfolio power strategy to help mitigate potential power constraints in the future, by expanding traditional power arrangements with utilities and combining new on-site power generation technologies.


Raouf Abdel

Equinix is funding and supporting advanced transmission system upgrades with utility partners. The company is also investing in power solutions such as fuel cells and natural gas that are expected to enhance operations and supporting the development of advanced nuclear technologies.

Raouf Abdel, executive vice president of global operations at Equinix, said, 'We have an opportunity to support the development of reliable, sustainable and scalable energy infrastructure that can support our collective future. By working with our energy partners, we believe we can support the energy needs of our customers and communities around the world.'

ECA welcomes government consultation on retentions and late payments


Rob Driscoll

The Electrical Contractors' Association (ECA) has welcomed the government consultation on taking measures against late payments and reforming cash retentions as part of the Small Business Strategy. The consultation predominantly picks up ideas and strategies that the ECA has fed into government over many years and goes further than any previous governments have gone.

The construction industry relies on excessively delayed payment periods, which disproportionally impacts the cashflow of small and medium sized enterprises (SMEs), particularly those within the supply chain such as electrical contractors. ECA has been working to end the unfair practice of retentions for many years.

Rob Driscoll, ECA director of legal and business, commented, 'Finally, government is consulting on how best to reconcile unfair and delayed payment practices. It marks a seminal moment for the industry to come together and shape reform in an area which has stifled growth, innovation and training, crippling supply chain cashflow and amplifying the repercussions of insolvency for over a century.'

72 per cent of organisations experienced IT disruption in the last 12 months

IT resilience remains a critical vulnerability for UK enterprises, according to research commissioned by Asanti. It found that 72 per cent of senior IT decision makers reported experiencing significant disruption or downtime in the past year due to IT resilience issues, with only 31 per cent expressing extreme confidence in their current disaster recovery and business continuity plans.


Stewart Laing

The research surveyed 100 senior IT leaders across public and private sector organisations. The findings reveal a concerning disconnect between perceived and actual resilience performance and identified a 'resilience competency gap', where critical planning, testing and investment decisions are lagging behind the complexity and frequency of modern IT threats. Despite widespread cloud adoption, 51 per cent still view cloud service outages as one of the top risks to operations – surpassing even traditional IT system failures (49 per cent).

'Too many organisations assume they're more resilient than they actually are,' commented Stewart Laing, CEO of Asanti. 'Real resilience isn't about where your systems live – it's about how well you've prepared to keep them running. Without clearly defined recovery objectives, rigorous testing and a culture of proactive risk management, even the most advanced infrastructure can fail.'

Reckless AI adoption not working for SMEs

The influx of artificial intelligence (AI) has left companies rushing to onboard technologies. With the widespread assumption that deploying AI tools will guarantee value and a productivity boost for small to medium sized enterprises (SMEs), it's easy to see why many are taking the leap of faith. However, adoption without a proper framework in place ultimately leads to wasted investment and even significant business risks.


Mark Appleton

This more isolated, risky implementation of AI into business operations is also creating a rise in 'shadow AI' – the unauthorised, unmonitored use of AI applications by employees. Shadow AI poses a massive threat to data compliance and integrity and, if left unchecked, unregulated AI usage has the potential to be a greater security risk than cyber threats.

'The AI hype cycle has created huge urgency for SMEs to adopt, but simply buying a tool in isolation does not constitute a strategy,' said Mark Appleton, group lead vendor ecosystem development at ALSO Cloud UK. 'Instead, it's a gamble, as merely adopting the AI tools doesn't mean it is working. While the potential for business transformation is high, AI tools are only as effective as their level of integration within your overall network. Currently, organisations are willingly embracing security and data privacy risks by overlooking its use within their operations.'

NEWS IN BRIEF

The European Data Centre Association (EUDCA) has announced its board of directors for the period 2025-2027. Led by Lex Coors as president, the board brings together senior leaders from across Europe's data centre community including Bruce Owen, Marie Chabanon, Isabelle Kemlin and Dick Theunissen, alongside other key appointments.

FDM Group has achieved a gender pay gap of -1.7 per cent, following the success of gender equality initiatives including its Returners Programme. Last year there was a median gender pay gap of 8.7 per cent across the UK. 36 per cent of FDM Group's global workforce is now female, up from 33 per cent in 2024 and 31 per cent in 2023, highlighting a consistent year-on-year increase in female representation.

Vertiv has completed its acquisition of Great Lakes Data Racks & Cabinets. The ~$200mn purchase expands Vertiv's rack, cabinet and integration solutions for white space applications. Vertiv has also acquired Waylay NV as part of its continued investment in AI-driven monitoring and control technologies for its power and cooling systems.

The Business Digital Index (BDI) team recently analysed the 24 largest online dating platforms and found that 75 per cent only received a grade of D or F for their digital security.

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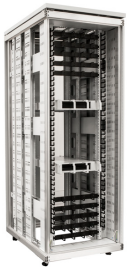
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Hi Rob



The divide between networking and security has traditionally been rooted in different goals, tools and teams. However, this separation is rapidly becoming untenable. What once were distinct domains must now converge to meet the demands of a threat landscape that is more dynamic, distributed and dangerous than ever before.

In the past, security was often seen as a layer to be bolted on to infrastructure, while networking focused on performance, availability and connectivity. But as data, users and applications are now distributed everywhere, that separation creates operational and architectural inefficiencies that organisations can no longer afford. The consequences are serious – longer detection and response times, fragmented visibility, duplicated efforts and increased risk exposure.

This problem is compounded by structural and environmental shifts. The rise of cloud native architectures and hybrid work has pushed organisations to extend their networks far beyond the data centre. Networks now extend into public cloud platforms, remote endpoints, edge locations and internet of things (IoT) environments. Each of these touchpoints represents a potential vulnerability and every link in the chain needs to be secured without impeding performance or user experience.

Regulatory scrutiny is intensifying. Frameworks like the UK's updated Cyber Essentials, NIS2 in Europe, and the Digital Operational Resilience Act (DORA) demand demonstrable security controls and clear audit trails. Siloed operations simply can't meet these requirements at the scale demanded by modern, distributed environments.

What's needed is an intentional, integrated approach to infrastructure and security – an architectural convergence where network and security functions are not only interoperable but fundamentally aligned. This is about more than deploying the right tools, it's about reshaping how organisations think about risk, resilience and control in the digital domain.

Visibility is security. You can't protect what you can't see and if networking and security teams are working with different data and perspectives, they're likely missing critical context. Converged infrastructure enables unified telemetry and real-time analytics across all layers. This holistic perspective is essential for both proactive threat hunting and rapid incident response.

orking and security is



Importantly, convergence also transforms the network itself into a critical point of mitigation. When networking and cybersecurity are integrated, the network can serve as an active defence layer, allowing threats to be detected and contained as close to their source as possible. This enables faster, more precise responses to incidents and elevates the network from a passive transport layer to an essential part of any zero trust architecture, enforcing segmentation, verification and policy controls dynamically across the environment.

Artificial intelligence (AI) and automation are playing an increasingly important role in making this vision a reality. Security operations centres (SOCs) are overwhelmed by an increasing volume of alerts from numerous tools. AI-driven platforms can ingest this data at scale, correlate it across the attack surface and prioritise high fidelity threats. When paired with automation, they can even trigger containment workflows or remediation steps autonomously, buying time for analysts and reducing the window of exposure.

But AI is only as good as the data it receives. That's why convergence is such a critical enabler – it brings networking and security data into a shared pipeline, breaking down silos and unlocking insights that neither team could access on their own. It also fosters better collaboration between teams, aligning their goals around common key performance indicators (KPIs) like mean time to detect (MTTD), mean time to respond (MTTR) and service availability.

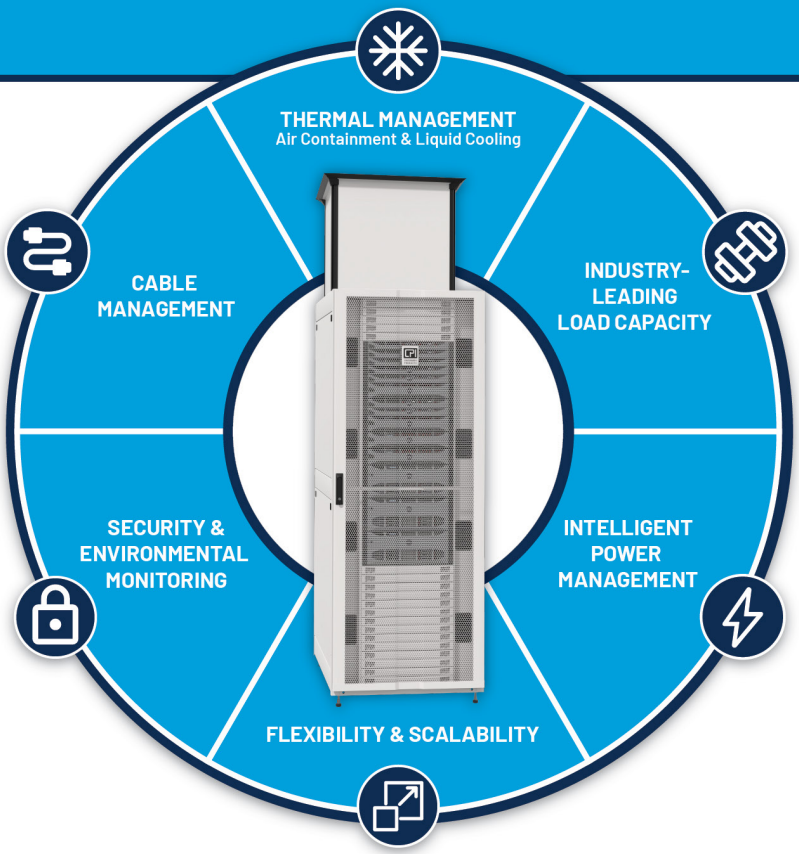
For security and infrastructure leaders, the implications are clear. Investing in converged architecture goes beyond just technology – it's about governance, culture and capability. It requires rethinking structures, integrating workflows and reskilling teams for a more interconnected environment.

As threats become more continuous, distributed and often invisible until it's too late, convergence becomes essential. Organisations that embrace it will be better positioned to protect their assets, comply with regulation and enable the innovation that drives growth. Those that don't may find themselves constantly reacting to risk, rather than getting ahead of it.

Chris Gilmour
Axians UK

Editor's comment

Siloed systems create blindspots, weaken defences and slow down response times to threats. In a world of relentless cyberattacks, fragmented operations breed miscommunication, inconsistent policies and delayed detection that attackers can exploit with precision. As Chris makes clear, convergence is no longer optional when breaches are inevitable and speed is survival.



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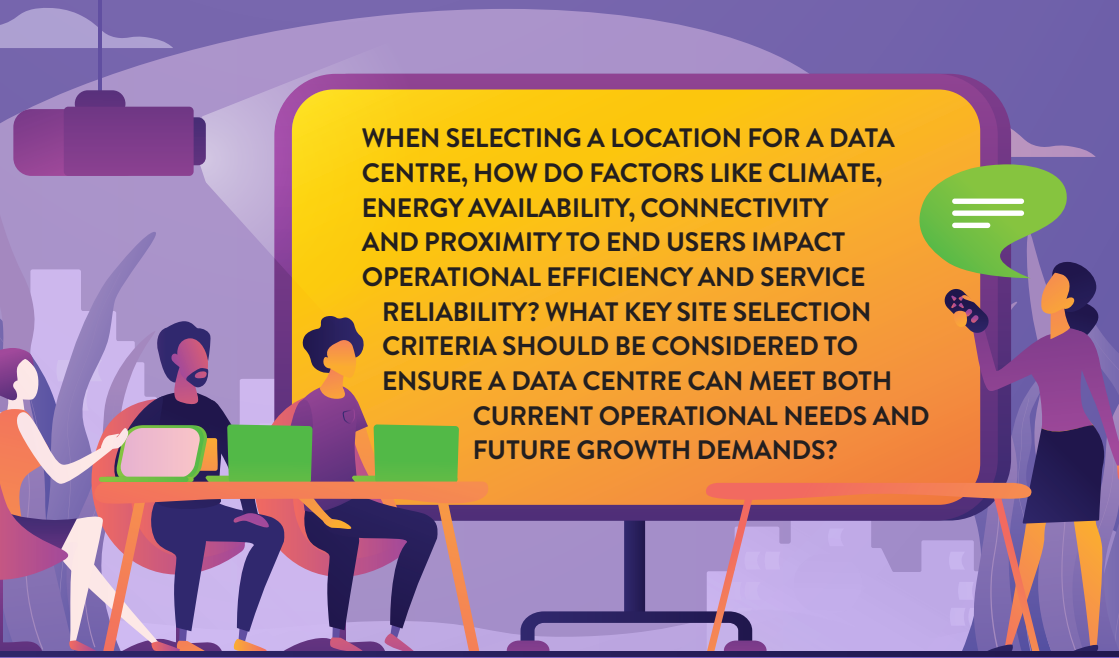
Where it's at

The geographical location of a data centre is often based on several factors that influence its operational efficiency and service reliability. Inside_Networks has assembled a panel of industry experts to identify the key site selection criteria and the impact climate, energy availability, connectivity and proximity to end users have on this process

Locating a data centre is a critical decision that directly impacts operational efficiency, scalability and long-term viability. A well chosen location supports current workloads while providing the infrastructure and flexibility needed for future expansion.

Climate, energy availability, connectivity and proximity to end users all play a role in maintaining continuous operations and safeguarding data. Cooler ambient temperatures can reduce the energy required for cooling IT equipment, thus enhancing sustainability. The reliability and cost of electricity, with access to renewable energy sources, is increasingly desirable. Connectivity is another vital consideration, as a data centre must be tightly integrated into high speed fibre optic networks to ensure low latency.

Ultimately, choosing a site that balances immediate technical needs with long-term growth potential ensures that a data centre remains resilient well into the future. To examine the issue of data centre location in more detail Inside_Networks has assembled a panel of experts to offer their views on the subject.



CARRIE GOETZ

PRINCIPAL AND CHIEF TECHNOLOGY OFFICER AT STRATEGITCOM

When picking a site for a data centre, communications, power and water are paramount but may not be the only considerations. After all, just because a site doesn't have one of the trinity, it doesn't mean that it can't be added. Whether or not that cost is bearable is another thing. Available power, water and connectivity needs haven't changed at a fundamental level but they aren't the prime considerations any longer.



It really depends on the type of data centre being implemented and the purpose of that facility. An artificial intelligence (AI) or Bitcoin facility won't have the same needs as a colocation or a hyperscale facility. Selections must include agility and the ability to grow. Competition for overtaxed resources could render an otherwise amazing site useless. We also need to know future plans for the area surrounding any facilities.

Environmental considerations are gaining interest. Locations that have massive amounts of land around them are favoured for renewable on-site power. Natural gas pads utilise site produced power in island mode removing the need for proximity to the grid and decreasing transmission losses. A natural gas site next to an agriculture site allows emitted carbon to be utilised by flora and fauna for carbon reduction or elimination. Geothermal locations provide another sustainable option and these are becoming increasing important where grids are stretched to capacity. Understanding all resource stresses is critical.

Increasingly important today is proximity to workforces. Remote hands help, once installed, but we are seeing a shortage of talent across the board. Proximity to a college or trade apprenticeships can be highly desirable and lower travel costs due to local resource availability.

Other considerations such as fire, police, a local customer base, redundant component space, climate and access to parts are included in decisions. As companies vie for space, it's not a matter of finding the perfect site – it becomes a matter of finding the best option in terms of what's available. This may very well end up being the year for the edge with its rapid deployment a distinct advantage.

'INCREASINGLY IMPORTANT TODAY IS PROXIMITY TO WORKFORCES. REMOTE HANDS HELP, ONCE INSTALLED, BUT WE ARE SEEING A SHORTAGE OF TALENT ACROSS THE BOARD.'

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ADRIAAN OOSTHOEK
CHAIRMAN AT PORTUS DATA CENTERS GROUP

Power availability is the overriding requirement, especially for large hyperscale facilities. However, with the increase in edge computing and hybrid cloud solutions, connectivity and physical location to the target regional or metro area population being served, including the density of existing enterprise businesses, are equally vital for ensuring the operational efficiency and future viability of a data centre.



While connectivity dense data centres have always played a hub function, this will increase in importance as they offer redundancy that is otherwise difficult to achieve. Likewise, distance related latency and its impact on response times are increasingly top of mind for end users and a prerequisite for internet of things (IoT) and AI powered applications, especially inference models. The cloud zone strategies of the hyperscale public cloud providers, deploying and decentralising at smaller regional data centres, underline this point even more.

The growing adoption of hybrid cloud models will often necessitate a regional data centre presence to achieve low latency, reliable connectivity and enhanced data security, particularly for companies in highly regulated sectors such as finance, healthcare and manufacturing. By offering space, power, cooling and connectivity, colocation centres in strategic locations allow businesses to host critical infrastructure closer to end users, thereby reducing latency and improving performance.

Additionally, a location where a data centre can support energy providers through heat exchange and grid stabilisation initiatives offers the opportunity to further offset carbon emissions and position the data centre as an energy contributor to the local community. This further enhances both its and its customers' environmental, social and governance (ESG) credentials.

The closer your data centre is to end users and the more connected it is to high speed carrier networks and dark optical fibre infrastructure the better. This will support edge based applications and hybrid cloud, enabling efficient, reliable and high speed delivery of services to the local population and businesses in the region. This ensures greater productivity, agility, competitiveness and customer satisfaction.

'DISTANCE RELATED LATENCY AND ITS IMPACT ON RESPONSE TIMES ARE INCREASINGLY TOP OF MIND FOR END USERS AND A PREREQUISITE FOR IOT AND AI POWERED APPLICATIONS, ESPECIALLY INFERENCE MODELS.'

MARK ACTON

HEAD OF TECHNICAL DUE DILIGENCE AT FUTURE-TECH

Data centre site selection initially focuses on a few key criteria but, ultimately, there will be a number of diverse factors that come into play. In most cases the final selection will be something of a compromise, as some requirements may never be wholly satisfied.



The key criteria are obviously power and communications. However, this is increasingly not just about power availability but the cost of power and speed to deliver at scale. There is also the issue of what type of data centre we are discussing. Is this a traditional cloud type colocation, enterprise site or an AI factory? The requirements will be different for different use cases, so a 'one size fits all' approach is not applicable.

Operational efficiency will inevitably be affected by environmental factors such as ambient temperatures, humidity, altitude and water scarcity. It is obvious that a warm and humid climate will require more mechanical cooling, and therefore power usage, than a location with a lower ambient temperature. Similarly, evaporative cooling can reduce power consumption but that can have an environmental impact in regions with water scarcity.

Operational efficiency can be maximised in any location with the right design and engineering solutions, but the more important question is what specification is required. How reliable does our data centre need to be, does it really need generators or to comply with ASHRAE TC 9.9 'recommended'? In some cases the answer is no, as we are already starting to learn from the cryptocurrency miners.

Location will certainly impact energy efficiency but other factors are likely to take precedence when it comes to site selection. These include data sovereignty, location of availability zones, government policy, ease of permitting, economic and political stability, local taxation advantages, availability of sustainable power, environmental risks, population density and gross domestic product (GDP), among others.

Operational efficiency can also be considered in terms of project financing. This will be impacted by factors such speed to planning approval, import costs/tariffs and site construction readiness etc.

'DATA CENTRE SITE SELECTION INITIALLY FOCUSES ON A FEW KEY CRITERIA BUT, ULTIMATELY, THERE WILL BE A NUMBER OF DIVERSE FACTORS THAT COME INTO PLAY. IN MOST CASES THE FINAL SELECTION WILL BE SOMETHING OF A COMPROMISE, AS SOME REQUIREMENTS MAY NEVER BE WHOLLY SATISFIED.'

ZAC POTTS

HEAD OF SUSTAINABILITY AND INNOVATION AT SUDLOWS

The location of a data centre is critical. The wrong location can make the best designed data centre unviable, so taking the time to select the right location ensures both commercial viability and engineering excellence.



Different data centres have different requirements. Whilst there are common factors that most either seek or avoid, the best location for one facility is not necessarily right for another. As with any design, we meet the fundamental needs first, which will differ, and maximise the opportunity from there.

The requirements dictated by the IT need to be considered first and foremost. Can the required connectivity be delivered? Is it within the correct geographic region for the expected data sovereignty requirements? Does it need to be accessible? These are factors that cannot be changed later – even with the best engineering.

Once fundamental IT needs are met, other mandatory considerations, including current and future local risk factors, can be assessed before preferable characteristics such as land cost and the availability of clean power. Importantly, local climate, including predicted change, can strongly impact both operational expenditure (OpEx) and long-term risk.

Selecting a site with the wrong dimensions can critically impact both capital expenditure (CapEx) and OpEx, introducing unwelcome changes to the programme level design, driving the design of the engineering services in a suboptimal direction or forcing access, maintenance and plant replacement strategies that are complex and costly. These factors drive the importance of both correct site selection and early engineering development and planning.

Location is critical and a data centre cannot be considered in isolation. Whilst free cooling requires a compatible climate, incorporating a data centre into a heat network, with realistic opportunities for heat recovery and reuse, or as part of a high efficiency combined heat and power (CHP) system, is simply not possible without careful, exact and early consideration of the location.

If data centres are to have a place within a sustainable ecosystem, they need to be located where they can contribute, whilst still meeting their fundamental purpose.

'CAN THE REQUIRED CONNECTIVITY BE DELIVERED? IS IT WITHIN THE CORRECT GEOGRAPHIC REGION FOR THE EXPECTED DATA SOVEREIGNTY REQUIREMENTS? DOES IT NEED TO BE ACCESSIBLE? THESE ARE FACTORS THAT CANNOT BE CHANGED LATER – EVEN WITH THE BEST ENGINEERING.'

CHARLIE BRUINVELS
HEAD OF LAND INTELLIGENCE AT BCS



When it comes to locating a data centre there are a number of distinct areas that need to be considered when looking at a potential site. This process is essential for assessing current and future needs and ensuring operational efficiency and service availability for the long-term.

Probably the biggest challenge is access to the grid and renewable power, which are key to ensuring resilience and meeting sustainability targets. Therefore, it is vital to secure long-term and stable energy sources – rather than what is currently available – to future proof facilities.

The effect of climate change on a particular location also needs to be factored into any decision making process. This is because hazards such as flooding or heatwaves are expected to worsen, particularly in areas that already have an elevated risk, and this can have a huge impact on operational efficiency and service reliability.

As the sector continues to face huge demand, speed to market and infrastructure readiness are growing in importance. This includes proximity to optical fibre networks, transport and key interconnect points. Hidden infrastructure challenges can delay projects and there are often cost and time advantages associated with pre-assessed, 'shovel ready' sites.

AI, hyperscale and colocation trends are driving demand for strategic site selection. However, the lack of suitable land is creating a problem for the data centre industry. This leading to more innovative methods of site selection and expansion.

At the heart of this is expert land intelligence that can support informed decisions and enable organisations to avoid poor location choices. It helps to mitigate delays, power issues, or stranded assets and enable data centre investors to de-risk their portfolios.

'THE EFFECT OF CLIMATE CHANGE ON A PARTICULAR LOCATION ALSO NEEDS TO BE FACTORED INTO ANY DECISION MAKING PROCESS. THIS IS BECAUSE HAZARDS SUCH AS FLOODING OR HEATWAVES ARE EXPECTED TO WORSEN, PARTICULARLY IN AREAS THAT ALREADY HAVE AN ELEVATED RISK, AND THIS CAN HAVE A HUGE IMPACT ON OPERATIONAL EFFICIENCY AND SERVICE RELIABILITY.'

AFL

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DENALI™

PEAK PERFORMANCE FOR OPTICAL FIBER NETWORKS

Built for high-density, high-speed, high-growth networks, our modular optical fiber platform supports rising fiber counts and high-power GPUs with minimal infrastructure upgrades.

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Accelerate AI and fiber network deployments

Global consistency with local expertise

Ensure consistent performance wherever you build

Simplify operations from order to install

Fewer part numbers, faster installs, and smarter integration



STEPHEN BOWES-PHIPPS

VICE PRESIDENT EMEA DATA CENTRES AND CLOUD AT STATE STREET



Operational efficiency refers to the effective and timely execution of tasks while understanding a data centre's operational profile. Service reliability shares some aspects but focuses on maintenance, procedures, staff expertise, supplier relationships and investment in essential equipment. Evaluating a new site's environmental profile may be more significant than operational execution, as the latter is generally more manageable.

When I have carried out site assessments in the past, concentrating on environmental risk factors has been paramount. This, combined with access to power, backbone fibre routes and an ecosystem of skilled, available resources, is critical to success. Some of these areas can be created from scratch but be prepared to invest heavily to do so. Let's take a brief look at some of these:

- Risk factors. What potential hazards are close to the site? What are the main road and rail routes? Flight paths? How easy is it for staff and visitors to get to site? What are the neighbours like? Avoid warehousing or industrial sites that involve the large accumulation of explosive or toxic chemicals. Residential sites can be troublesome due to noise complaints. Flood risk and seismic activity need to be considered too.
- Power. What will be the reliance on a single supply? What routes to site are available? Do decisions need to be made on investing in on-site substations? What capacity for future growth is available?
- Network. Proximity to backbone dark fibre is important since laying new connections can carry eye-watering costs, unless you can attract an anchor tenant who is a main carrier.
- Resources. If a site is sitting in an area with 'network effects' with regards to skilled data centre resources, then a large pool of potential candidates may be available. Otherwise, linking up with nearby educational institutions and initial heavy reliance on third-party contractors will be key investment decisions.

The market a data centre is trying to attract and/or the type of IT services it will house are factors that dictate proximity to users. Consequently, this is opening up areas that otherwise may have been overlooked, and where land is cheaper and planning permission easier to obtain.

'WHEN I HAVE CARRIED OUT SITE ASSESSMENTS IN THE PAST, CONCENTRATING ON ENVIRONMENTAL RISK FACTORS HAS BEEN PARAMOUNT. THIS, COMBINED WITH ACCESS TO POWER, BACKBONE FIBRE ROUTES AND AN ECOSYSTEM OF SKILLED, AVAILABLE RESOURCES, IS CRITICAL TO SUCCESS.'

PANDUIT® FlexFusion™

Next-generation cabinet with custom configurations to meet your network needs.

Scalability
Configuration platform to create cabinet to meet your specification and requirements

Ease of Use
Easy to adjust E-rails, PDU installation and accessories to reduce installation time

Maximum Cooling
80% perforated doors for increasing power density in newer deployments

Robust
Solid construction with Best-in-Class load rating for secure installation



Flexibility
Universal design for server or network applications

Security
Choice of key lock, 3-digit combo or HID electronic and/or keypad lock.

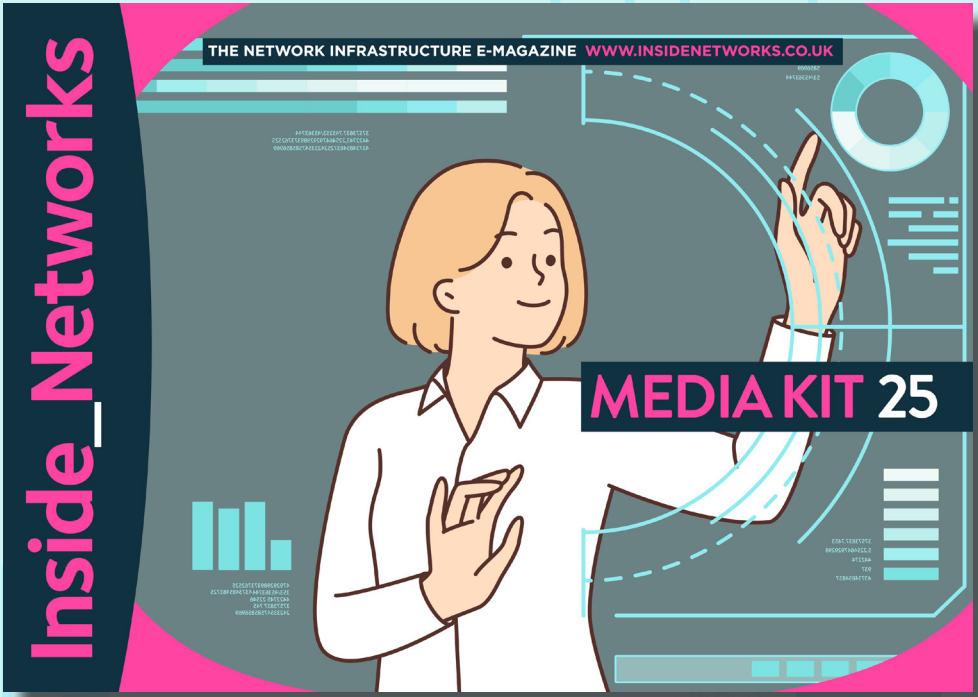
Integrated Intelligence
Turnkey deployment with pre-configured PDU, access control and environmental monitoring

Enhanced Cable Management
Choice of tool-less fingers, vertical cable manager and front-to-back cable manager

https://mkt.panduit.com/UK-FlexFusion.html

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RKFL26--SA-ENG 2/2021

All you need to know



CLICK ON THE COVER TO VIEW THE 2025 MEDIA KIT

JOE MCCAFFREY
CEO AT DMC GLOBAL PARTNERS

The strategy for selecting a data centre location has evolved rapidly, with priorities shifting from climate to connectivity, energy availability and long-term scalability. While a cooler climate once provided a clear operational advantage, today's decision making is more heavily influenced by power availability and optical fibre infrastructure routes.



Power is now the primary constraint across many legacy hubs in Europe, including Frankfurt, London, Amsterdam, Paris and Dublin (FLAP-D), where grid capacity is saturated and infrastructure investment is lagging. In response, operators are moving into previously overlooked markets such as Milan and Madrid, locations that offer surplus industrial land and energy, along with sites across the Middle East. The Nordics also remain popular, bolstered by hydropower capabilities and grid resilience.

Connectivity remains crucial. Proximity to fibre infrastructure often necessitates locations near coastlines but this introduces flood risk, an increasingly critical factor as sea levels and weather patterns shift. Comprehensive flood risk assessments are now even more integral to site viability analysis.

Energy resilience and sustainability are dual priorities. While direct access to renewable energy remains challenging due to the typical industrial zoning of data centres, power purchase agreements are enabling operators to source green energy off-site and offset their grid usage. This is an increasingly common practice for organisations pursuing sustainability targets and avoiding grid reliance for climate compliance.

Another key consideration is proximity to talent and business hubs. Remote sites may offer land and power but without access to skilled personnel or an established ecosystem many clients view them as unviable.

Above all, future scalability drives decision making. Clients demand assurance that sites can expand from initial capacities such as 100MW to 300MW or beyond. Any location lacking that potential is unlikely to pass initial scrutiny.

Ultimately, successful site selection hinges on rigorous technical due diligence. Loose commitments around fibre, power or scalability can unravel once construction begins. Investing early in accurate, detailed site analysis mitigates risk and ensures the location can meet both current performance requirements and long-term operational ambitions.

'ENERGY RESILIENCE AND SUSTAINABILITY ARE DUAL PRIORITIES. WHILE DIRECT ACCESS TO RENEWABLE ENERGY REMAINS CHALLENGING DUE TO THE TYPICAL INDUSTRIAL ZONING OF DATA CENTRES, POWER PURCHASE AGREEMENTS ARE ENABLING OPERATORS TO SOURCE GREEN ENERGY OFF-SITE AND OFFSET THEIR GRID USAGE.'

Fibre built for the futu

Elevate delivers premium data centre infrastructure without compromising on performan
Elevate's multi-fibre push on (MPO) solution raises the bar for fast deployment and future

As demand grows for speed, scalability and space efficiency, Elevate – the data centre brand from Excel Networking Solutions – delivers high performance, high density optical fibre systems built for tomorrow's mission critical environments.

At the core of Elevate's fibre offer is a high density MPO solution featuring HD and MD chassis, modular cassettes and trunk cables in Base-8, -12, -16, and -24 configurations. Designed for fast deployment and future scalability, Elevate's fibre ecosystem is tailored to colocation, hyperscale, enterprise and high performance computing environments, whilst integrating seamlessly with the wider passive platform of racks, enclosures and containment.

Precision. Performance. Partnership.

Elevate's MPO portfolio is underpinned by a strategic partnership with Senko Advanced Components, a global leader in optical interconnect technology.

'Our partnership with Senko is instrumental in ensuring that Elevate's MPO portfolio remains at the forefront of optical interconnect technology. By integrating Senko's proven MPO connectors – known for their low insertion loss and outstanding durability – we're delivering infrastructure our clients can rely on. Senko's innovation roadmap is shaping our development strategy as the industry shifts towards very small form factor (VSFF) connectivity. This alignment enables us to anticipate emerging industry standards, keeping our solutions not only current but future ready. It's a collaboration built on quality, performance and shared vision.'



Neil Payne, product manager

From MPO to VSFF – Elevating the Future

As rack density and port counts continue to rise, VSFF connectors are emerging as the next industry frontier, boosting panel density and cutting cable bulk in AI-driven and hyperscale environments.

'We're already preparing our product roadmap to integrate VSFF connectors, ensuring our customers can transition seamlessly as the market evolves. This forward thinking approach reinforces our commitment to future compatibility, giving clients the confidence that investing in Elevate's MPO platform today lays the foundation for long-term scalability. It's not just about solving today's challenges – it's about building infrastructure that's ready for what comes next.'



Ross McLetchie, UK sales director

UK assembly with global impact

Elevate pre-configured fibre assemblies are built in the UK, offering short lead times, consistent quality and full configuration flexibility. This capability is made possible

ure

nce, quality or support.
e scalability

ELEVATE
Future Faster

through the multi six-figure investment Elevate has made in its Config department, which moved into a brand new, purpose built pre-termination facility at Environ House, Birmingham, earlier this year.

Spanning 2,400ft², the new facility triples the previous space and offers dedicated fibre and copper zones, each optimised for precision, cleanliness and workflow efficiency. Investment in state-of-the-art equipment including polishing machines, curing ovens, interferometers, optical array testers and ribbonisers ensures the highest possible yield and product performance. The fibre zone features daylight lighting, illuminated magnifiers, epoxy coated flooring, positive airflow systems and cardboard free protocols to minimise contamination.

Investing in skills and quality

To support this expansion, Elevate continues to invest in its people. The Config team recently completed extensive MPO training, delivered by Senko, covering termination, polishing, testing, inspection and cleaning – reinforcing Elevate's ability to deliver the highest standards for mission critical data centre infrastructure and ensuring that the team is equipped with the latest expertise.

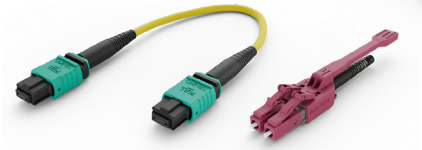
Built for what's next

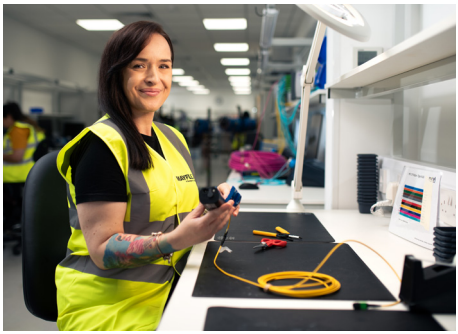
From local manufacturing to global partnerships and future ready design, Elevate is redefining what it means to deliver high performance connectivity in data centre environments. With a clear vision, a relentless focus on quality and a roadmap aligned to the industry's evolution, Elevate is not just keeping pace – it's leading the charge.

Whether you're deploying AI infrastructure, scaling out high performance computing clusters or planning your next edge facility, Elevate's MPO offering provides the performance, flexibility and reliability needed to succeed.

CLICK HERE to discover Elevate.







Join us at DCD Connect London

Elevate will be exhibiting at DCD Connect London on 16-17th September. The team of data centre experts will be on hand to discuss current challenges, future trends and how Elevate's modular solutions are helping organisations build resilient, future ready environments – faster.

CLICK HERE to register as a guest of Elevate using invite code: **ELEVATE**

Fit for purpose?

In the rapidly evolving world of IT infrastructure, the humble data centre cabinet is facing a reckoning. Jon Barker of Chatsworth Products (CPI) explains why most cabinets won't be able to handle what's coming

What was once a relatively passive metal frame for mounting servers, switches and storage is now considered to be a critical structural, thermal and operational component, and holds a lot of power at the design phase of planning for a data centre. In an era defined by high performance computing, artificial intelligence (AI) and escalating power densities, the traditional data centre cabinet is increasingly becoming a bottleneck.

DENSITY REVOLUTION

Data centres designed just a decade ago typically expected rack densities to remain in or around the range of 5-10kW. Today, that's no longer sufficient. Cutting edge workloads, especially those supporting AI training or real-time analytics, are pushing individual cabinet power demands to 30kW, 45kW and even 60kW – and projections suggest this is just the beginning.

This surge in density isn't simply about putting more servers in a rack. It's about handling more heat, more weight, more cables and more operational complexity. Unfortunately, many cabinet designs were not designed with future proofing in mind.

STRUCTURAL BURDEN

Modern cabinets are now expected to support far more than just IT hardware. They must accommodate integrated power distribution units (PDUs), rear door heat exchangers, liquid cooling manifolds, cable management sidecars and, in some cases, batteries or AI-specific accelerators. This added infrastructure increases weight significantly.

Racks must not only support heavier loads but do so during transport, installation and operation – sometimes in seismic regions where vibration and sway impose even stricter structural demands. A cabinet that is unable to retain its structural integrity under these conditions isn't just a weak point and inconvenience before replacement, it's a risk to uptime, safety and business continuity when meeting deadlines.

THERMAL MANAGEMENT

One of the most significant evolutions in cabinet design is its role in thermal performance. In high density environments, airflow management is no longer a peripheral concern, it's a primary one.

'Cabinets must allow for clean, efficient access to equipment, cabling and cooling systems. Designs that don't support modular upgrades, reconfigurable layouts or fast service access become liabilities.'



Cabinets are considered integral parts of containment systems. Their design influences whether cooling strategies succeed or fail, and poorly designed cabinets can cause airflow leaks, create hotspots or restrict the integration of vertical exhaust ducts and plenum connections, particularly in hybrid cooling solutions.

The result? Higher operational costs, increased risk of thermal throttling and diminished hardware lifespan – not to mention the sustainability element where reducing the carbon footprint is at the forefront of every organisation's goals. Thermal issues do not start at the room level, they start at the cabinet.

'The cabinet is no longer just a frame, it's a foundational component of the modern data centre. As workloads grow heavier, hotter and more complex, the limitations of traditional enclosures become more acute.'

SERVICEABILITY AND MODULARITY

As data centre environments scale and evolve, agility is paramount. Moves, adds and changes (MACs) are a fact of life, especially in colocation and cloud environments where uptime is king and client demands shift constantly.

Cabinets must allow for clean, efficient access to equipment, cabling and cooling



‘Organisations that fail to evolve their cabinet infrastructure risk being outpaced by those that recognise the value of resilient, adaptive and high performance physical architecture.’



systems. Designs that don’t support modular upgrades, reconfigurable layouts or fast service access become liabilities. And as racks are filled with high value gear – especially AI chips or graphics processing unit (GPU) arrays – the cost of downtime or access related delays grows significantly.

AN INVISIBLE LIMITATION

The reality is that many data centres still operate with cabinet infrastructure designed for a different era. These legacy enclosures are often quietly constraining performance – not



because the IT gear itself is insufficient but because the surrounding physical infrastructure can't support modern demands.

In some cases cooling strategies underperform, airflow paths are obstructed, power distribution is chaotic and the weight load is pushing structural limits. A data centre may be state-of-the-art in terms of software and computing, but the cabinets are holding it back.

BUILDING SMARTER

Scaling to high density isn't just a matter of bolting in more servers or deploying the latest central processing units (CPUs) and GPUs. It's about taking a systems level view of infrastructure and making smarter choices at the core – starting with the cabinet. Forward looking organisations are now investing in cabinet platforms designed from the ground-up for:

- High structural integrity under heavy loads and seismic conditions.
- Seamless integration with advanced cooling strategies (air and liquid).
- Dense yet manageable cabling support.
- Modular power and airflow components.
- Service friendly designs that reduce operational friction.

STRATEGIC INFRASTRUCTURE

The cabinet is no longer just a frame, it's a foundational component of the modern data centre. As workloads grow heavier, hotter and more complex, the limitations of traditional enclosures become more acute. Organisations that fail to evolve their cabinet infrastructure risk being outpaced by those that recognise the value of resilient, adaptive and high performance physical architecture. In a world where every Watt, every cable and every cubic inch of airflow counts, smart cabinet design is no longer optional – it's essential.■



JON BARKER

Jon Barker is CPI's technical manager for Europe. He has over 25 years' experience in the engineering industry, with 15 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.

Austin Hughes

Austin Hughes' enterprise level rackmount and IT solutions support data centres and high density installations for powering AI technology.

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



InfraPower PDUs can be integrated with InfraSolution Z-3001 networked smart card access control to provide a high level of rack access security, whilst supporting power over Ethernet (PoE) to reduce implementation time and the expense of having electrical power cabling installed. Installing a remote rack IP door access solution allows monitoring, control, alarm and reporting capabilities for all your server racks.

Sensors are available for complete environmental monitoring, while peripherals such as fans and lights can be added to further expand functionality.

CLICK HERE to find out more or to send an email **CLICK HERE.**
www.austin-hughes.com

R&M

R&M's 19-inch modular Freenet cabinet system includes the heavy duty Freenet Superior, which is suitable for installing a larger number of heavy devices. A basic frame can be upgraded to the Superior version with a load capacity of 1500kg.



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

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

For further information **CLICK HERE.**
www.rdm.com

Elevate



The Elevate Data Centre Rack (DCR) Series is engineered for ultra-high density data centre and high performance computing environments, supporting static loads up to 2000kg. Featuring a vented front door and double vented rear doors with up to 80 per cent perforation, the DCR maximises effective airflow and cooling efficiency.

Available in both server and network configurations in a range of heights and up to 1400mm in depth, each rack includes fully adjustable 19-inch profiles with airflow management baffles that move with the rails, directing cold air through active equipment. Overlapping brush panels, blanking options and integrated cable management enhance airflow integrity while simplifying cable routing.

Complemented by hot and cold aisle containment, the solution enhances thermal performance across white and grey space deployments. Additional features include high volume cable cutouts, 64A Commando plug clearance, extended roof configurations and quick mount power distribution unit (PDU) trays.

Assembled in the UK for fast EMEA lead times, Elevate combines innovation, sustainability and decades of connectivity expertise. Take the opportunity to meet the team and explore the full solution at DCD Connect London on 16–17th September.

CLICK HERE to explore Elevate.
www.elevate.excel-networking.com

Panduit



Panduit's FlexFusion XGL cabinets for network and server equipment provide maximum capacity to manage high cable density in data centre, enterprise or colocation deployments. Available with lockable door solutions, FlexFusion XGL cabinets offer a secure cabinet for 19-inch rackmount IT equipment, providing extensive cable management options with high thermal efficiency, and are suitable for hot aisle/cold aisle or thermal containment.

Manufactured in welded steel, the cabinets come in fixed configurations of 600mm and 800mm widths, 1070mm and 1200mm depths, and 42RU and 48RU heights. Front single hinge door and split hinged rear doors provide 80 per cent open perforation, maximising cooling airflow to the IT equipment. Meanwhile, a 170° door open angle minimises aisle obstruction and horizontally split side panels enable easy interconnection of equipment in a side by side configuration, while brush cable top of cabinet entry points reduce air leakage.

FlexFusion XGL cabinets are available in black and white. They retain maximum scalability for future moves, adds and changes, and offer a massive static weight capacity of nearly 1.6 tons and a rolling load of up to 454kg.

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

Spot the difference

Nick Taylor of Networks Centre explains the advantages and disadvantages of cabinets and open racks

The choice between cabinets and open racks for housing cabling and switches is an important decision that impacts everything from performance and scalability to maintenance and cost. Both options offer distinct advantages and disadvantages, and the best choice often depends on a large range of factors including the size and type of network, environmental considerations, security requirements and future expansion plans.

CABINETS

Cabinets are available to support servers and network equipment. Most network cabinets designed for network cabling and switches are 42U-52U high, 800mm wide and come with front cable management and centrally mounted vertical cable trays to support incoming cables.

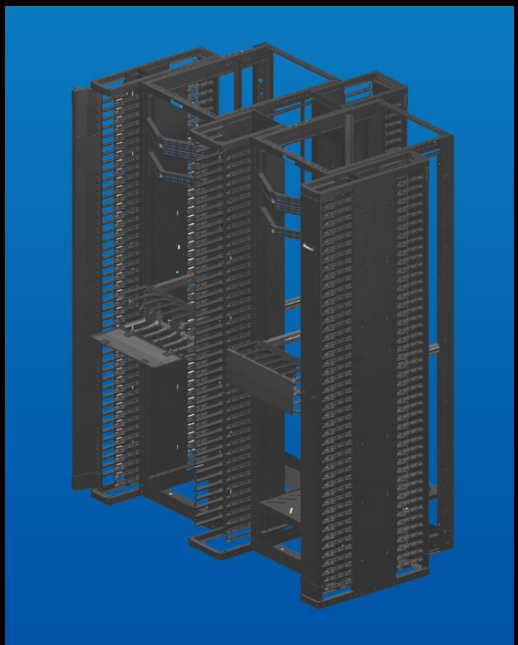
ADVANTAGES OF CABINETS:

- Enhanced security. This is arguably the most significant advantage of cabinets. Lockable front and rear doors, along with secure side panels, prevent unauthorised access to valuable network equipment, mitigating risks of tampering, theft or accidental disconnections. This is particularly crucial in public areas, shared office spaces or data centres where physical security is paramount.

- Environmental control. Cabinets offer a degree of isolation from the external environment. An example is when supporting large switches with side-to-side airflow, which often require a side mounted inlet/outlet duct to manage the airflow. Whilst these could be made for open racks, they often take space out of the vertical cable managers.

- Dust and debris protection. The enclosed nature of cabinets provides a degree of protection from dust, dirt and other airborne contaminants but the higher the airflow, the lower the protection.

- Cable management. Modern cabinets are often designed with sophisticated cable management features including integrated cable trays, vertical and horizontal managers, and routing channels. This facilitates neat and organised cabling, reducing clutter, improving airflow and making



'Where frequent equipment changes, additions and troubleshooting are common, the easy accessibility of open racks is invaluable.'

troubleshooting and future additions easier. Well managed cables also reduce the risk of accidental disconnections.

- Noise reduction. Specialist sound attenuated cabinets are available for use in spaces where noise needs to be minimised, such as an open office where there is not space for a comms room to be built.

- Aesthetics. For visible installations, cabinets present a more organised and professional appearance compared to open racks, concealing the often complex tangle of cables and equipment.

DISADVANTAGES OF CABINETS:

- Higher cost. Generally, cabinets are more expensive than open racks, especially those with advanced features like integrated cooling or robust security mechanisms.

- Heat dissipation challenges. While offering environmental control, poor airflow design or inadequate cooling solutions within a cabinet can result in hotspots and overheating, particularly in high density deployments. Careful planning and appropriate cooling are essential.

- Limited accessibility for frequent changes. While removable panels offer access, this is often limited when cabinets are bayed together, making frequent changes or additions to equipment within a cabinet more difficult and time consuming compared to an open rack.

- Fixed space for vertical cable management. In an 800mm wide rack, the space to the outer sides of the vertical rails is usually around 100mm. If a customer wants to use the cabinets to support larger network cables, such as Category 6A, it may be possible to fill only 50 per cent of the racks before the side capacity is reached.

- Weight and footprint: Cabinets are heavier and have a larger physical footprint than most open racks, which can be a consideration in space constrained environments or when equipment needs to be moved frequently.

OPEN RACKS

Open racks are framework structures that provide mounting points for network equipment without enclosing them. They are typically used with vertical cable managers which are available in various widths and depths.

ADVANTAGES OF OPEN RACKS:

- Cost effective. Open racks are more affordable than cabinets, making them an attractive option for budget conscious projects.

- Easy accessibility. Equipment mounted on open racks is easily accessible from all sides. This simplifies installation, upgrades, troubleshooting and maintenance tasks,

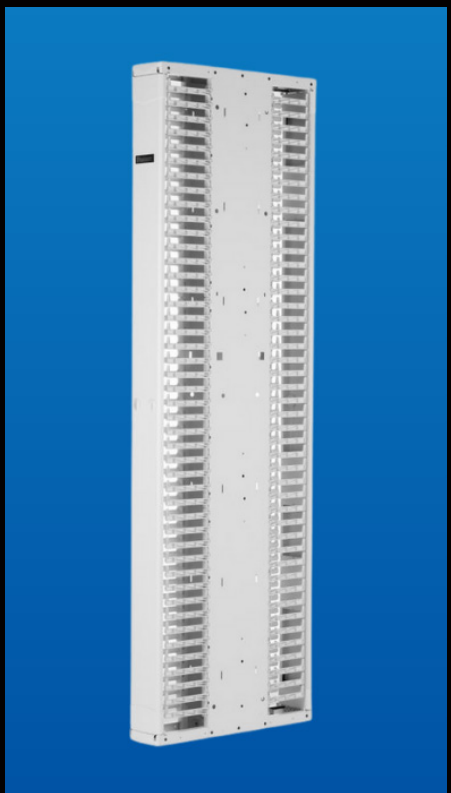
‘For visible installations, cabinets present a more organised and professional appearance compared to open racks, concealing the often complex tangle of cables and equipment.’

as technicians have unobstructed access to components, ports and cabling. This is a major advantage in environments where frequent changes are anticipated.

- Space and weight efficiency. Open racks have a smaller footprint and are lighter than cabinets, making them ideal for environments where space is at a premium or where equipment needs to be moved or reconfigured frequently.

- Simplicity of installation. Installing equipment on an open rack is generally straightforward and quick, requiring fewer steps compared to cabinet installations.

- Scalability. Adding or removing equipment from an open rack is simple, allowing for easy scalability as network requirements evolve.



DISADVANTAGES OF OPEN RACKS:

- Lack of security. This is the most prominent drawback. Open racks offer no physical security, leaving equipment vulnerable to accidental damage, tampering or theft. This makes them unsuitable for public areas or unsecured data centres.

- No environmental protection. Equipment in open racks is exposed to dust, dirt and other environmental contaminants. This can lead to increased maintenance, potential equipment damage and a shorter lifespan.

- Noise exposure. It’s not possible to get sound attenuated open racks.

- Aesthetics and cable clutter. Without the enclosed nature of a cabinet, open racks can appear messy and disorganised, especially if cable management is not meticulously maintained.

- Limited support for heavy equipment. 2U racks can’t support heavier and deeper equipment which requires mounting on front and rear rails. However, 4-post racks can support this although the position

of the rear rails is often not adjustable as they are in a cabinet.

WHEN TO CHOOSE CABINETS:

- Data centres and server rooms. High density deployments, critical infrastructure and where there is a need for stringent security and environmental control make cabinets the preferred choice.
- Public or shared spaces. Offices, educational institutions or retail environments, where physical security is paramount to prevent unauthorised access or tampering.
- Aesthetic reasons. When a neat, professional appearance is desired for visible network installations.
- High value equipment. For protecting expensive or mission critical network devices.

WHEN TO CHOOSE OPEN RACKS:

- Network closets or secure wiring rooms. In secure, climate controlled environments where physical security is already managed at the room level, open racks offer cost savings and superior accessibility.
- Testing and development labs. Where frequent equipment changes, additions and troubleshooting are common, the easy accessibility of open racks is invaluable.
- Small offices or home networks. For basic set-ups where budget is a primary concern and the environmental conditions are benign.
- Temporary deployments. For short-term projects or events where quick set-up and teardown are necessary.
- For large scale cabling distribution. In situations where the primary function is cable termination and patching and with minimal active equipment, open racks can be highly efficient.

BEST OF BOTH

It's also worth noting that a hybrid approach is very common. A data centre might use cabinets for servers and core switches requiring high security and cooling, while using open racks for patch panels and distribution switches in a dedicated network room. ■



NICK TAYLOR

Nick Taylor started in this industry in 1997, holding various roles and spending most of his career working for installers, as well as six years at a leading manufacturer. Since January 2023 he has been the technical sales director at Networks Centre. He's a BICSI Registered Communications Distribution Designer (RCDD), an active member of various industry standards bodies and many customers see him as a trusted advisor to help solve their issues.

Back to basics with

Welcome to Knowledge Bank, where tech is demystified. To kick things off Carrie Goetz tackles the big question – what exactly is artificial intelligence (AI) and why should you care?

What exactly is AI? In simplistic terms, AI is the production of a result based on fixed information. It rather like being a parent – you act on the best information you have at the time when you have to act.

RESPONSE MECHANISM

That body of information in the AI world is called a language model. AI uses language models to formulate responses. That response could be words, an image, a predetermined answer etc.

Large language models (LLMs) are vast amounts of data processed to understand, generate and process humanlike language in context. Small language models (SLMs) are designed to operate over smaller datasets or datasets that are funnelled down out of larger models. You often see SLMs in mobile applications since they require significantly lower power than LLMs. While the performance is faster, the limitations of a smaller model exist. Recurrent neural networks (RNNs) work by using previous inputs in memory. These were used in early chatbots but have been largely replaced by transformers.

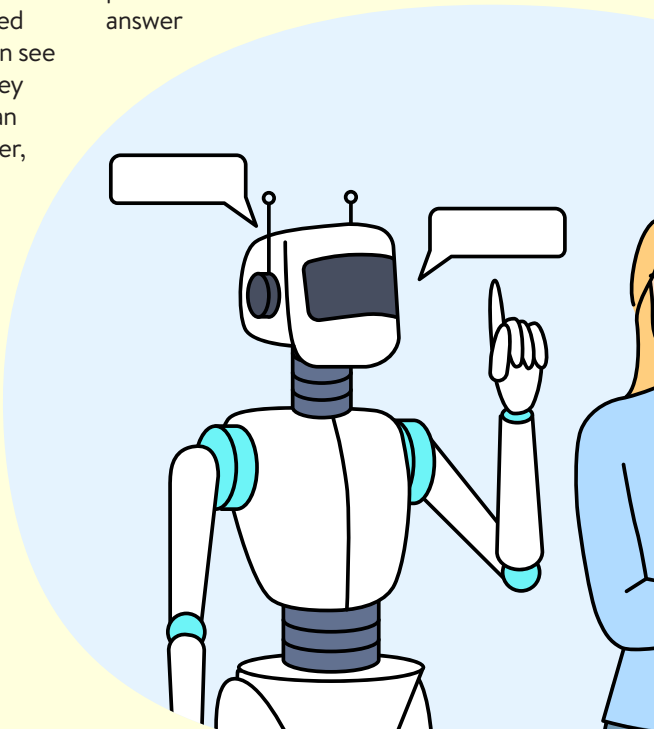
THE RIGHT RESULT

Transformers allow a computer to process a string of words from language models and weigh their importance relative to other words. In other words, find a result set.

Generated pretrained transformers (GPTs) use LLMs that are fine-tuned and task oriented to decode information. Outputs could be generation, conversation, translation etc. Bidirectional encoder representations from transformers (BERT) allow that same AI generation but it works bidirectionally using coding and decoding.

Due to the bidirectional nature, BERT is useful for concise question answering and masks unnecessary words. To compare the two, if you were to ask each, 'The capital of England is____.' BERT processes capital, England and knows enough to return a single word answer – London.

GPT would comb through responses and provide a verbose answer



AI



referencing England, as it lacks the training to make one word predictions based on masking other words. You would get a few sentences or paragraphs about England, as the GPT model is trained to provide conversational style responses. For instance, 'London, a city known for its vast culture and history, houses the monarchy and serves as the capital of England.' Both are technically correct.

ALL THINGS AREN'T EQUAL

From a facilities perspective, what we do hear about AI is that it is power hungry, taxes cooling systems and will drive investments into liquid cooling. But that is like saying all cars are gas guzzlers. Not all cars are created equally. Some don't even burn gas.

If we examine the amount of power required to do various tasks in AI, we see that there is a wide range. The type and size of processor will also have an impact on power requirements.

In the chart below, we see the average power per task in Watt hours (Wh) for some different use cases. If a company simply wants to rollout intelligent chatbots, the power requirements may not require any facilities retrofits. Generative AI applications carry significantly higher power requirements. From a practicality standpoint, higher power means increased demands to cooling and capacity planning matters.

WISE MOVE

AI will change many environments. It is also important to note that there are 17,000 AI companies worldwide with 12,000 of them in the US. There will, undoubtedly, be several rounds of mergers, acquisitions and bankruptcies before the market for AI stabilises. I believe it is also clear that we, as consumers, have a responsibility to use AI wisely, when needed, and without reckless abandon – no matter how cute Theo Van is as a baby. ■



AI use case	Energy per task (Wh)
Web search	0.0004Wh
Predictive analytics	0.45Wh
Automation and process optimisation	1.8Wh
Cybersecurity and threat detection	6.3Wh (per minute)
Personalised user experiences	0.9Wh
Healthcare diagnostics	67.5Wh (per scan)
NLP and conversational AI	1.35Wh (per response)
Computer vision and image recognition	9Wh (per image)
Autonomous systems and robotics	27Wh (per minute)
Generative AI and content creation	18Wh (per task)
Energy management and sustainability	9Wh (per hour)

BCS makes senior appointment to support European expansion


Cezary Zieba

BCS has appointed Cezary Zieba as its country manager for Poland. Zieba will take up the role with a remit to manage both BCS' existing local clients and its ongoing expansion in Poland. He will also provide support for the business in the broader Central and Eastern European region and with specific projects in France, Romania and the Middle East.

Zieba has a strong engineering background and over 20 years of leadership experience in a broad range of science related and industry services sectors. He was CEO and general manager for Johnson Matthey Battery Systems and held senior roles at Honeywell, 3M and SGS.

Commenting in his decision to join BCS, Zieba said, 'BCS has an open and supportive culture alongside a determination and passion to deliver exceptional projects in this exciting marketplace – which is a rare combination. There are huge opportunities for the data centre sector in the Central and Eastern European region, which is starting to transform its infrastructure as it moves from fossil fuels to embrace renewable power.'

Emtelle deepens partnership with GoFibre to deliver more Project Gigabit connectivity to Scotland

Emtelle has deepened its strategic partnership with GoFibre, following GoFibre's most recent Project Gigabit contract win. The collaboration will see Emtelle supply duct, sub-duct and optical fibre infrastructure for new full fibre networks to enable fibre to the premises (FTTP) speeds of up to 10Gb/s.


Gavin Faulds

Emtelle has partnered with GoFibre on its commercial network build and to deliver previous contracts under Project Gigabit, which prioritise areas that are not commercially viable for broadband providers. Together GoFibre's network now covers more than 120,000 premises across over 30 hard to reach areas in both Scotland and the North of England.

Gavin Faulds, chief commercial officer at Emtelle Group, said, 'We are delighted to be strengthening our partnership with GoFibre in order to bring full fibre connectivity to more than 60,000 premises in Scotland. We firmly believe Scotland needs a first class digital network across every town and village to reduce the digital divide and boost economic growth. That is why we are committed to improving its networks, especially for those in rural regions who are the hardest to reach.'

Mayflex creates strategic distribution agreement with Schleifenbauer to enhance Elevate offering

Mayflex has formed a distribution agreement with Schleifenbauer, marking a significant step forward for Mayflex's Elevate brand. Schleifenbauer offers a suite of innovative intelligent power distribution units (iPDUs) and energy management solutions that are designed and manufactured in Europe. The collaboration will focus on positioning Schleifenbauer's products as a core part of Elevate's data centre infrastructure portfolio.


Simon Jacobs

Simon Jacobs, product manager at Mayflex, commented, 'We're excited to welcome Schleifenbauer as a technology partner to our Elevate brand. Its intelligent power solutions are a perfect fit for our growing data centre portfolio. The combination of European manufacturing, rapid lead times and advanced features like hot-swappable modules and free energy management software makes this a compelling proposition for our customers.'

CHANNEL UPDATE IN BRIEF

Socomec Group has launched its Metering & Monitoring Integrator (M2i) partner programme, which is aimed at accelerating organisations' modernisation and compliance efforts in line with the European Union's Energy Efficiency Directive (EED).

Kao Data has appointed Clinton Hasell as chief business officer to lead UK and European site development, core business operations and enterprise level reporting. Bringing 30 years of commercial and operational expertise from senior roles at Global Switch, Interxion and Digital Realty, Hasell will drive process optimisation, data driven decision making and the strategic technology deployments that underpin Kao Data's expansion.

Advantech has appointed Arcobel as a channel partner to further strengthen its position in the European market.

Vertiv has appointed Wei Shen as president of Greater China. Shen joins Vertiv from Gates Corporation and prior to that he held several leadership positions at Eaton Electrical.

Cameron Thompson has been promoted to head of utilities at BCS with overall responsibility for providing further support to the company's existing and new critical infrastructure clients. He joined BCS earlier this year as team lead and has previously held senior roles at Ethical Power and Cast Consultancy.

Ready, willing and able

While offering unprecedented possibilities and opportunities, the artificial intelligence (AI) age also presents significant power and cooling challenges, as Paul Mellon of Stellium Datacenters explains

AI and machine learning bring many exciting possibilities within data centres. These include maximising operational efficiencies, while supporting and accelerating the drive towards predictive services, capacity management and predictive failure. AI will assist data centre teams in focusing on predictive elements of maintenance and operations.

TWICE AS NICE

With this in mind, the slow growth of digital twins in the last few years twins will most likely take off. The concept of digital twins lends itself to the more dynamic environments created by AI deployments in data halls and will become a vital tool for operators, allowing them to monitor and manage the temperature in their high performance computing environments more effectively.

However, from a hosting perspective, the high performance computing power densities to support AI will continue to create considerable challenges for many data centres when addressing the significant power and cooling requirements involved. Increasing rack power densities are making proximity to power even more important. This will continue to result in many more data centres being located well away from the traditional metro areas such as Frankfurt, London, Amsterdam, Paris and Dublin (FLAP-D).



LOCATION DEVICE

Location is paramount in terms of ensuring available power to support high performance computing at scale. With the current timescales to scale power from, say, 10MW to 50MW being several years, it is perhaps more logical and practical to relocate data centres to areas where power at scale is more readily available.

Adding some context, a 100 rack deployment at 100kW per rack equates to 10MW. That used to be the typical size of a data centre. However, hyperscale high performance computing deployments are now planning for 100MW plus. This level of power is simply unavailable in commercial business parks, which are typically constrained to 33kV, and where the vast majority of data centres are still located. These can only support power densities of 300W per m^2 and high performance computing will soon require power densities of 3000-6000W per m^2.



MOVING ON UP

Such a high level of power can only be accessed in industrial campuses, which is why, for example, we have seen in the UK the migration of hyperscalers to redundant power stations – such as in Didcot and Leeds – to facilitate access to power at 100MW scale and above. This trend will continue and extend to the connections to national grid at points from 66kV and above.

Looking ahead, small modular reactors (SMRs) could well be an additional source of low carbon supply as data centres strive to address the energy required for AI workloads. These units originated in the USA in modules of 20-30MW and the hyperscale community has at least embraced the concept of deploying them.

Time will tell in Europe, but as we accelerate towards the goal of zero carbon it's likely we will need to adopt SMRs alongside all other available power resources including, of course, renewables such as solar and wind power. By incorporating sustainable carbon free energy solutions, data centres can contribute to a greener energy grid while enhancing their own sustainability credentials.

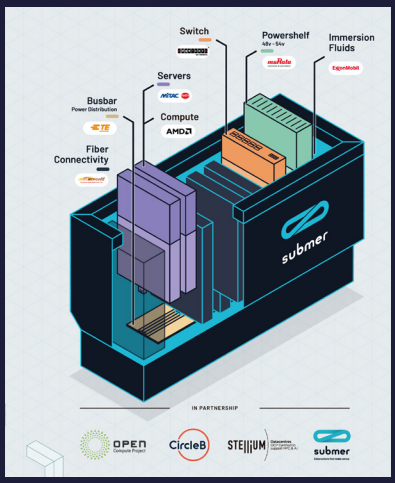
COOLING CHOICES

In the very short-term, liquid cooling has provided a bridge to access high performance computing cooling. This enables off the shelf solutions for the hyperscalers and major AI vendors at rack

'Today only about seven per cent of the UK data centre community utilises liquid cooling. These are mostly designed to accommodate racks operating at a power density up to 20kW.'

levels up to 150kW. But with liquid cooling topping out at 200kW per rack there are already demands for much higher rack power levels on the horizon. This means other cooling technologies such as refrigerated gas will be needed for direct to chip cooling.

This does not negate the use of immersion liquid cooling in the future but the market has currently gravitated to the solution which keeps products, people and processes still relevant in the operating lifecycle of the deployment. In time immersion cooling will evolve into a product that will be more favourable to deployment in a broader range of data centre environments. Today, however, it is the preserve of those with purpose built facilities designed for immersion cooling or the very few within the existing data centre pool that, with significant investment, can be adapted.



STRENGTH IN NUMBERS

Putting things into perspective, today only about seven per cent of the UK data centre community utilises liquid cooling. These are mostly designed to accommodate racks operating at a power density up to 20kW.

The chilled water produced to cool these racks generally operates at 18°C flow and 28°C return employing computer room air conditioning (CRAC) units or fan walls to cool the rack using forced air. The remaining 93 per cent of UK data centres are mostly cooled by indirect cooled air. This method has a rack cooling capacity of 20kW. This approach does not use chilled water but a combination of adiabatic and refrigerated cooling using compressors. It has proven itself to be very efficient in delivering a PUE of 1.2.

However, to cool racks beyond these capacities requires other means. Air just cannot move enough heat away from the IT surface by itself. Hence chilled water in the form of rear door rack cooling all the way to direct to chip cooling. But this represents a significant engineering challenge and the logistics involved will prove to be a step too far for many legacy facilities. Much less data hall space is required but considerably more external engineering space is needed to accommodate the extra plant.

WORKING TOGETHER

Standardisation and industry collaboration among technology vendors is already paying handsome dividends. For example, not too long ago a data centre, albeit



a fairly small one, might be a cluster of 50-100 racks with a combined IT load of 100kW. A single rack can now accommodate 100kW in normal chilled water cooling and this scales to 250kW with immersive cooling. These developments represent giant steps forward in terms of efficiency.

The Open Compute Project (OCP) has been at the centre of innovation, ensuring collaborative research and development is undertaken at such scale. It has short circuited the development and standardisation process from decades to years – and sometimes months. What used to be the preserve of a small number of mainframe computers, high power density and cooling is now readily available at all levels in the data centre community.

OCP Ready certification is therefore likely to gather momentum amongst operators as the demand for AI-enabled applications continues to grow at scale. This is not a tick box exercise. Certification entails colocation data centres working with the OCP to achieve compliance against rigorous criteria, while demonstrating an ongoing commitment to continuous improvement.

PLAN AHEAD

While offering many benefits, the unprecedented power densities being fuelled by demand for AI and machine learning have far reaching consequences for data centre operators. Careful planning is essential to ensure both sufficient power availability and optimised cooling environments are deployable at the right time to scale and can future proof these increasingly demanding workloads. The right choice of cooling technology will be critical to ensuring the considerable investments being made have longevity. ■



PAUL MELLON

Paul Mellon is operations director at Stellium Datacenters. He has more than 25 years' experience of facilities management in mission critical environments, with considerable experience in the design, implementation and operation of large scale data centres in Ireland and Europe.

Straight out of the box

Mark Yeeles of Schneider Electric explores the vital role of prefabricated data centres in an artificial intelligence (AI) focused future

The World Economic Forum reports that AI is already helping companies reduce energy use by up to 60 per cent. As the use of AI technologies intensifies, data centres are redefining how they operate to keep pace with the ever-evolving AI landscape. As such, AI continues to revolutionise our world and it is driving an unprecedented surge in demand.

TOP DRAW

When we think about AI in data centres, it is clear that it is changing the way we build them. As such, prefabricated data centre solutions are solving challenges across the data centre landscape. Prefabricated data centre solutions are modular, pre-engineered solutions that can be rapidly deployed to meet the growing demands of AI-driven workloads. These solutions offer scalability, efficiency and speed, allowing data centre providers to expand their infrastructure without the lengthy construction timelines of traditional data centres.

As computational power and data processing needs skyrocket, prefabricated solutions have emerged as a top choice because of their ability to deliver high performance with reduced costs and positive environmental impacts. By enabling faster go-to-market capabilities and flexible designs, they are becoming a critical asset for data centres and their clients to stay competitive in the AI era.

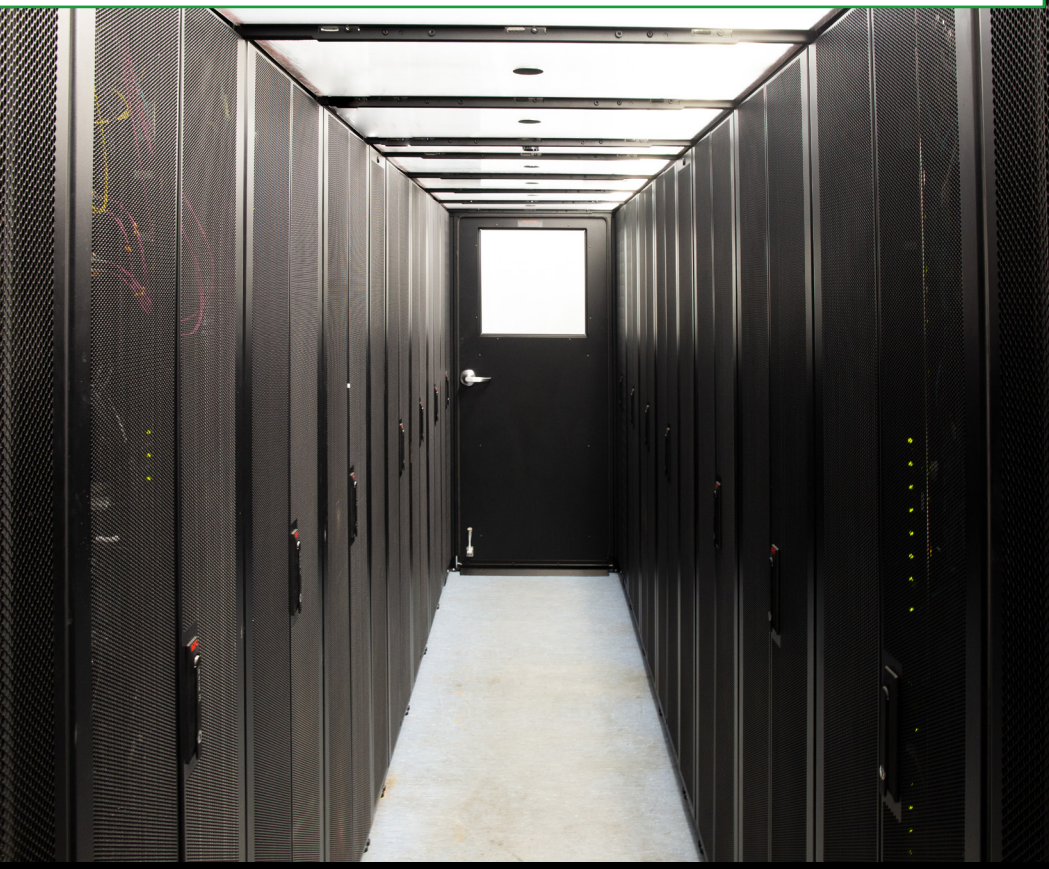
With the explosive market growth of modular solutions, data centres are unlocking a new world of exciting benefits that drive efficiency, scalability and innovation like never before.

FAST LANE

One of the top benefits of going modular is the speed of installation. Modular units can be brought online in as little as a few months, compared to one or two years for a stick-built data centre. In fact, it generally takes 30 per cent less time for modular data centre deployment, making prefabricated solutions a game changer in the fast-paced world of data centre construction, where procuring more data centre capacity has never been more urgent.

Compass Datacenters, for example, is leveraging prefabricated infrastructure to accelerate its time to market. By opting for innovative pre-assembled solutions instead of traditional ground-up construction, the operator has significantly reduced deployment timelines, enabling faster operations to meet increasing customer demand.

Prefabricated data centres can be scaled-up as needs grow. Hyperscale clients may opt for prefabricated modular solutions when deploying data centres of 10MW or greater, utilising designs that feature repeatable modules for electrical rooms, cooling spaces and more.



EFFICIENCY AND COST

Data centres built with standardised designs and pre-engineered components achieve more consistent performance across deployments, minimising the variability and unpredictability often associated with traditional construction. Prefabricated data centres deliver optimised performance right out of the box, providing more predictable cooling capabilities and energy usage. In fact, prefabricated data centres equipped with chilled water and free cooling systems can achieve a Power Usage Effectiveness (PUE) rating of less than 1.5 – setting a new standard for energy efficiency.

What's more, with pre-engineered designs and components, these solutions minimise unexpected expenses associated with traditional construction, such as on-site delays and material overruns. Factory assembly allows for accurate cost estimates and reduces costly modifications during deployment. Moreover, predictable energy efficiency and operational performance allow operators to forecast long-term expenses with confidence, supporting better budget planning, more accurate return on investment (ROI) analysis and a clear path for sustainable growth.

EFFICIENCY DRIVE

Prefabricated data centres offer significant sustainability benefits too, making them an environmentally responsible choice. By employing modular construction methods, these facilities generate considerably less waste compared to traditional builds, and

‘While the next chapter of technology advancements has yet to unfold, there is no doubt that prefabricated data centres will be key to taking AI to new heights.’

their rightsized designs ensure optimal resource utilisation, avoiding the energy and space inefficiencies of overbuilding.

In addition, prefabricated solutions support remote monitoring and management, enabling operators to optimise energy use and cooling systems for greater efficiency. Prefabricated components also have a long lifespan – when it’s time for an upgrade they can often be disassembled and reused, reducing waste and promoting a circular economy.

Universities, hospitals, call centres and factories often face the challenge of data centre expansions encroaching on valuable building space, making it difficult to justify the associated costs. Relocating the data centre to an external location or a less critical area can be a smart financial decision, offering a win-win solution for both the chief information officer and chief financial officer.

ON THE EDGE

Processing AI workloads at the edge reduces latency and speeds-up decision making, making it perfect for businesses that require real-time insights without the need for large scale infrastructure. Modular solutions can be used for companies starting their journey into AI, supporting chatbots, sales customer relationship management (CRM) operations, e-commerce platforms and AI analytics.

Designed for rapid deployment, a high density prefabricated solution supports AI workloads by delivering powerful computing capabilities right where they are needed. It allows businesses to quickly scale



their infrastructure in edge environments to handle complex AI tasks with minimal delay and maximum efficiency, leading to lower energy consumption and reduced carbon footprints.

For large businesses with specialised AI applications, modular solutions provide custom built infrastructure that can be optimised for specific AI workloads. Whether it's tailored power, cooling or compute requirements, this flexible solution provides the infrastructure to handle demanding AI processing in decentralised edge locations. Ready to meet the most rigorous requirements, it is designed for AI training models and massive workloads.





LOOKING AHEAD

While the next chapter of technology advancements has yet to unfold, there is no doubt that prefabricated data centres will be key to taking AI to new heights. One thing remains certain – staying ahead in the ever-changing digital landscape is essential for maintaining a competitive edge. When operators can successfully integrate the power of AI workloads and ongoing advancements in modular infrastructure, they will be able to drive unprecedented levels of efficiency, scalability and security. Moreover, achieving this will position organisations to thrive, fuelling progress and paving the way for the next wave of AI innovation. ■



MARK YEELES

Mark Yeeles is vice president of Schneider Electric's Secure Power division in the UK and Ireland. He works with Schneider Electric's partner ecosystem to deliver sustainable, resilient and energy efficient data centre solutions for AI, cloud and enterprise organisations. From developing innovative strategies that decouple AI and data centre growth from power consumption, to decarbonising energy and reducing demand on the grid, Yeeles's mission is to ensure data centres act as a catalyst for the green transition, and that efficiency and sustainability remain focal points for the infrastructure systems of the future.

Elevate

Elevate: powering the infrastructure behind AI data centres.

AI is redefining the modern data centre. Elevate, an Excel Networking solution, provides the integrated infrastructure to meet bandwidth, power and efficiency challenges head-on.



At the core are high density optical fibre solutions with ultra-low loss multi-fibre push on (MPO)/very small form factor (VSFF) technology powered by Senko, enabling reliable connectivity at 400Gb/s, 800Gb/s and beyond. Intelligent power distribution units (iPDUs) and busway systems deliver up to 400A per rack, ensuring resilient power distribution for graphics processing unit (GPU) dense environments. Partnering with Sunbird and nVent, Elevate extends its offering with advanced DCIM software and precision liquid cooling, optimising efficiency in ultra-dense deployments.

Elevate accelerates deployment with its config services, offering pre-terminated fibre, pre-configured racks and rapid logistics from UK manufacturing. Designed as a holistic ecosystem, spanning connectivity, containment, power, cooling and management, Elevate – Future Faster empowers operators to build AI-ready facilities faster, smarter and more sustainably.

With Elevate, the infrastructure foundation for AI is not just possible - it's ready today.

CLICK HERE to find out more. Alternatively, call us on 0121 326 2471 or **CLICK HERE** to send an email.
www.elevate.excel-networking.com

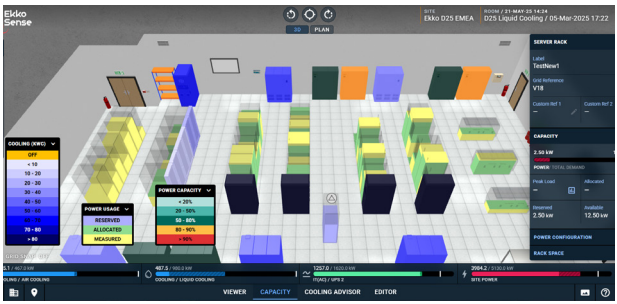
EkkoSense

EkkoSense's EkkoSoft Critical 9.0 is a major new version of its 3D visualisation and analytics data centre management software.

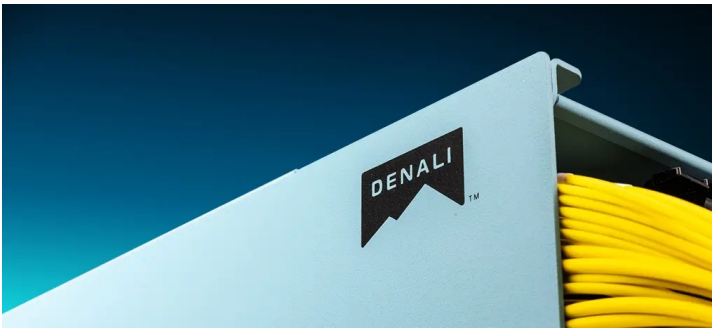
EkkoSoft Critical 9.0 unlocks support for the largest and most complex data centre rooms. It offers the optimisation of hybrid liquid and air-based cooling within the same room, and introduces advanced power management capabilities including three phase balancing and residual current monitoring.

EkkoSoft Critical 9.0 becomes the essential AI tool for operators – including hyperscalers, colocation facilities and financial firms – looking to balance legacy and digital transformation workloads with AI demand.

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



AFL

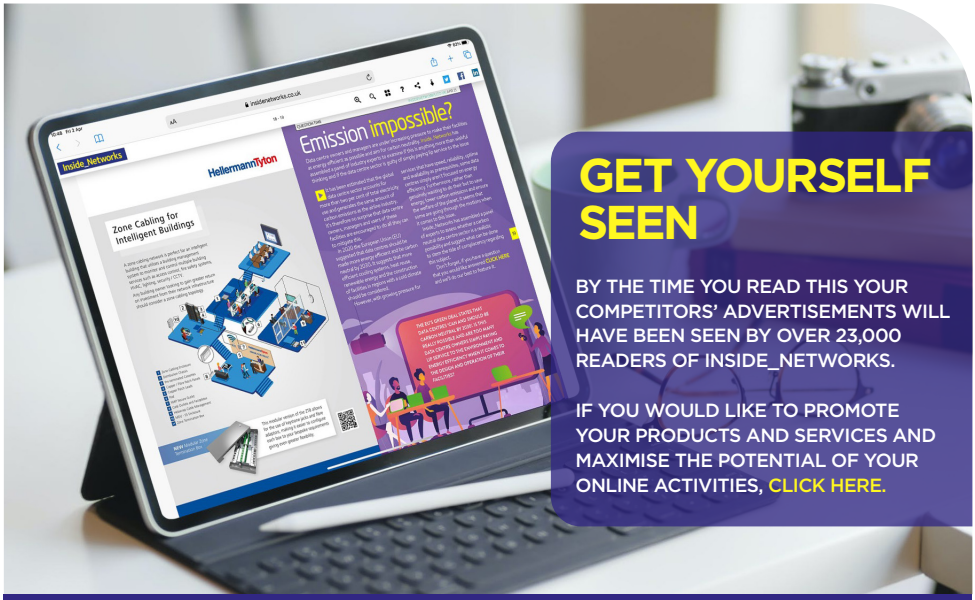


AFL's DENALI is a modular optical fibre platform specifically engineered for high growth graphics processing unit (GPU) environments with minimal infrastructure upgrades. The DENALI platform delivers leading edge data centre performance today, while positioning the facilities of tomorrow to scale with the increasing complexity and volume of hyperscale and AI workloads.

With its modular design, the DENALI platform adapts as networks grow, featuring advanced rackmount hardware, cassettes and pre-terminated customisable assemblies. This platform delivers up to 288 LC duplex ports (576-fibres) in 4RU of rack space and supports speeds from 10Gb/s to 800Gb/s and beyond.

The platform's design reduces the number of components required for installation, streamlining inventory management and reducing potential points of failure. DENALI also ensures seamless integration with existing infrastructure, minimising disruption during upgrades and expansions, while cable management solutions reduce maintenance requirements and improve long-term network reliability.

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



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On a need to know basis

Mark Pestridge of Telehouse Europe explains how a better understanding of data centres will unlock the promise of artificial intelligence (AI)

The UK government's new AI strategy places a strong emphasis on the role of data centres in driving economic growth. According to techUK, data centres currently contribute £4.7bn in gross value added (GVA) annually to the UK economy, with the potential to deliver an additional £44bn between 2025 and 2035 if capacity can grow beyond recent annual trends. Their importance is set to grow significantly as demand for AI infrastructure increases.

CLASS ACT

In recognition of this, data centres have been classified as part of the country's critical national infrastructure (CNI), ensuring they receive additional protections against risks such as cyberattacks, IT disruptions and extreme weather. This shift highlights the growing indispensability of data centres to the UK's operations both now and in the future. However, while the government pushes ahead with plans to expedite infrastructure development, public understanding poses a challenge that needs to be addressed.

67 per cent of UK adults are unaware of what data centres are, or the impact they have on their daily lives, according to research by Telehouse. While the research did reveal some awareness that data centres support digital services such as video streaming and online shopping, there remains a substantial, and concerning, knowledge gap.

The scale and scope of data centre



operations are poorly understood, as 43 per cent are unaware of the vast number of people, applications and data supported by the advanced devices housed and connected in data centres. For data centre providers, addressing this knowledge gap is crucial to securing public support and ensuring that their role in powering the digital economy is fully recognised and valued.

POSITIVE IMAGE

Public support is increasingly important, especially as the demand for AI infrastructure expands, which may cause resistance due to the additional pressure it places on resources like water and electricity. In his blueprint to turbocharge AI, the prime minister announced designated AI Growth Zones to speed-up planning for the necessary infrastructure, with the first one located in Oxfordshire. Even so, much of the publicity about the infrastructure that enables AI has, to date, focused on the negative effects on community infrastructure and utilities.

As the government acknowledges, the energy demands of data centres require constant innovation – as has always been the case. It is therefore the responsibility of the data centre industry to continue to demonstrate its ability to meet these demands sustainably. Educating the public on their role and the sustainable practices they implement will not only help to build lasting relationships with local communities but also represent a strategic investment in the future growth of the industry, helping to attract the talent necessary to sustain it.

FEELING THE BENEFITS

The economic and social benefits data centres drive are beginning to gain wider recognition. Based on International Monetary Fund (IMF) estimates, the government calculates that if the nation fully embraces AI, it can boost productivity by up to 1.5 percentage points per year, worth £47bn to the UK each year for a decade.

Alongside this, AI will enable advances across all industries. In healthcare it will lead to faster and more accurate diagnoses and the safe provision of remote treatment and care, while in financial services it will transform risk assessments, fraud detection and customer service.

There are many compelling messages to share. If annual growth in data centre supply exceeds the current 10-15 per cent, techUK estimates the sector could create more than 40,000 high paying operational roles by 2035. The US International Trade Administration estimated the AI market in the UK to be worth more than $21bn in 2023 and forecasts it to reach more than $1tn by 2035, positioning it as the third largest AI market in the world.

A GLOBAL RACE

The UK faces growing competition from Europe and East Asia, as many countries in these regions are accelerating their investments in digital infrastructure to support AI growth. The Nordic nations have also attracted significant AI investment due to their lower operational costs founded in cheaper, renewable energy and easier availability of land in sparsely populated areas. This has created good locations for AI training models and AI factories.

Investors in South Korea, on the other hand, announced in February they were planning the world's biggest data centre – a 3GW facility for AI, ultimately costing $35bn. The US also has its $500bn Stargate project, while France announced €109bn of private AI investment.

'The UK's data centre industry will face significant pressure to meet the growing demand for AI computing power across business, government and society in the next decade. To succeed, the industry must focus on gaining public support and reinforcing its role as CNI.'

DRIVING SUSTAINABILITY

The UK's data centre industry must take the lead in showcasing the significant contributions it already makes to society and the economy, and how these efforts will be further amplified through AI. Industry leaders should highlight their sustainability initiatives, such as the widespread use of renewable energy and waste heat reuse, which are already reducing environmental impact.

One such initiative, excess heat recovery, offers great potential for benefiting local communities. By capturing and redirecting the heat produced by data centres, this energy can be repurposed for district heating systems, helping to warm homes, offices, leisure centres and other buildings. This practice helps to reduce the carbon footprint of the data centres, but it also provides a sustainable and cost effective source of energy for nearby areas, promoting community resilience.

EFFICIENCY DRIVE

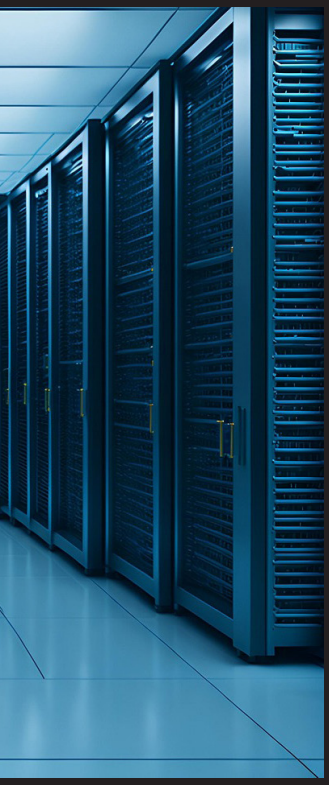
Communities should be informed about the innovative energy saving technologies being adopted by data centres, such as liquid cooling systems, and the retrofitting of existing facilities with free cooling systems to reduce energy and water usage. Techniques like hot and cold aisle containment systems improve airflow by preventing the mixing of hot and cold air, ensuring that cool air is directed where it's most needed. This not only enhances



efficiency but also lowers overall energy consumption. Additionally, economisers that use outside air for cooling further optimise resource usage.

Collectively, these innovations offer significant environmental benefits. They also drive down operational costs, demonstrating how modernisation achieves both sustainability and financial efficiency.

Data centre operators should also prioritise expanding apprenticeship programmes and training opportunities to develop the technical skills required to support the industry's growth. Initiatives like volunteering and science, technology, engineering and mathematics (STEM) workshops will strengthen ties with local communities, helping to create long-term, positive relationships.



MEETING DEMAND

The UK's data centre industry will face significant pressure to meet the growing demand for AI computing power across business, government and society in the next decade. To succeed, the industry must focus on gaining public support and reinforcing its role as CNI. By engaging with communities, including businesses, data centres can shift public perception and position themselves as powerful drivers of economic growth, which is essential to the nation's prosperity. ■



MARK PESTRIDGE

Mark Pestridge was appointed to the role of executive vice president and general manager for Telehouse Europe in April 2023, having previously held the role of senior director of customer experience since 2021. He joined the company in April 2019 as director of sales to lead the UK sales organisation. Pestridge has a solid history of developing strategic partnerships across the industry that achieve strong and consistent business performance.

Quickclicks

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

The **BCS** 2025 Summer Report asked over 3,000 data centre professionals what's changing and what's next. **CLICK HERE** to download a copy.

Databarracks has produced its Data Health Check 2025, which found that 71 per cent of organisations have experienced a cyberattack in the past year and that AI-driven cyberattacks are seen as the biggest IT resilience challenge over the next five years. **CLICK HERE** to read it.

What Should I Do If The Fusion Splicer's Battery Isn't Charging Properly? is the question answered in a blog by **Cable Management Warehouse (CMW).** **CLICK HERE** to read it.



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Ahead Of The Game: Why It's Time For IP To Think Bigger With AI is a report from **RWS.**
CLICK HERE to download a copy.

ISC2 has published a report following research it conducted with global cybersecurity professionals to better understand the impact of AI both in terms of operations and the workforce.
CLICK HERE to read it.

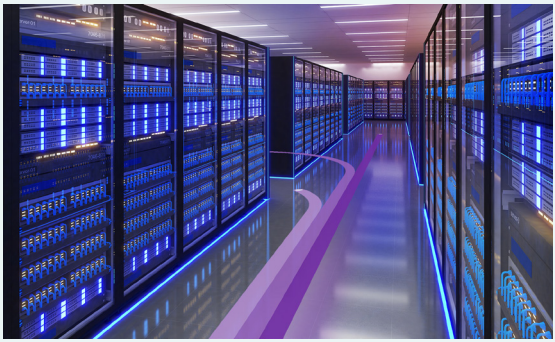


The Importance Of Power Resilience For All Businesses is a blog by **Datum.**
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G.654.E Fibre Cable – A Game Changer For The Future Of Long-Distance Networks is a white paper from **Acome Group** and **Sumitomo Electric.**
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Eclipse Power Optimise and Carlton Power team-up for Future Point Manchester

Eclipse Power Optimise and Carlton Power have signed a joint development agreement for the Future Point Manchester project. This energy park development in Carrington, Greater Manchester, has been conceived as home to one of Europe's biggest data centres, creating local jobs and aligning with the government's AI Growth Zone plans.



Future Point Manchester has the potential to unlock £10.7bn of private investment during development and to contribute more than £1.8bn to the UK each year once operating. Moreover, once complete it will deliver over 3,000 data enabled jobs.

Future Point Manchester is colocating major low carbon power production with large demand users, linked via a private electricity network. The park's 1.4GW bilateral grid connection is scheduled for energisation in 2028 with no upstream reinforcement requirements. It will give Future Point Manchester the energy capacity to host the data centre. In addition, more than 500MW of on-site low carbon generation will add essential power resilience.

University of Twente modernises its data centre infrastructure with Aginode and A2 Networks

The University of Twente has completed a major upgrade of its data centre infrastructure to meet growing demands for high performance computing, greater energy efficiency and long-term scalability.



Partnering with Aginode and A2 Networks, it aimed to replace outdated systems, simplify complex cabling routes and future proof the infrastructure.

Aginode supplied the necessary cabling and components, resulting in a new, flexible structured cabling infrastructure, where active network equipment and data panels can now be easily patched.

The project involved close collaboration across university departments and industry partners. The result is a high performance, energy efficient infrastructure designed to serve the University of Twente's needs for the next 15-20 years.

Aligned Data Centers expands in Ohio with new AI campus



Aligned Data Centers is expanding in Ohio with the development of its new data centre campus inside the Conesville Industrial Park. Aligned will develop a 197-acre parcel adjacent to the former AEP Conesville Power Plant. This development will revitalise the legacy brownfield site and spur substantial commercial development, converting it into a powerful economic epicentre for Coshocton County and the State of Ohio.

This phased development is anticipated to generate thousands of construction jobs and hundreds of high quality, long-term operational roles, significantly boosting the local economy. Data centres in Ohio contribute significantly to local economies, generating substantial tax revenues that support public services and local infrastructure improvements.

Aligned is also committed to local community engagement. This includes partnerships that support educational programs and environmental initiatives, ensuring a positive and lasting impact in Coshocton County and the surrounding areas.

PROJECTS & CONTRACTS IN BRIEF

Xela Energy has received full planning permission for a 5MW solar farm that will deliver locally generated renewable electricity directly to IBM's Hursley campus near Winchester. The project is the first of its kind in the UK to connect a data centre facility to a dedicated solar installation via a private wire.

Nokia has deployed a high speed optical transport backbone network for MX Fiber, delivering reliable, high capacity connectivity across the south-east of Mexico, one of the country's most populous yet underserved regions. Customers across Chiapas, Tabasco and Quintana Roo, and soon Campeche and Veracruz, will benefit from faster internet, enhanced cloud access and support for data intensive applications in areas that have long lacked sufficient infrastructure.

Totalmobile has signed a new five year agreement with Coates, Australia's leading equipment hire and solutions provider, to modernise how branch, workshop, field and support teams operate across the country.

HGF has teamed up with Simpson Associates to modernise its data estate through a comprehensive Microsoft Fabric implementation as well as the development of Microsoft Power BI dashboards.

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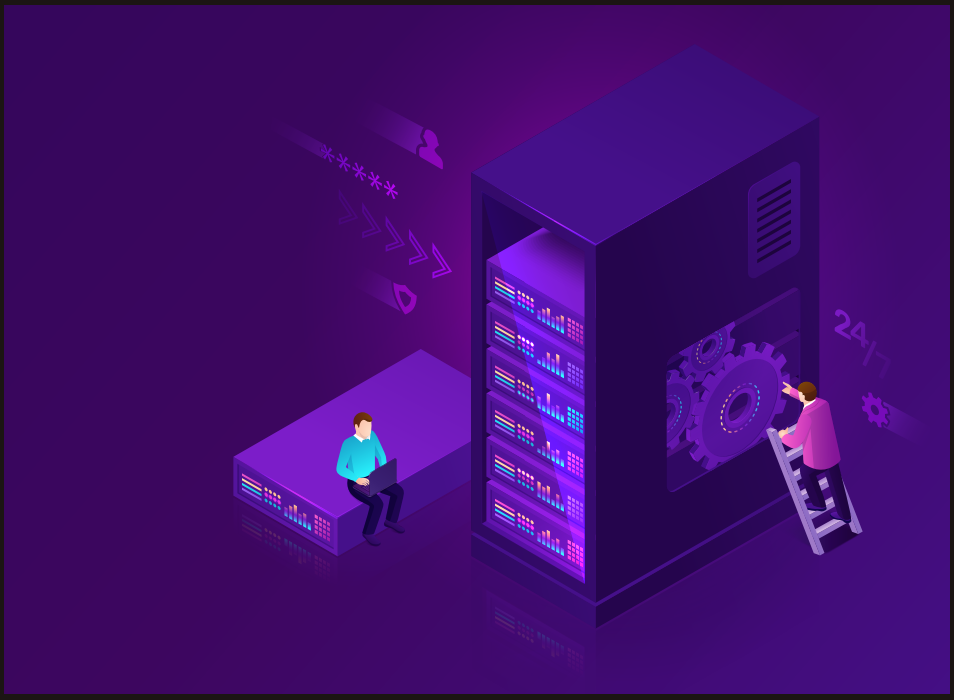




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Size and scale

Recent decisions by Amazon and Microsoft to reduce their lease commitments across Europe and the US have sparked debate over whether this signals a broader decline in demand for data centre capacity. Chris Coward of BCS explores how these moves may reshape the future landscape of the data centre industry



Amazon and Microsoft have both announced that they are going to scale back their data centre lease commitments across Europe and the US, raising questions about whether this is the start of the decline in demand for data centre capacity, particularly that driven by artificial intelligence (AI). However, if we look closely, nothing in these decisions indicates a retreat from AI itself, with Microsoft recently reconfirming its plans to spend about $80bn on AI-enabled data centres through the end of its 2025 fiscal year.

STRATEGIC DECISION

What we are seeing is a change in strategy to make AI profitable by shifting the cost in non-obvious ways on to consumers, with companies reassessing infrastructure investments to align with actual and projected AI workloads, avoiding overcapacity. In the short-term the decisions by both tech giants may ease the pressure, releasing some spare capacity on the market where our current infrastructure simply can't keep up.

Certainly, other tech giants are intensifying their data centre investment.

Google plans to increase capital expenditure to $75bn in 2025 – more than Wall Street expected at $58bn and significantly above 2024's $52.5bn capital expenditure – primarily for data centres, servers and networking to meet growing AI and cloud service demands. Meanwhile, Meta has announced a $65bn investment in AI infrastructure for 2025.

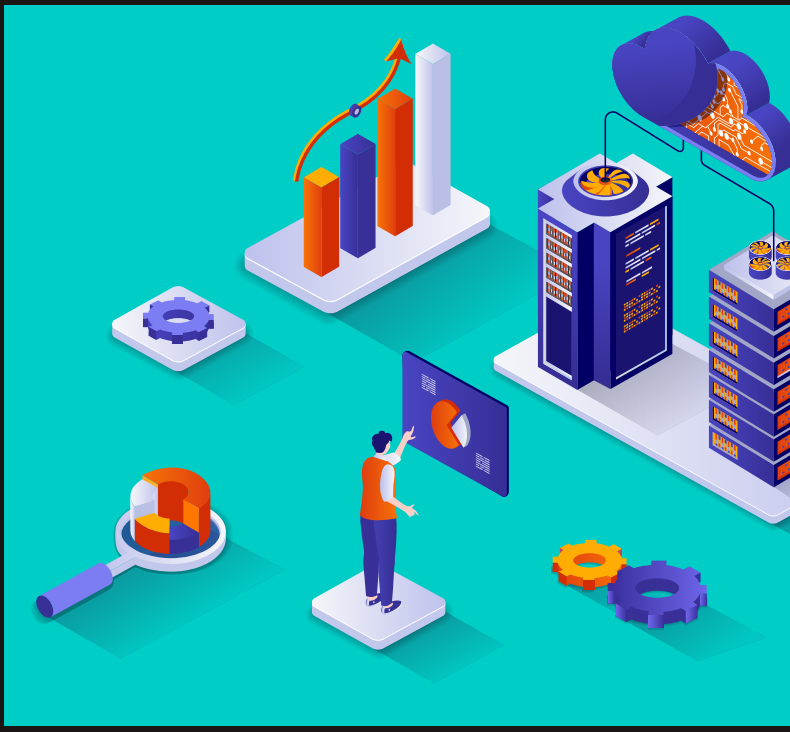
CHANGE BRINGS OPPORTUNITY

With any change comes opportunity and we may well see colocation companies absorb this capacity, as well as smaller cloud or AI firms seeing this as a chance to negotiate better terms or take over prime locations. With prime real estate opening up in key areas, property developers or alternative tech tenants could step in, particularly in Ireland, The Netherlands, Sweden and Central Europe, which are particularly hot markets. With governments and regulators in Europe pushing data sovereignty, we may also see local cloud players having more room to grow.

With Microsoft cancelling training workloads and OpenAI shifting some workloads to Oracle, there's demand for specialised AI data centres that are graphics processing unit (GPU) heavy, high throughput with high bandwidth interconnects and edge data centres that support latency sensitive AI applications such as autonomous systems and augmented reality/virtual reality (AR/VR). We might also see an impact for mergers and acquisitions and strategic partnerships, with private equity taking up distressed or delayed projects. Mid-tier cloud companies may look to partner with telcos or infrastructure funds to secure scale without building from scratch.

POWER ISSUE

We should not be distracted from the real core challenge for the sector – sustainable power availability. We have been aware of the problem for years but now it is finally coming to roost and is the single most important factor driving the market and changing the landscape. It is directly



impacting where data centres can be built, how fast they can be deployed and how much they cost to operate and maintain.

As a result, regions with limited grid capacity or long lead times for electrical upgrades are becoming less attractive and areas with cheaper renewable power are seeing increased investment. The substantial energy consumption of AI data centres is prompting companies to put sustainability and energy efficiency at the core of their expansion plans. One of the big issues Microsoft and others have faced is energy consumption and regulatory scrutiny over sustainability.

'We should not be distracted from the real core challenge for the sector – sustainable power availability. We have been aware of the problem for years but now it is finally coming to roost and is the single most important factor driving the market and changing the landscape.'



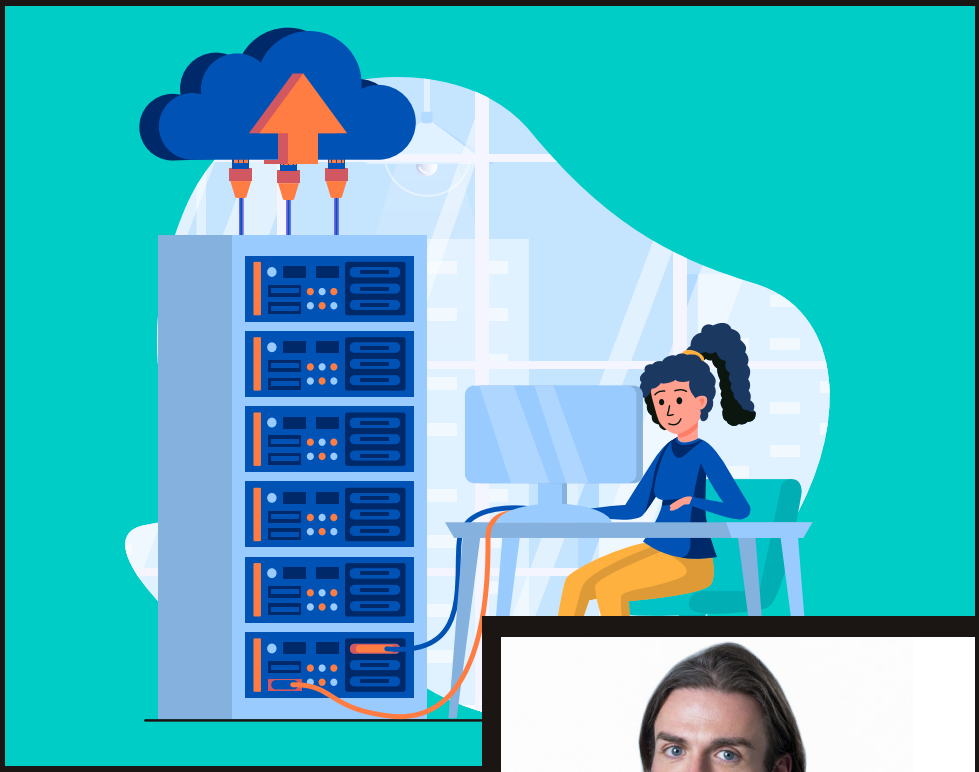
This is an opportunity for data centres with green credentials, such as renewables, advanced cooling and/or heat recycling, to stand out. Green energy solutions such as solar, wind or hydro that can reduce long-term operating costs and carbon emissions are increasingly appealing. Also, start-ups or companies offering modular, off-grid or low impact data centre tech may capitalise on this. Staying ahead of tightening environmental regulations to avoid penalties and future proof operations is increasingly key. Investors must now consider energy availability and policy as central to any data centre investment strategy.

UNIQUE POSITION

The data centre sector is in an unusual, if not unique, position. Unlike most industries we have the demand and the capital investment but we don't have the infrastructure or power. This means we need to look at doing things differently and working with what we do have. This may mean building smaller data centres that focus on scalability so we can add to them as and when the infrastructure catches-up. Currently we are seeing a sweet spot at facilities between 10-20MW, which seems to be possible with the current grid availability. Sometimes pragmatism is the way forward.

This type of facility lends itself well to becoming integrated within a local community where initiatives such as waste heat reuse can be implemented to provide cost effective and green heating for entire neighbourhoods and help reduce energy bills. In addition, buildings can heat greenhouses, where community members get the opportunity to grow their own food. Investment in local renewable energy sources can also enable operators to share power generation with the community where feasible.

Empty buildings, such as unused



retail sites and low quality commercial or industrial spaces, are an increasingly common sight in cities. With innovative thinking these buildings can be converted into data centres, leaving the established cityscape unchanged.

NOTABLE SHIFT

The scale back by Amazon, Microsoft and others does signal another notable shift in the market landscape. As demand for colocation rises and hyperscalers adjust their strategies, we're seeing new dynamics emerge such as an increased need for real estate and redevelopment, the entry of fresh market players and a clear acceleration in the refurbishment and repurposing of existing assets. This is an exciting period of growth, innovation and expansion in a fast evolving market. ■



CHRIS COWARD

Chris Coward is director of project management at BCS. His career includes roles across the UK and mainland Europe, predominantly working for leading wholesale data centre providers. The projects he has worked on have involved complex new build data centre campuses, high performance computing, IT migration, mechanical and electrical upgrades, diesel generator installations and white space fitouts.

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