DIGITALISATION WORLD

DW

MODERN ENTERPRISE IT - FROM THE EDGE TO THE CORE TO THE CLOUD

STElllIUM) The Data Meridian

NCL-IX GATEWAY TO THE DATA MERIDIAN

Stellium Banks on Schneider Electric Galaxy UPS™

for trans-Atlantic Data Reliability.

Life Is On | Schneider Electric

AIOps | Apps + DevOps | Artificial Intelligence | Big Data + Analytics | Cloud + MS
DC Facilities + Colo Digital Business | IT Management + Service | Networks + Telecoms
Open Source | Security + Compliance | Storage + Servers

VIEWPOINT

By Phil Alsop, Editor

Cloud momentum continues

REPORTS of the demise of on-premises hardware and software solutions might well have been somewhat exaggerated, but there's no doubt that the world of cloud and managed services has taken a significant portion of the overall IT market – and for understandable reasons.

Right now, most organisation are working their way through the various applications found in the business and the infrastructure needed to support them and trying to understand where best they should reside: on-prem, in a colocation facility maybe, in a cloud environment (private, public or hybrid) or delivered as a managed service (a slightly more sophisticated and reliable version of the public cloud?).

The argument for the various options are well rehearsed by now, although I think it's worth reiterating that, if your primary motive for heading to the cloud or going down the managed services route is one of cost-saving alone, then you might be slightly disappointed. Far better to concentrate on the flexibility, agility, scalability, reliability and expert knowledge that lies behind such offerings, often not obtainable in the timescale required on-premise.

Nearly all organisations have arrived at a hybrid conclusion – recognising that a mixture of on-prem, colo and cloud/managed services, and even multiple clouds and managed services, is the way forward. And I wouldn't mind betting that, in the not to distant future, the experts will be telling us that, rather than rushing headlong down the AI for everything route, we would be better off recognising that, you guessed it, a hybrid future, which combines the best of AI and the best of the human brain, will be the optimum approach.

As for where (hybrid) cloud ends up, well, the majority of Channel companies are busy changing from traditional VARs into Managed Service Providers, providing more and more of their technology solutions based on some kind of a cloud offering. I'm guessing that we will end up somewhere between a 70:30 and 80:20 split when it comes to cloud/managed services versus 'traditional' hardware and software sales.

Logically, that means that this same approximate ratio is the likely end point for most end users, and a good, if somewhat crude, yardstick to determine how a crucial part of your digital transformation journey is progressing. Once upon a time, folk with their head in the cloud were perhaps not the most reliable of employees. Today, total cloud immersion is all but essential!

CONTENTS

DW DIGITALISATION WORLD

Stellium Banks on Schneider Electric Galaxy VM UPS for transatlantic data reliability

Stellium Data Centers owns and operates one of the largest purpose built data centre campuses in the UK. As a provider of Tier 3 data centres, the company offers high-reliability colocation services to strategic clients from its Newcastle, north-east England location.

14

28

NEWS

08

Companies failing to engage suppliers on nature and climate

Less than half (41%) of companies disclosing to CDP are reporting on any of their supply chain emissions despite their impact significantly outsizing (11.4x) direct emissions.

NEW DATA shows that companies are falling behind on tracking supply chain emissions and risk completely missing mandatory regulation on nature in supply chains. With wide-ranging rules likely to be enforced this decade, companies are being urged to engage their suppliers now on nature and climate in order to be ready in time. CDP's 2022 supply chain report, Scoping out: Tracking nature across the supply chain shows that leadership in disclosure on environmental impacts is not happening at the scale and scope required, with only 41% of companies reporting on any of their supply chain emissions.

Nearly 70% of companies reported to CDP that they did not assess the impact of their value chain on biodiversity in 2022, despite the landmark agreement made at COP15 urging countries to encourage and enable large companies and financial institutions to assess and disclose their risks, impacts and dependencies on biodiversity by 2030. Indeed, disclosure on Scope 3 emissions may be required imminently in the EU (the European Sustainability Reporting Standards which covers both climate and nature), the United States (under the Securities Exchange Commission regulation) and in the International Sustainability Standards Board (ISSB) global baseline standard for climate-related financial disclosure.

Most companies have yet to acknowledge that they must tackle their impacts on climate change and nature in the supply chain together, with the report showing that most companies are prioritizing climate disclosure.

Across the 18500+ companies disclosing to CDP in 2022, over 7000 companies reported that they engaged their suppliers on climate change compared to 915 on Water and just over 500 on Forests. However, the rate of engaging supply chains is much higher in companies disclosing on deforestation, with 69% engaging with suppliers on the issue, compared to the 39% of companies who disclosed on climate change engaging their suppliers on climate and 23% on water.

A small, but growing number of companies are taking the lead by building nature into business as usual. CDP works with over 280 sustainability leaders via its Supply Chain program, representing $6.4 trillion in procurement spend. Their engagement year on year drives action. For instance, 26% of first-time respondents to CDP report setting climate targets, while 57% of repeat respondents do so, highlighting how annual disclosure drives target setting, and in 2022, companies' suppliers reported saving 70mt CO_2 – equivalent to powering over 8.5 million homes for a year – due specifically to CDP supply chain member engagement.

One in every 10 companies include climate-related requirements in their contracts with suppliers, and this is also happening to some extent with deforestation. However, most of these requirements are not yet aligned with 1.5°C climate science, with under 1% (0.04%) of all companies requiring their suppliers to set Science-Based Targets. CDP data shows senior management teams are not being incentivized at anywhere near the level needed to address key issues such as water security and deforestation in the supply chain. Seventy percent of companies' top management positions will not be incentivized to act on deforestation before 2025, while only 3% of companies have water-related incentivization in place for their Chief Procurement Officer. For climate, the picture is more positive with 74% of companies reporting board-level oversight on climate change, and 41% of the remaining companies planning to introduce it in the next two years. This is starting to filter down to the buyers, but the report finds that it is very early days.

Sonya Bhonsle, Global Head of Value Chains & Regional Director Corporations at CDP, said: "This year's report shows that environmental action is not happening at the speed, scale and scope required to limit global temperature rises to 1.5 degrees, with many companies still not acknowledging that their impact on the environment extends far beyond their operations and that of climate change.

"COP 15 couldn't have been clearer in the call to action on corporate reporting on nature. If a company is not preparing for future regulations on nature in the supply chain, they are open to a wide range of risks and could also be missing out on the opportunities that safeguarding nature will bring. Quite simply, if a company wants to be in business in the future, they need to start embedding nature into the way that they buy and collaborating with suppliers to drive action in the supply chain.

83% of CIOs must do more with less in 2023

SoftwareOne Holding has unveiled the findings of CIO Pulse: 2023 budgets & priorities.

THE STUDY, which recently surveyed 600 C-suite and IT decision-makers in the UK and USA examines how the current global economy is impacting IT priorities, revealing that despite 93% of CIOs expecting IT budgets to increase in 2023, 83% say they are under pressure to make their budgets stretch further than ever before – with a key focus on improved cloud cost management and tackling the reduction of mounting technical debt.

The survey found that 72% of CIOs admit they are behind in their digital transformation because of this technical debt, which is of particular concern as 92% of CIOs are expected to deliver digital transformation initiatives that act as revenue generators this year.

38% said the accumulation of this debt is largely because of rushed cloud migrations during the pandemic, with 31% failing to optimise their workloads before commencing the migration process. A further 38% revealed that their organisation miscalculated the cloud budget when provisioning, which resulted in significant cloud overspend. Many organisations also still have multiple on-premises IT legacy systems and 51% of CIOs state that the

complexity of legacy IT is one of the top three challenges they currently face.

Craig Thomson, Senior Vice President of Cloud and Application Services at SoftwareOne: "Businesses are dealing with an uncertain economic environment, which makes planning big IT transformations a challenge. Yet organisations need to move to the cloud and modernise legacy applications to remain competitive. We're seeing a real need for a combination of innovation with optimisation. Our clients are looking for pragmatic step-by-step transformation initiatives, rather than wholesale megalithic projects that can be hard to get approved when budgets are under pressure."

The survey findings reflect this. 45% of CIOs surveyed believe having improved transparency and control of cloud costs would help them extract greater value from their cloud investments and therefore improve company buy-in. 80% plan to increase their investment in FinOps to achieve this and 39% say they will use cloud native tools to reduce licensing costs. Despite budget pressures, 82% will increase their investment in application

modernisation. Security remains a priority, with 92% increasing investment in this space.

Dan Ortman, Global Practice Lead FinOps at SoftwareOne: "The next year is going to be a challenging one for businesses worldwide. The increased agility that comes with cloud computing will allow companies to better respond to these unexpected market changes. Adopting FinOps practices will help them optimise not just their spend but the processes, accountability and transparency required to get maximum value from their cloud investment. Once legacy IT is migrated and modernised, and cloud is optimised, any savings can be reinvested into innovative projects that help the IT team to achieve more with less."

84% of major firms failing to disclose operational emissions targets

Companies are pledging to reduce their carbon impact but struggling to measure progress across their supply chains.

NEW RESEARCH from global technology and consultancy firm Tata Consultancy Services (TCS) and Microsoft reveals a clear majority (84%) of major firms have yet to set public science-based targets to reduce direct operational emissions from their supply chains, and that only 11% have disclosed science-based targets in reducing emissions in their supply chains.

TCS and Microsoft analysed public data from global companies with combined revenue of $10 trillion to produce the findings, as part of its white paper studying enterprise sustainability, Decarbonization: The Missing Link to Net Zero to evaluate how they are using their supply-chain data in the transition to net-zero emissions.

The research shows most companies are struggling to validate their data and accurately measure their decarbonization efforts, and highlights the importance of regular engagement with extended business ecosystems, including customers, suppliers, and other stakeholders, to improve supply chain transparency and reduce carbon footprints.

Swati Murthy, Director for Strategic Sustainability Collaborations at TCS commented: "Our findings make clear how much innovative work remains to be done to make global business sustainable – and how critically important it is to engage with an extended ecosystem that involves all stakeholders – including customers, consumers, suppliers, service providers and policymakers," she says.

"Reimagining global supply chains, and using the latest technology and analysis, is a vital step towards more sustainable practices. Therefore, it is absolutely essential to forge stronger strategic collaborations with hyperscalers to share and scale solutions faster, bringing together the latest decarbonization technology and expertise and making it accessible to all stakeholders across the business value chain. This collaboration is key to unlocking the potential of green transitions and mitigating the environmental and social risks we all face."

Other key insights within the research include ways in which businesses can make data more accessible, how companies can maximise edge-to-cloud, AI/Machine learning and digital twin technologies for decarbonisation, the sectors setting extended ecosystem targets with vendors and suppliers, and the role of regulatory pressure in Climate-Related Financial Disclosures (TCFD).

The white paper was authored by a team of sustainability experts, including Dr Swati Murthy Practice Head, Strategic Collaborations for Sustainability at TCS, and James Lockyer (Portfolio Management Director | Climate Innovation Fund | Environmental Sustainability Team) at Microsoft. By reimagining global supply chains, enterprises can better measure their true carbon footprints as a critical step towards the UN's Science Based Targets Initiative (SBTi) for sustainable development.

> The research shows most companies are struggling to validate their data and accurately measure their decarbonization efforts, and highlights the importance of regular engagement with extended business ecosystems, including customers, suppliers, and other stakeholders

Organisations want a single hybrid multicloud platform

Nutanix has published the findings of its fifth global Enterprise Cloud Index (here) survey and research report, which measures enterprise progress with cloud adoption.

THIS YEAR'S ECI showed that IT infrastructure is increasingly diverse with organisations challenged with integrating data management and control. The research showed that the majority of IT teams leverage more than one IT infrastructure - a trend that's expected to intensify in the future - but struggle with visibility of data across environments with only 40% reporting complete visibility into where their data resides.

"In the coming years, there will be hundreds of millions of applications created, which will generate unprecedented amounts of data," said Lee Caswell, SVP, Product and Solutions Marketing at Nutanix. "Organisations are grappling with current application and data management across the edge, different clouds and in the core. What this year's ECI shows and what we're hearing from customers is that there's a need in the market for a cloud operating model to help build, operate, use, and govern a hybrid multicloud to support all types of applications - starting today and planning for tomorrow."

In the past five years of conducting the ECI, respondents' attitudes have drastically shifted toward the use of multiple IT environments. In 2018, well over half of respondents said they envisioned running all workloads exclusively in either a private cloud or the public cloud one day. Rather than working to consolidate on a particular infrastructure or IT operating model, as seemed desirable in 2018, most enterprises now see the inevitability, and even benefits, of running workloads across public cloud, on-premises and at the edge.

The goal for organisations now is to make this hybrid operating model more efficient, especially when managing IT environments across the edge to the core. The growing level of diversity in cloud deployments creates enormous complexity in managing application's data across cloud environments. Comprehensive tools that allow organisations to provision, move, manage, monitor, and secure applications and data from a single console in a uniform manner is a growing priority for IT. Nearly all respondents say they'd benefit from having a single, unified control plane to manage applications and data across diverse environments.

Key findings from this year's report include:

- Most organisations use more than one type of IT infrastructure, and nearly all agree that having a single platform to manage them all consistently would be ideal. The majority (60%) of IT teams leverage more than one IT infrastructure, whether it is a mix of private and public clouds, multiple public clouds, or an on-premises datacentre along with a hosted datacentre. That number is expected to grow to nearly three quarters (74%) in the near future. However, this leads to challenges and 94% say they'd benefit from having a single place to manage applications and data across diverse environments.

- Data security and management considerations drive IT infrastructure choices. Data is driving infrastructure decisions for enterprises, with data security, protection and recovery, and sovereignty topping the list of key drivers. However, visibility is a growing challenge. While 94% of respondents agree that having full visibility is important, only 40% of ECI respondents report having complete visibility into where their data resides.

- Cloud cost control ranks as a top IT management challenge. Among respondents, 85% consider cloud cost a challenging IT management issue, and more than a third (34%) rank it a "significant" challenge Specifically, application migration across clouds is currently a pain point for organisations with 86% of respondents agreeing that moving applications among environments can be complex and costly. Additionally, nearly half of respondents (46%) plan to repatriate some applications to on-premises datacentres to mitigate cloud costs in the year ahead.

- Nearly all respondents (96%) have begun using open-source Kubernetes orchestration. But they cite designing and configuring the underlying infrastructure, storage, and database services as among the top challenges they continue to face with their Kubernetes deployments.

- Sustainability is now an IT priority. Nearly all (92%) respondents agree that sustainability is more important to their organisation than it was a year ago. This shift in priorities is primarily driven by corporate Environment, Social and Governance (ESG) initiatives (63%), supply chain disruptions (59%), and customers' purchasing decisions (48%).

For the fifth consecutive year, Vanson Bourne conducted research on behalf of Nutanix, surveying 1,450 IT decision-makers around the world in December 2022 and January 2023. The respondent base spanned multiple industries, business sizes, and the following geographies: the Americas; Europe, the Middle East, and Africa (EMEA); and the Asia Pacific Japan (APJ) region.

Stonebranch releases Annual 2023 Global State of IT Automation Report

Cloud automation, self-service, and service orchestration are trending, according to year-over-year benchmarks from IT Ops, DevOps, CloudOps, and DataOps teams.

STONEBRANCH has published the Stonebranch 2023 Global State of IT Automation Report: IT Automation and Orchestration Benchmarks for IT Ops, DevOps, CloudOps, and DataOps Teams, its annual benchmark study on the automation priorities, expectations, and challenges of IT professionals worldwide.

"We're proud to release the Stonebranch 2023 Global State of IT Automation Report," said Giuseppe Damiani, CEO at Stonebranch. "Our research provides essential insights for IT Ops, DevOps, CloudOps, and DataOps professionals worldwide who use automation to help connect workflows and drive efficiencies. We're committed to contributing to the growth and innovation of the IT industry and helping our clients achieve their automation goals."

Key Findings

The Stonebranch 2023 Global State of IT Automation report is based on a January 2023 survey of IT automation professionals and executives. Its insights include:

- Cloud is a top priority in 2023. Cloud automation tops the list of planned automation tool investments this year. Infrastructure automation, also focused on the cloud, comes in second place.
- Cloud automation gains permanence. Compared to 2022, more enterprises are running permanent product jobs than ad-hoc development or test jobs. When asked which types of jobs respondents will run in the cloud in 2023, permanent production jobs moved to first place. Meanwhile, year-over-year, ad-hoc jobs fell from first place to third place.
- Self-service automation is booming. 92% empower end-users from data, cloud, development, and line-of-business teams to execute their own workflows and processes. The most dramatic year-over-year growth is from data teams experiencing 2x growth and developers seeing a 4x increase.
- Centralized automation teams drive best-practice adoption throughout the enterprise. 77% have a centralized IT automation team that cascades preferred tools and best practices throughout the organization.
- Data pipeline automation remains fractured. Data teams use a relatively equivalent mix of job schedulers, scripts, enterprise workload automation, and open-source schedulers to automate their data pipelines. No data team uses only one tool. Rather, most data teams employ all the different automation methods — indicating an opportunity to implement an orchestration layer for centralized management and observability.
- Multi-cloud data transfers are on the rise. 82% of those surveyed automate data transfers between cloud service providers.
- Automation has evolved into orchestration. 81% plan to grow their automation program, and 86% plan to replace or add a new platform to support orchestration.
- SOAPs have grown in popularity. Nearly a third of respondents said they plan to invest in service orchestration and automation platforms (SOAPs) to centrally orchestrate cloud alongside on-premises tools within a hybrid IT environment.

"Our research shows that organizations are evolving their use of IT automation and orchestration technologies, particularly in response to the unique challenges posed by cloud environments," said Peter Baljet, CTO at Stonebranch. "Today's hybrid IT landscapes are becoming more complex, and automation is increasingly seen as essential to optimize performance, ensure security, and control costs."

Employees frustrated by misaligned technology investments

72% of decision makers believe that processes and systems are designed with employee experience in mind, but only 58% of workers agree.

RESEARCH released by Ricoh Europe reveals a disconnect between employer and employee perceptions of the workplace experience.

The research, conducted by Opinium and analysed by CEBR on behalf of Ricoh Europe, polled 6,000 workers and 1,500 decision makers across the continent*. It finds that almost three quarters (72%) of decision makers say they design employee workplace processes and systems with employee experience in mind, but only 58% of workers agree. Furthermore, more than a third (36%) of workers report that new technology being introduced across their organisation won't impact their work. This suggests that many employers are failing to understand and reflect the needs of their people when it comes to digital transformation. As a result, technology investments designed to improve the working experience may be missing the mark.

Businesses that fail to act could risk productivity and growth, as well as talent attraction and retention. This is particularly pertinent given one in three (30%) employees cite working conditions and employee experience as a reason to stay with their current employer.

What's more, replacing top talent can be an expensive process for businesses, with the research finding the average cost of replacing an employee stands at €10,600 across the EU. However, uptake of digital workspace technology designed to enhance employee experience is low. One-in-three European businesses do not currently use productivity and project management software (32%), automation software (34%) or hybrid meeting technology (30%), despite employees wanting to see these implemented. To create an attractive proposition that workers want to be part of employers must not only consult their employees, but ensure feedback is embedded into workplace solutions.

Implementing people-centric workplace strategies and investments enhances workplace experience and employee loyalty, while enabling the delivery of more valuable, efficient work and better results. Research suggests that many employees are already acutely aware of this, with the majority (64%) remarking they could bring more value to their company with the right technologies and tools.

Nicola Downing, CEO, Ricoh Europe, says: "Businesses are working hard to ensure they invest in the tools and technologies that will futureproof growth and help them remain competitive. But our research suggests they're failing to connect with employees on the processes and services that will make working easier, more efficient and, in many cases, more enjoyable. Decision makers can't afford to delay. Without an optimal working environment, employees may start to look for pastures new.

"People need to be at the centre of any workplace transformation, with their needs and pain points listened to and actively addressed. This is vital to talent attraction and retention, boosting collaboration productivity and ensuring a sense of fulfilment through work across the organisation."

72% of tech leaders plan to increase their investment in tech skills development

Pluralsight has released its 2023 State of Upskilling Report, which compiles survey results from more than 1,200 tech learners and leaders in the United States, the United Kingdom, Australia, and India on the most current trends and attitudes around tech skills development.

AMID ECONOMIC UNCERTAINTY and downturn, organizations are leaning on their technologists to continue to innovate and drive business value. Though 65% of tech team leaders have been asked to cut costs, 72% still plan to increase their investment in tech skill development in 2023. And because upskilling existing talent is more cost-effective than hiring new employees, 97% of learning and development and HR directors say they are prioritizing internal talent over hiring for open positions.

"This year's research findings underscore the importance of maximizing employee potential and optimizing learning investments to drive business ROI," said Gary Eimerman, Chief Product Officer at Pluralsight. "Organizations and individuals alike are being asked to do more with less in the face of reduced workforces and larger economic pressures. For future-focused companies, an emphasis on continuous upskilling will help sharpen their competitive edge"

A Force Multiplier: Upskilling Amid Economic Uncertainty
The past several months have brought an onslaught of layoffs and hiring freezes across industries—especially tech. As 65% of tech executives are being asked to look for cost efficiencies in response to economic uncertainty, the consequences have a ripple effect.

Sixty seven percent of tech managers reported that workforce reductions in their organization across software, IT, and data have resulted in their teams taking on more responsibility, while nearly half (47%) of technologists agree they have had to perform additional responsibilities outside of their primary job function. Investing in tech skills development helps equip overwhelmed

Amid economic uncertainty and downturn, organizations are leaning on their technologists to continue to innovate and drive business value

employees with the tools needed to conquer these new and unfamiliar responsibilities. More than half (52%) of technologists said it's important to learn new tech skills in times of economic turbulence, and as day-to-day responsibilities evolve and expand in response to layoffs, upskilling becomes a critical aspect of not just individual success, but organizational success.

Technology Skills Gaps in 2023
Amid these workforce challenges, the 2023 State of Upskilling Report illuminates a decrease in tech skills confidence across respondents. Last year's report found that 80% of technologists were confident they had the skills to master their current job.

This year, the majority of technologists don't feel that same level of confidence across major tech skill areas. The top three skills technologists and technology managers are prioritizing to drive business value are cybersecurity, data science, and cloud. According to the report:

- Seventeen percent of technologists are completely confident in their cybersecurity skills while 21% are not confident at all.
- Twenty five percent of technologists are completely confident in their data skills while 8% are not confident at all.
- Twenty one percent of technologists are completely confident in their cloud skills while 17% are not confident at all.

Lack of time and budget have remained the biggest barriers to upskilling over the past two years. And for technologists who secure the time or budget to prioritize upskilling, 30% don't know where to focus their skills development, while 25% aren't sure which resources to leverage.

With 85% of organizations actively engaged in, or planning to begin, a digital transformation project in 2023, technologists need guided learning mapped to key business outcomes. For more insights, download the full 2023 State of Upskilling Report.

MANAGED SERVICES
SUMMIT
EUROPE

13 JUNE 2023

NOVOTEL AMSTERDAM CITY
AMSTERDAM NETHERLANDS

The Managed Services Summit Europe is the leading managed services event for the European IT channel. The event features conference session presentations by specialists in the sector and leading independent industry speakers from the region, as well as a range of sessions exploring technical and operational issues. The panel discussions and keynotes are supported by extensive networking time for delegates to meet with potential business partners. This C-suite event will examine the latest trends and developments in managed services and how they have influenced customer requirements and the ability to create value through managed services for your organisation and customers.

THEMES, TOPICS AND TRENDS

The Managed Services Summit will address the key trends and issues that impact the managed services sector including:

- How to build differentiation within an increasingly competitive market
- Maximise value and increase efficiencies for MSPs and their customers
- Increasing knowledge of new technologies, processes, and best practice

- Analysing trends in buyer behaviour and successful sales strategies
- Changes and trends in regulatory compliance
- Successfully adoption of Zero trust architecture (ZTA)
- Emerging advances in AI, automation and XaaS
- The state of cloud adoption, and hybrid and edge computing
- Hybrid and remote working best practice
- Addressing the growing cyber security skills gap
- Participation with local business community leadership organisations

TO DISCUSS SPONSORSHIP OPPORTUNITIES CONTACT:

Sukhi Bhadal
sukhi.bhadal@angelbc.com
+44 (0)2476 718970

Peter Davies
peter.davies@angelbc.com
+44 (0)2476 718970

Leanne Collins
leanne.collins@angelbc.com
+44 (0)2476 718970

https://europe.managedservicessummit.com/

Stellium banks on Schneider Electric Galaxy VM UPS for transatlantic data reliability

STELLIUM DATA CENTERS owns and operates one of the largest purpose built data centre campuses in the UK. As a provider of Tier 3 data centres, the company offers high-reliability colocation services to strategic clients from its Newcastle, north-east England location.

STELLIUM positions itself as the new Data Meridian – where East meets West in data transfer – being the UK's only landing point for the new North Sea Connect cable and the UK's newest Internet Exchange Point.

Stellium – the data meridian

An important client to Stellium is Aqua Comms, a provider of international undersea fibre connectivity, which recently completed a major project to link the USA with Ireland, the UK and the Nordics. The America Europe Connect 2 (AEC-2) project is a dual diverse trans-Atlantic fibre connection comprising two legs: one going directly from the US to Denmark; the other passing through Ireland, the Isle of Man and England where it terminates at the Stellium Campus before continuing to Denmark.

According to Paul Mellon, Operations Director of Stellium, the Newcastle campus hosts Aqua Comms' cable landing station for the section passing through Britain and Ireland. The station comprises Power Feeder Equipment (PFE) gear which supplies the necessary power to transmit data via the cable to Denmark, and Submarine Line Terminal Equipment (SLTE) in which the fibres get split for individual use. The Challenge: Trans-Atlantic Connection Must be Reliable with Zero Downtime

The overriding requirement for Aqua Comms' cable landing station is reliability with guaranteed zero downtime. Several factors made the Stellium Campus a good fit, according to Mellon. There is ample utility power in the area thanks to the presence of the UK Super Grid which can provide dual 11kVA feeds into the site. There is also the comfort of being in a remote location away from the major centres of population in the south of the country where congestion and power demands combine to present a risk to supply. And there is the realisation that with the quality of fibre connections now available, it is possible to have major data centres in any location once they can be managed and provisioned to the highest standards.

"The key element in the Service Level Agreement (SLA) we have with Aqua Comms is for 100%

uptime," says Mellon. "They need a data centre that will never go down, that has a high level of security both technically and physically, and a highly controlled environment for their equipment. Stellium could tick all the boxes they needed because our mantra is 100% uptime."

To provide such a guaranteed service requires a combination of high-quality products and infrastructure with corresponding planning and operations management expertise. In the case of products and infrastructure, Stellium could provide Aqua Comms with ample power from the grid as well as backup power facilities that offer defence in depth.

"We demonstrated that we had 2N levels of redundancy with our uninterruptible power supply (UPS) system, together with 6MVA standby generators arranged in an N+1 configuration," he says. "Furthermore, all our equipment is high quality from recognised leading global vendors: UPS from Schneider Electric, generators from FG Wilson, Eurobond walls and Kingspan floors. Prospective customers recognise the quality of investment that has been made in the facility."

Excellence in Data Centre Management demonstrated by Stellium

Stellium also excels in the management of its campus, having earned certification to such standards as ISO 27001 for information security, ISO 14001 for environmental protection, and ISO 9001 for service management. With a background in electrical engineering design and facilities management, Mellon is well versed in life-cycle planning, ensuring that the site can operate in the long term with zero downtime while accommodating the inevitable adoption of new technologies, and addition of extra capacity with all the supplemental infrastructure that entails.

"The challenge for Stellium was to build our infrastructure round the cable landing facility so that we had a robust platform of power, of environmental control to manage temperature and humidity, and strict access-control to manage security so that

Aqua Comms could feel confident in the execution of their business plan for that cable over the next 25 years," says Mellon. "From our perspective it was a standard operating procedure to create a 100% uptime platform capable of concurrent maintenance."

An example of just such a live upgrade was a project to reinforce the UPS resource necessary to guarantee uptime in the case of a power disruption. The requirement was to install dedicated UPS systems to support the Aqua Comms infrastructure rather than have it share UPS systems with other colocation clients.

Mellon says: "It was always part of the plan to keep the power needed for colocation IT separate from that needed for the fibre. But given the complexity of the Europe America Connect project, which is really 14 related projects with a combined investment of between $400m and $500m, the cable landing station was completed in 2019 but the cable itself didn't go live until 2020."

The solution; Dedicated power back-up for AEC-2 using Schneider Electric Galaxy VM UPS

Because of the time between the completion of the cable station and the go-live date for the connection, the project to upgrade the UPS capability did not take place until 2020. Unfortunately, this meant that it encountered the additional challenge of personnel restrictions caused by the onset of the Covid19 pandemic and associated lockdowns. The dedicated cable station UPS systems are 200kVA Galaxy VM models from Schneider Electric, chosen because of their quality, the experience Stellium has had of dealing with Schneider in the past and because the company's product strategy fits well with Stellium's approach to life cycle management.

Designed to provide efficient data centre power continuity, Galaxy VM is a highly compact, modular 3-phase UPS that incorporates servicing features which are highly desirable in mission critical applications.

In addition, Galaxy VM features Schneider Electric's ECOnversion operating mode, delivering ultra-high efficiency while charging the batteries, conditioning the load power factor and ensuring Class 1 output voltage regulation. The unit's high efficiency rates remain stable even at lower operating power levels. Advanced electric features include power conditioning, very low harmonic distortion through IGBT rectifier, plus input power factor correction that lowers installation costs by enabling the use of smaller generators and cabling.

Results; Connecting the continents with zero downtime

"We've had great support from Schneider," says Mellon. "They're very good technical designers and the products are extremely reliable. In the past

we've found that we could rely on a 12-year old UPS, for example, that was still operational even after it has suffered what had seemed to be a catastrophic failure. That's a monumental level of reliability and support that we recognise."

The Galaxy VM models are also available with Lithium Ion batteries, which proved advantageous to Stellium because their smaller footprint is valuable in a data centre specialising in colocation. Mellon says that the confidence in sourcing a reliable product that is continually evolving in quality and efficiency was also a factor in choosing Schneider as its UPS supplier.

> "We've had great support from Schneider," says Mellon. "They're very good technical designers and the products are extremely reliable. In the past we've found that we could rely on a 12-year old UPS, for example, that was still operational even after it has suffered what had seemed to be a catastrophic failure. That's a monumental level of reliability and support that we recognise."

"We need to be very strategic going forward," he says. "Once we get into production mode with clients, we need to be able to draw down high-quality products, such as chillers, switchgear and UPS, at an agreed delivery level. Our clients demand reliable delivery, and we need a similar commitment from our technology suppliers, so the strategic partner approach that Schneider adopts is highly attractive."

European ICT spending to reach $1.2 trillion

According to the International Data Corporation (IDC)'s Worldwide ICT Spending Guide: Enterprise and SMB by Industry, ICT spending in Europe will reach $1.2 trillion in 2023 and will surpass $1.4 trillion by 2026, posting a 5.4% compound annual growth rate (CAGR) over the 2021-2026 period.

OVERALL EUROPEAN ICT spending is forecast to grow by 4.2% year on year in 2023, driven by the Scandinavian countries and the United Kingdom. On the other hand, sanctions imposed by the EU and the growing number of companies leaving Russia will result in the Russian ICT market shrinking by 9.4% year on year.

"While organizations in most countries are anticipating a recession this year, the outlook for European ICT spending remains positive," says Zsolt Simon, Senior Research Analyst at IDC. "They regard technology investments as a means of gaining a competitive edge, as well as providing solutions for many of the challenges arising in an extremely volatile market."

Software will be the fastest-growing technology group on a year-on-year basis, and investments in cloud-first solutions will drive the overall technology market in Europe in 2023. Software has proven to be highly resilient to the storm of disruptions currently impacting the continent, supported by rapid growth in the adoption of artificial intelligence (AI) platforms and software quality and lifecycle tools, as well as application platforms, integration and orchestration middleware, and collaborative applications.

Despite inflationary pressures and economic recession in several European countries, investments in IT and business services, telecom services, and hardware will continue to increase as well. However, the device market has suffered from the declining purchasing power of consumers, supply chain constraints, and cost-saving measures among enterprises, which is expected to result in an overall decline in device spending of 2.2% in 2023.

The consumer sector will continue to be the largest source of ICT spending in 2025, representing almost 28% of total European ICT revenue, although year-on-year growth will remain below 1%, as the increasing cost of living is taking a toll on consumer purchases. Banking and discrete manufacturing will take the second and third positions, respectively, in the ranking of highest spending industries, accounting for a combined market value of over $210 billion. Entities in the banking sector will be focusing on accelerating automation to support core banking services, database management, and resource management.

AI will be leveraged to offer more flexible and more personalized services for improved customer experiences. Manufacturing companies will invest in technologies to ensure cost-effective operations, handle increasing amount of data, and reduce pressure on staff through robotics and process automation robotic process automation (RPA).
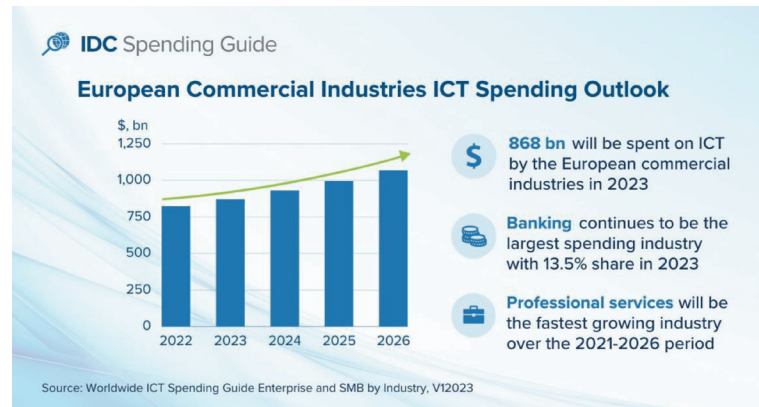
European security spending to grow 10.6%

Growing security needs, new regulations, and the increasing risk of ransomware attacks due to the current geopolitical situation continue to drive European security spending. According to IDC's Worldwide Security Spending Guide, total European spending will grow 10.6% in 2023. Spending in the region will continue to see almost-double-digit growth over the forecast period, with total spend reaching $71 billion in 2026.

The U.K., Germany, and France are the top spenders on security, together accounting for over half of the European security market. In Central and Eastern Europe, Czech Republic will have the fastest growth in 2023, at over 12% YoY.

"IDC research shows that ongoing disruptions and a dynamic threat landscape have led European organizations to rethink their cyber resilience and proactively ensure their organization maintains good cyber hygiene," said Romain Fouchereau, research manager, IDC European Security. "Adopting zero-trust principles to harden security measures and implement secure access controls across networks, applications, and devices has become a top priority, with a defined strategy and support from senior management for new investments and initiatives." European spending on software will lead YoY growth in 2023, with approximately 11% YoY growth, but security services will see the largest spending in 2023, reflecting its key role for European organizations across industries.

"We're seeing that in addition to software and hardware, European companies also have a very real need for security services to guarantee their continued operations and regulatory adherence," said Vladimir Zivadinovic, senior research analyst, IDC European Data and Analytics. "This is especially true for organizations with limited competencies in security, especially SMBs in less digitally mature verticals such as media, manufacturing, and healthcare."

In 2023, the finance sector will have the highest spending in Europe, driven by the need for data protection and regulatory compliance. At the same time, market dynamics are pushing financial institutions to increase their responsiveness and agility. Security services will be pivotal to unlock the full potential of their internal IT teams to focus on new services and improved customer experience. Finance will be closely followed by manufacturing, with the government sector having the third-largest spending in 2023. Manufacturing will continue to focus on protecting its industrial assets, which will be increasingly connected with the enterprise IT network. The government sector will continue to invest in data protection and in executing its digital transformation initiatives, which are being targeted by ever more sophisticated ransomware attacks.

European AI market driven by efficiency and security requirements

The new Worldwide Artificial Intelligence Spending Guide (V1 2023) published by International Data Corporation (IDC) shows that artificial intelligence (AI) spending in Europe will reach $33.2 billion in 2023, representing 20% of the worldwide AI market. This is despite the current economic and political challenges, the war in Ukraine, rising inflation, IT budget cuts, and the layoffs announced by even the biggest tech companies.

IDC Spending Guide

European Commercial Industries ICT Spending Outlook

868 bn will be spent on ICT by the European commercial industries in 2023

Banking continues to be the largest spending industry with 13.5% share in 2023

Professional services will be the fastest growing industry over the 2021-2026 period

Source: Worldwide ICT Spending Guide Enterprise and SMB by Industry, V12023

IDC Spending Guide

Biggest Verticals for Security Spending in Europe in 2023
Market Share (%)

Finance   Manufacturing   Government   52.4%

Source: IDC's Worldwide Security Spending Guide, V1 2023

IDC Spending Guide

European AI Market:
Top Industry Based on 2023 Market Share

Banking 16.0%
Retail 12.1%
Discrete Manufacturing 11.3%
Process Manufacturing 8.8%
Professional Services 7.3%
Other 44.4%

Source: IDC Worldwide Artificial Intelligence Spending Guide, V1 2023

AI spending in Europe will post a compound annual growth rate (CAGR) of 29.6% between 2021 and 2026, compared with the worldwide CAGR of 27.0%. Growth in Europe is being driven by Western and Central and Eastern Europe, with spending expected to reach more than $70 billion in 2026. Overall AI market growth will mainly be driven by software, which will represent nearly two-thirds of total spending in 2023.

"Companies recognize the business benefits they can gain from AI adoption, which include improvements to business operations, process optimization, efficiency, resilience, and decision making," says Carla La Croce, research manager for IDC Customer Insights and Analysis.

Banking, retail, and manufacturing (discrete and process) are the biggest spenders on AI, followed by professional services. Together, these industries will account for more than half (55.5%) of total European AI market spending in 2023.

The need for enhanced security is highlighted by the two biggest use cases in Europe — augmented threat intelligence and prevention systems and fraud analysis and investigation — which are common not only to financial services industries (such as banking and insurance), but also to the public sector and more threat-exposed industries such as telecommunications, utilities, and transportation. In banking, security is driving the adoption of AI solutions for fraud analysis and investigation as well as augmented threat intelligence and prevention systems. In retail, customer services are at the center of AI investments. Professional services organizations will invest the most in IT optimization to improve agility and enhance operational efficiency.

"European AI investments have proved resilient to disruptions, including the ongoing war in Ukraine," says La Croce. "Industries are looking for use cases to enhance their security systems, guarantee operational efficiency, and provide high-quality services to customers."

ESG independence
A recent International Data Corporation (IDC)

survey shows that organizations with the most mature environmental, social, and governance (ESG) strategies are increasingly turning to software platforms to meet their data management and reporting needs. This represents an important transition toward independent ESG program management and away from dependence on ESG consultants and service providers.

"Software platforms will play an essential role in an organization's ESG maturity journey. These platforms will support organizations from early-stage data gathering and materiality assessments through sustainable business strategy enablement and every step in between," said Amy Cravens, research manager, GRC and ESG Reporting and Management Technologies.

IDC identified three stages of maturity among the organizations that have adopted ESG software. Early stage maturity includes those organizations where formal disclosure and compliance processes are in place but ESG is not yet a component of daily practice. Organizations with established key performance indicators (KPIs) and controls for ESG goals are in the middle stage of maturity. The final stage of ESG maturity is signaled by ESG being fully incorporated into the organization's business model and strategy.

IDC found some variability in ESG maturity across industries with the manufacturing and services sectors being further along in their ESG journey while the education and government sectors are still in the earlier stages of maturity. Despite these variances, the goals for ESG software were largely the same across industries: data management, data reporting, and risk management.

Among the organizations that have adopted ESG software, data management was identified as the top driver for this decision, followed by ESG reporting and ESG risk management. Similarly, the survey showed that management of sustainability goals was the most important business priority for ESG software. However, the business priorities for ESG software varied somewhat across industries with improved compliance, improved financial performance, improved brand perception/customer loyalty, and improved operational efficiency identified as the top 4 priorities.

While reporting was perceived as the most important ESG software tool, data management remained an important factor in software purchase decisions. Because internal sustainability goals and external reporting initiatives are dependent on the availability of quality data, survey respondents identified data management, accreditation, and analysis as three of the top ranked ESG software capabilities. And to meet these data needs, carbon accounting, non-carbon accounting, and audit management were among the most important ESG software tools.

ninjaOne

Bring efficiency, automation, and scale to your MSP.
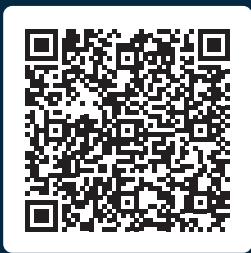
Learn more

⚠ Threat 'M32.Trojan.dx!tef' detected by Bitde...

⚠ Bitlocker encryption disabled for disk volume C:\

🔄 Pending Reboot: This device needs a reboot to finalize a process: Today at 11:55 AM

Backup job failed: Plan Name: Daily Workstation Image: 08/04/2022 8:00 PM

Gartner unveils top eight cybersecurity predictions for 2023-2024

Fifty percent of chief information security officers (CISOs) will adopt human centric design to reduce cybersecurity operational friction; large enterprises will focus on implementing zero-trust programs; and half of cybersecurity leaders will have unsuccessfully tried to use cyber risk quantification to drive enterprise decision making, according to the top cybersecurity predictions revealed by **GARTNER.**

IN THE OPENING KEYNOTE at the recent Gartner Security & Risk Management Summit, Richard Addiscott, Senior Director Analyst and Lisa Neubauer, Senior Director, Advisory at Gartner discussed the top predictions prepared by Gartner cybersecurity experts to help security and risk management leaders be successful in the digital era.

"There's no question that CISOs and their teams must be laser focused on what's happening today to ensure their organizations are as secure as possible," Addiscott said. "But they also need to make time to look up from their daily challenges and scan the horizon to see what's coming down the track that might impact their security programs in the next couple of years.

"These predictions are a signal flare for some of those things we see emerging and should be considered by any CISO looking to build an effective and sustainable cybersecurity program."

Gartner recommends that cybersecurity leaders build the following strategic planning assumptions into their security strategies for the next two years.

Through 2027, 50% of CISOs will formally adopt human-centric design practices into their cybersecurity programs to minimize operational friction and maximize control adoption.

Gartner research shows that over 90% of employees who admitted undertaking a range of unsecure actions during work activities knew that their actions would increase risk to the organization but did so anyway. Human-centric security design is modeled with the individual — not technology, threat or location – as the focus of control design and implementation to minimize friction.

By 2024, modern privacy regulation will blanket the majority of consumer data, but less than 10% of organizations will have successfully weaponized privacy as a competitive advantage.

Organizations are beginning to recognize that a privacy program can enable them to use data more broadly, differentiate from competitors, and build trust with customers, partners, investors and regulators. Gartner recommends security leaders enforce a comprehensive privacy standard in

line with GDPR to differentiate in an increasingly competitive market and grow unhindered.

By 2026, 10% of large enterprises will have a comprehensive, mature and measurable zero-trust program in place, up from less than 1% today.

A mature, widely deployed zerotrust implementation demands integration and configuration of multiple different components, which can become quite technical and complex. Success is highly dependent on the translation to business value. Starting small, an ever evolving zero-trust mindset makes it easier to better grasp the benefits of a program and manage some of the complexity one step at a time.

By 2027, 75% of employees will acquire, modify or create technology outside IT's visibility – up from 41% in 2022.

The CISO role and purview of responsibility is shifting from being control owners to risk decision facilitators. Reframing the cybersecurity operating model is key to the changes coming. Gartner recommends thinking beyond technology and automation to deeply engage with employees to influence decision making and ensure they have appropriate knowledge to do in an informed way.

By 2025, 50% of cybersecurity leaders will have tried, unsuccessfully, to use cyber risk quantification to drive enterprise decision making.

Gartner research indicates that 62% of cyber risk quantification adopters cite soft gains in credibility and cyber risk awareness, but only 36% have achieved action-based results, including reducing risk, saving money or actual decision influence. Security leaders should focus firepower on quantification that decision makers ask for, instead of producing self-directed analyses they have to persuade the business to care about.

By 2025, nearly half of cybersecurity leaders will change jobs, 25% for different roles entirely due to multiple work-related stressors.

Accelerated by the pandemic and staffing shortages across the industry, the work stressors of cybersecurity professionals are rising and becoming unsustainable. Gartner suggests that while eliminating stress is unrealistic, people can manage challenging and stressful jobs in cultures where they are supported. Changing the rules of engagement to foster cultural shifts will help.

By 2026, 70% of boards will include one member with cybersecurity expertise.

For cybersecurity leaders to be recognized as business partners, they need to acknowledge board and enterprise risk appetite. This means not only showing how the cybersecurity program prevents unfavorable things from happening, but how it improves the enterprise's ability to take risks effectively. Gartner recommends CISOs get ahead of the change to promote and support cybersecurity to the board and establish a closer relationship to improve trust and support.

Through 2026, more than 60% of threat detection, investigation and response (TDIR) capabilities will leverage exposure management data to validate and prioritize detected threats, up from less than 5% today.

As organizational attack surfaces expand due to increased connectivity, use of SaaS and cloud applications, companies require a broader range of visibility and a central place to constantly monitor for threats and exposure. TDIR capabilities provide a unified platform or ecosystem of platforms where detection, investigation and response can be managed, giving security operations teams a complete picture of risk and potential impact.

Sustainability metrics will be standard practice

The majority of public companies will update their investment methodologies to include sustainability metrics as a key part of their return on investment (ROI) analysis by 2026, according to Gartner, Inc. The shift from viewing sustainability solely as a source of risk management to a new driver of returns will be transformative for many companies. Many organizations have evolved from a purely risk-oriented approach to environmental, social and governance (ESG) concerns and have begun to optimize their programs to burnish their reputation and actively attract customers, investors and talent. The next stage in this evolution is to drive sustainability transformation by making ROI a key focus of their ESG strategies.

"Many CFOs have already experienced positive returns from placing an emphasis on sustainability and through small-scale, green capital investments," said Melanie O'Brien, VP analyst, research, in the Gartner Finance practice. "We predict that 60% of public companies will have updated their investment methodologies to include non-financial information related to sustainability by 2026, which will facilitate longer-term and transformative sustainability investments."

Embracing sustainability as a driver of returns

O'Brien said that traditional investment methodologies often overlook the value of nonfinancial and intangible benefits when considering investment returns. Progressive organizations that are embracing sustainability as a driver of returns have begun to update their investment criteria in a similar fashion to how leading organizations assess the nontangible benefits of their digital investments. Organizations that can account for the enterprise value of their sustainable investments, connect them to broader corporate strategy and show clear benefits to the organization will likely be seen favorably by investors and other stakeholders.

One way this is already being made tangible is in the debt capital markets, as organizations partially mitigate the challenges of a higher interest rate environment by issuing ESG-linked bonds, which receive more favorable discount rates than their conventional equivalents. Gartner predicts that more than $3 trillion of ESG-linked bonds will be issued by 2026, accounting for 30% of total market issuance.

Adjusting Investment Methodologies

To further accomplish financially aligned sustainability goals, Gartner recommends CFOs adjust their investment methodologies in key areas, including:

- Assessing their geographic portfolios for opportunities to divest businesses that conflict with stated ESG objectives; Gartner further predicts that 30% of multinational organizations will streamline geographies and subsidiaries due to sustainability regulatory requirements by 2026.
- Ensuring that investments which demonstrate clear nonfinancial but significant benefit to the organization are considered equal to projects with financial returns.
- Tolerating a longer cash back period of six-to-10 years instead of the current two-to-three year period, aligned with strategic objectives and potentially by balancing longer term sustainability investments with additional more aggressive short-term investments.
- Leveraging current frameworks and accounting models that have been established to support the growth in organizations calculating the value on intangibles. These include the UN Value Driver Model, the Return on Sustainability Investment (ROSI) methodology, Economic Value Added (EVA) calculations and Value based management (VBM).

Lack of data and analytics value?

Less than half of data and analytics (D&A) leaders (44%) reported that their team is effective in providing value to their organization, according to a new Gartner, Inc. survey. Chief data and analytics officers (CDAOs) must focus on presence, persistence and performance to succeed in their role and deliver measurable business results. "D&A is in the business of driving stakeholder value," said Donna Medeiros, Senior Director Analyst, at Gartner. "The most successful CDAOs are outperforming their peers by projecting an executive presence and building an agile and strategic D&A function that shapes data-driven business performance and operational excellence." The survey was conducted online from September through November 2022 among 566 D&A leaders globally.

Successful CDAOs project executive presence

The survey found that D&A leaders who rated themselves as "effective" or "very effective" across 17 different executive leadership traits correlated
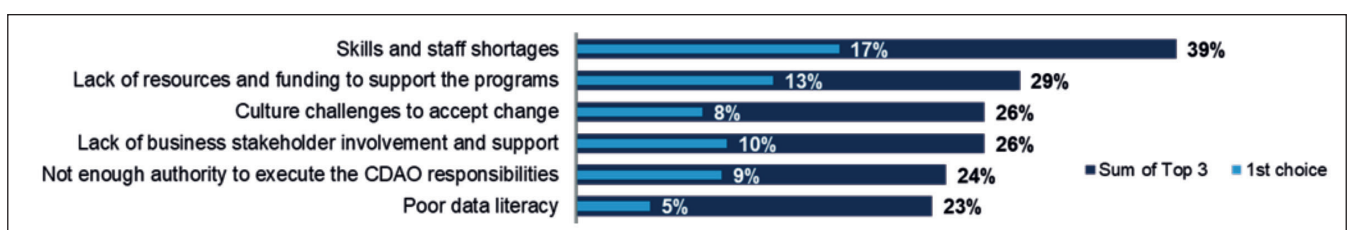
➤ Figure 1: Top Roadblocks to the Success of D&A Initiatives (Sum of Top 3 Ranks)
Source: Gartner (March 2023)

with those reporting high organizational and team performance. For example, 43% of top-performing D&A leaders reported effectiveness in committing time to their own professional development, compared with 19% of low performers.

"Successful CDAOs must be elite leaders," said Alan Duncan, Distinguished VP Analyst, Gartner. "Top-performing CDAOs invest in their success by developing skills to thrive in ambiguous circumstances, articulate compelling value stories and identify D&A products and services that can drive business impact."

CDAOs must be persistent to meet new demands

The survey found that CDAOs are tasked with a broad range of responsibilities, including defining and implementing D&A strategy (60%), oversight of D&A strategy (59%), creating and implementing D&A governance (55%) and managing data-driven culture change (54%).

Furthermore, many D&A functions are receiving increased investment, including data management (65%), data governance (63%) and advanced analytics (60%). The mean reported D&A budget is $5.41 million, and 44% of D&A teams increased in size in the last year. "The demands being placed upon D&A, as well as increased investment, reflect a growing confidence in CDAOs' abilities and

recognition of the data office as an indispensable business function," said Medeiros. "However, this leads to more work as pressure grows for D&A to achieve tangible business results."

Given the scope and complexity of demands being placed on D&A teams, the lack of available talent has quickly become a top impediment to D&A success, as reported by 39% of respondents. The top six roadblocks to D&A reported in the survey are all human-related challenges (see Figure 1). To build an effective D&A team, CDAOs must have a robust talent management strategy that goes beyond hiring ready-made talent. This should include education, training and coaching for data-driven culture and data literacy, both within the core D&A team and the broader business and technology communities.

D&A performance must tie to business strategy

The survey found that 78% of respondents rank corporate or organizational strategy and vision as one of the top three inputs to the D&A strategy. Additionally, 68% are prioritizing D&A initiatives based on alignment to strategic goals. "CDAOs who prioritize strategy over tactics are the most successful," said Duncan. "Because the CDAO serves multiple stakeholders across the business, they must align with organizational strategic priorities and focus on selling the D&A vision to the CEO, CIO and CFO as key influencers."

Europe needs its own cloud superstars to bolster consumer data protection

With the cloud having become the prerequisite way for doing most things online, the handful of companies that dominate the space hold significant strategic power.

BY JAN OETJEN, CEO OF GMX AND MAIL.COM, CHAIRMAN OF THE BOARD OF TRUSTEES OF THE EUROPEAN NETID FOUNDATION

IN MOST CASES, the clouds in question are provided by a small handful of very large US companies - the household names we all know; Google, Amazon, Meta (formerly Facebook), Apple and Microsoft (collectively known as the "GAFAM" companies).

To the uninitiated, it can sometimes be hard to spot when we're actually using a cloud; from the more visible clouds such as online storage, backup, email etc. to the less visible services powering the likes of Facebook, Instagram, Office applications, etc., clouds really are everywhere. However, it should greatly concern us that only a handful of companies dominate this space. The main problem with this entire service sector being dominated by US companies alone is that their data protection standards are far lower than those of the EU and UK, where the GDPR gives individuals significantly more

protection over their data. Secondly, we should all be concerned about putting all our eggs in the same basket. Think about the recent outage of the Microsoft cloud, which affected users and business around the world, except China.

My data or yours?

It is important to remember what using a cloud service actually means, especially when the word "using" does such a poor job of conveying the full reality of the situation. When you use a cloud service, you are effectively giving your data to it. Oftentimes this data is very personal – photographs and videos of our loved ones, a company's entire intellectual property, our thoughts and desires, our creative endeavours etc. Look at it this way: if the internet died tomorrow, who would own your data?

Regulatory convergence

Ofcom announced in September 2022 that it would investigate the position of the tech giants in the cloud services market. The authority recognises cloud as a critical component for the delivery of digital services and its central role in effective communication regulation. The proclaimed goal of Ofcom's market study is to understand how the cloud market functions, and if it functions well for consumers.

For the European Union's (EU) part, its recent Data Act is another step. The European regulators have criticised the existing options for moving data from one cloud service to another to be far from ideal. Clearly the risks posed by a market dominated by a handful of US companies under one, fairly weak, regulatory framework has not gone unnoticed by regulators.

European data centres do not guarantee European data protection

Storing personal data outside the jurisdiction of the EU's General Data Protection Regulation (GDPR), or its UK equivalent, is a risk to data privacy. This is because as soon as you upload data to one of the US-based cloud services, it comes under the jurisdiction of US data protection regimes.

According to US federal law, enforcement agencies can currently request US companies to pass user data to them, irrespective of whether it is being stored within the US or not. The user in the UK or the EU receives no formal warning that a foreign country's authorities can access their data, without even specifying a reason, not to mention that absolutely no permission is ever requested from the user.

The EU Commission, the US and the UK governments are currently struggling to find a new solution for how companies can legally transfer personal data across European and UK borders to the United States. The former Privacy Shield mechanism was declared illegal by the European Court of Justice in 2020. The new Trans-Atlantic

Data Privacy Framework (TADPF) now depends on the Executive Order (EO) issued by President Biden in October 2022. This Executive Order imposes some new restrictions on US intelligence activities and offers British and the EU citizens the possibility to call the newly-established "Data Protection Review Court" (DPRC) to investigate and resolve complaints regarding access to their data by US national security authorities.

However, there is not a lot of optimism among data protection organisations such as Max Schrem's Nyob or the American Civil Liberties Union (ACLU) that this can somehow close the fundamental gap between the European and the US-American understanding of real data protection. Even if the UK government and the EU Commission decide that the new terms are meeting the high GDPR standards, the new framework will probably be challenged and overruled by courts yet again.

Our cloud, our data

As internet users and businesses upload more and more of their most personal and sensitive data to cloud providers, the issue of data protection and safety becomes more significant than ever. Relying on the most convenient solution becomes, unfortunately, not the wisest choice.

Consumers need real European and UK alternatives to what the US GAFAM companies have to offer. Changing habits takes time, but users need to become better educated about what is really happening to their data when they share it with a US-based cloud company. If the cost of the convenience was made more explicit to consumers, I believe they would be more inclined to choose European alternatives.

Three things to know when you are making cloud choices

Businesses have everything to gain when IT teams are equipped with the visibility they need to better understand the specifics and the impact of different cloud provider network behaviours and anomalies.

BY MIKE HICKS, PRINCIPAL SOLUTIONS ANALYST, CISCO THOUSANDEYES

THIS YEAR, Gartner forecasts a 20% growth in end-user spending on public cloud services. Continued growth is not surprising given how ubiquitous cloud services have become for enterprises today, and the role that public cloud networks play within enterprises' day-to-day infrastructure. But while cloud adoption has reached a stage of maturity in some areas, such as migration pathways and pipelines, it's not uniform across all cloud domains.

While cloud cost containment dominated cloud migration strategies of yesteryear, 2023 is shaping as the year where a performance-based lens is applied to cloud-based architecture and configuration decisions. That performance focus is part of the course with any evolution of new technology adoption, but perhaps even more so for enterprises operating within today's broader challenges of inflation, global uncertainty, and skills shortages. Remaining competitive and able to deliver excellent customer and employee services in today's environment requires a level of ROI thinking that goes beyond cost.

Today, selecting a cloud is often based on its suitability to run certain types of workloads, or for commercial reasons such as introducing competition or certain sovereignty requirements. The focus remains on the cloud provider and its most obvious capabilities. However, for a complete cloud experience, considerations must be given to both the core cloud architecture and the infrastructure that underpins these cloud environments.

First, there's no steady state in the cloud Based on three years worth of data examining public cloud network performance and connectivity architectures, one thing becomes clear: there's no steady state in the cloud.

The modular, API-centric (application programming interface) architecture of today's applications, as well as the widespread adoption of business SaaS (software as a service), has created an extensive web of interdependence; with the cloud at the heart of it.

The sheer number of changes these applications are exposed to might come as a surprise when in fact, any update to the APIs, services, or third-party code libraries that these application components rely on can - and routinely does - break these applications. Given the dynamic nature of the cloud, performance snapshots run the risk of not accurately reflecting current conditions and for that reason, they're insufficient as a tool.

In other words, there is no steady state in the cloud. To overcome this, teams will need greater visibility into the cloud to keep up with its dynamic nature, and to continue to experience benefits rather than acquire additional costs.

Second, latency is inevitable so you should plan for it
Latency is often tackled in more controlled environments by operation teams. The traditional response to latency is to shorten the distance and number

of hops required to move traffic. Theoretically, by applying a shorter route, this would create less physical distance to cover and improve the overall performance.

However, when it comes to cloud-based operations, it gets a bit more complicated. As we already know, change is the only constant in the cloud. Public cloud connectivity architectures are constantly progressing with alterations at the provider's discretion. Cloud providers' decisions, such as how they advertise service endpoints, or use shared infrastructure as their backbone, all have the potential to add more trip time to data traffic. So, the enterprise has very little control over these actions.

The way to address latency is in the application architecture itself, and in setting (or resetting) user expectations.

The end goal isn't to minimise latency to the shortest time possible, but instead to make performance quick enough to satisfy the application's and users' requirements. Low latency may be possible by hosting workloads in a single cloud region that is close to corporate users. However, this option may not be preferable if the local region costs more for compute, or would cause potential resiliency issues due to single country dependency.

By comparison, a higher latency might be acceptable if it balanced cost and convenience, and if the application was architected in such a way that it could account for and work with that additional latency, without causing a degraded experience.

Third, It all comes down to the cable
Enterprises often think about their data being in the cloud and the immediate potential bottlenecks to ingress and egress, but the reality is that capacity bottlenecks can occur far away. Global cabling systems that carry the world's traffic are both a core asset and critical concern for today's digital and cloud-first businesses.

Big tech companies such as Google, Amazon, and Microsoft, have all made significant investments in infrastructure projects, including subsea cable systems. However, even with such investments, they are still forced to rely on shared physical links to transfer traffic between different parts of their networks.

Between cloud providers, the contracted or leased capacities on these cables varies. The cables themselves are also different in usage for different landing zones. For instance, in some regions these may cross over in fairly shallow waters susceptible to damage.

The performance of a network can also shift over time and among various regions. Depending on the destination, some cloud service providers attempt to route traffic through the internet and bring it closer to their physical locations. While other cloud providers endeavour to bring traffic into their networks as close as possible to its base. Ultimately, cloud-based workloads support an enormous scope of digital services today. Yet, as these three examples show, businesses have everything to gain when IT teams are equipped with the visibility they need to better understand the specifics and the impact of different cloud provider network behaviours and anomalies. Performance optimisation is possible at every stage, as long as you know where to look.

Future gazing

Top enterprise cloud trends on the horizon.

BY TERRY STORRAR, MANAGING DIRECTOR UK, LEASEWEB

THERE'S NO DENYING that cloud has revolutionised the way modern companies do business. Providing a scalable and cost-effective solution to how organisations manage their data, applications and infrastructure, cloud delivers the game-changing flexibility that's essential to keep pace with today's ever evolving business needs.

With cloud computing in play, IT leaders can flex resources up or down in the most cost-efficient and reliable way possible while tapping into innovative technologies that will fast track new capabilities at speed. All the while leveraging the robust security and backup resources offered by cloud providers to enhance how they safeguard data and applications and achieve the high availability of data along the way.

However, today's challenging economic times are driving IT decision makers to rethink their cloud strategies. For many, this means initiating customised infrastructure solutions designed around their exact needs, so they can capture business value in a sustainable way. But that's not the only issue that's top of mind for IT leaders.

Let's take a look at some of the key factors currently shaping the cloud evolution trend.

Hyperscalers aren't the only option

Today's IT managers are increasingly savvy about their options when it comes to achieving an optimal cost-to-capacity ratio.

While public cloud providers may set the benchmark for quality and performance, these services don't come cheap, especially where bandwidth consumption is concerned. This is why IT decision makers are now questioning if the entirety of their company's workloads needs to be hosted on expensive hyperscaler infrastructure. Especially when they can get the same performance, if not better, at a lower cost by exploring alternative solutions and providers.

While hyperscalers may be ideal for companies that constantly need the ability to scale 'infinitely', many organisations have a largely static or stable infrastructure all year round. For example, e-commerce firms know they can expect a steady level of traffic daily and will only need to scale infinitely to cope with peak demand periods like Black Friday or Christmas.

In these scenarios it makes sense to move stable workloads and persistent infrastructure to a more cost-effective provider, integrating with a

hyperscaler to offload peak traffic. It's a creative way to save money without compromising on performance or resiliency.

Building out hybrid with flexibility in mind

IT managers are rethinking their IT infrastructures with hybrid in mind, moving workloads between a mixture of on-premises, public and private cloud as computing needs and costs change. For example, development workloads or big data can be hosted in the public cloud, while business critical applications and data are housed elsewhere on dedicated servers.

Offering a wide breadth of deployment options, hybrid infrastructures are advantageous from a number of perspectives. For example, data can be accessed from anywhere to support distributed operations, meanwhile private connections to the public cloud will deliver enhanced security and more predictable performance. Indeed, compared to public cloud solutions, a private hybrid cloud solution gives IT managers much greater control

changing needs, MSPs offer a cost-effective way to secure and take care of computing, storage, networks and application stacks running in the cloud.

Skilled at combining on-premises and multi-cloud resources and architecting solutions for specialised workloads or functions like analytics, today's MSPs are developing highly bespoke services that give IT managers high levels of flexible control over their operations in the cloud.

As IT leaders look to accelerate business-process redesign, initiate continuous integration and delivery development pipelines and reduce IT spending using cloud-native tools, working with an MSP makes it possible to build on an organisation's strong cloud foundations in an agile, secure and sustainable manner.

Evolution, not revolution

The current energy crisis is spurring IT leaders to reassert control over their infrastructure

IT managers are rethinking their IT infrastructures with hybrid in mind, moving workloads between a mixture of on-premises, public and private cloud as computing needs and costs change

over the design and architecture of their systems while providing a higher level of data security.

Partnering with MSPs to achieve business-led ambitions

IT decision makers are looking to capture business value on a number of fronts. Doing so, however, increasingly depends on partnering with one or more managed cloud service providers (MSPs) to manage their cloud environments, optimise infrastructure costs and deliver on sustainability and green computing goals.

Giving companies access to the tools and expertise needed to adapt their IT environment to their

expenses and build enhanced agility into their cloud strategies. Alongside integrating legacy infrastructure with the wider cloud environment, the demands of IT decision makers are becoming increasingly sophisticated when it comes to enabling a truly holistic cloud strategy founded on sound cloud economics.

Having completed their initial lift-and-shift activities, the focus now is on refining cloud strategies to unlock new business value. This means working with multiple cloud providers to fine tune operational expenditure, find the services that best suit current workload requirements and initiate new capabilities that will give them a competitive edge.

Cloud first to Cloud smart:
a strategic shift

A cloud smart approach can lead organisations to a place where their costs are predictable and their workloads are optimised.

BY RAJESH AWASTHI, VICE PRESIDENT & GLOBAL HEAD OF MANAGED HOSTING AND CLOUD, TATA COMMUNICATIONS

THE TERM 'digital transformation' has evolved for businesses, particularly in the last decade. What once meant a simple shift to virtual forms and online communication, now has vast implications across the different aspects of a business. As a core enabler of digital transformation, cloud adoption has been a focus for businesses in recent years, so much so that it's created the popular moniker 'cloud first.' Cloud adoption boomed rapidly, as businesses raced to leverage the cloud and support their hybrid work environments. Many businesses realised while they understand the need for cloud technology, they might not have the correct resources to ensure that they are harnessing its benefits strategically. This resulted in organisations having complex and fragmented implementations across various cloud platforms, whether it's public, private or edge. What has become clear, there is a difference between being cloud first and being cloud smart. In this article, we'll explore best practices for employing a cloud smart approach.

The price of failing to optimise an enterprise cloud strategy comes in the form of spiraling monthly costs, unmodified workloads failing to unlock critical cloud features and issues with performance management.

All in all, it takes away time and money that a cloud smart strategy should be giving back. Organisations must begin to leverage smart and sustainable approaches to their cloud infrastructure, including public, private or edge cloud. A customised cloud smart strategy can match an organisation's goals and circumstances to its ability to execute with the cloud.

Shortcomings of a Cloud First approach
For nearly a decade, cloud first has been the prevalent approach to cloud adoption initiatives. It can be counterproductive to maximise the cloud footprint by prioritising legacy system modernisation, resulting in workload migrations.

Some of the main shortcomings of a cloud first approach plaguing organisations are:

○ **Gaps between cloud expectation and execution abilities:**
Organisations often develop unrealistic expectations from the cloud that get compounded due to the lack of technical, financial, or strategic skills required to implement them.

○ **Incongruency due to siloed business processes:**
The cloud is agile and dynamic by nature. Legacy organisational properties like operational silos, rigid IT governance and outdated foundational practices are often incompatible with the cloud.

○ **Speed over planning:**
A cloud first approach is speed centric. The mad rush to incorporate the cloud and its elements across each stratum of operations leaves limited time to adopt other approaches.

○ **Getting the right cloud services with the right workload:**
Cloud offerings can be diverse, extensive and complex. The varied and complicated nature of cloud service provider offerings exacerbates the confusion in matching the right cloud services with the right workload.

○ **Lack of specialized IT skills:**
Other than investment, planning and a cultural shift, a cloud transformation, also requires a specialized IT skillset that organisations often lack.

All these issues can be reversed with a cloud smart approach where cloud adoption is synchronized with organizational goals and values.
Becoming Cloud Smart

Gartner estimates that 60% of organisations that have adopted a cloud first approach will switch to a cloud smart approach by 2023. Considering most business leaders are expected to spend half of their IT budget on the cloud by 2025, gaining control over these costs has now become of paramount importance.

A cloud smart approach entails determining whether an organisation has the right mix of private and public cloud, edge, and on-prem infrastructure to meet its various unique workloads, as well as all its compliance and regulatory obligations. To achieve this, a cloud smart approach considers a range of factors: the management, cost, visibility, interoperability, network, and application priorities of a business to create a more unified cloud environment.

Here are a few crucial considerations to derive maximum value from cloud investments with a holistic strategy:

○ **Identify and set realistic goals:**
The priority toward driving a cloud smart

> A cloud smart approach entails determining whether an organisation has the right mix of private and public cloud, edge, and on-prem infrastructure to meet its various unique workloads, as well as all its compliance and regulatory obligations

approach is to set realistic goals and expectations for cloud initiatives.

○ **The right fitment for the migration-mix:**
Identify the right cloud environments to determine which applications to keep on-premises and which to migrate to the cloud (private/public).

○ **A performance measurement cycle:**
Identify all the benchmarks and then focus on improving them as you progress along with a cloud smart strategy.

○ **The right investment in services and orchestration tools:**
Invest in tools and services that help in reducing the complexity of your cloud journey.

○ **Mitigation of the risks and compliance violations:**
Ungoverned cloud adoption and poor foundational practices can put organizations at risk of security breaches, data loss, compliance issues and budget overruns. They must be contained and mitigated accordingly.

○ **Workplace culture realignment:**
Use your current resources to their maximum value including reskilling and retraining staff. Also, enhance security postures and use best practices to inherit cultural reforms.

○ **A cloud exit strategy:**
Create a clear cloud exit strategy during the initial cloud design and planning phases considering aspects such as stakeholder management, application, legal and data governance, etc.

By taking on the benefits of all the different cloud environments and using that mix to offset the potential weaknesses of each, organisations can create a unified, automated and scalable environment perfect to their needs.

Collaboration is the key

It is a smart choice to look to a partner with experience to foster a holistic cloud experience. Organisations can choose to partner with experienced cloud migration experts and managed service providers to unlock significant business value from their cloud investments. The experts can weave their disparate IT infrastructure together, orchestrate migration / consolidation of different clouds (public, private and/or edge cloud) to provide a unified cloud environment that is optimised, continuously monitored and managed.

A savvy roadmap toward cloud optimisation includes:
○ Formulating a well-defined strategy that identifies obstacles, ensures minimal disruption, and sets realistic goals and expectations.
○ Improving performance and cost-saving through a well-crafted migration strategy.
○ Championing workload migrations in sync with organisational preferences, its technological, security and regulatory environments.
○ Enabling organisations to take advantage of cloud economics by protecting current investments, optimising infrastructure resources, and budget efficiently along with cost visibility.

In conclusion, a cloud smart approach can lead organisations to a place where their costs are predictable and their workloads are optimised. This gives them a competitive edge to execute a sustainable digital transformation strategy that is aligned with the customer's needs and organisational goals. After all, the cloud cannot deliver on its promise if you don't know what to expect from it.

MANAGED SERVICES
SUMMIT
LONDON

13 SEPTEMBER 2023

155 BISHOPSGATE
LONDON, UK

The 13th Managed Services Summit London is the premier managed services event for the UK IT channel. 2023 will feature presentations by leading independent industry speakers, a range of sessions exploring technical, sales and business issues by specialists in the sector, and extensive networking time to meet with potential business partners. This is an executive-level event, exploring the latest trends and developments, evolving customer requirements and how to create value through managed services – both for your own organisation and your customers.

THEMES, TOPICS AND TRENDS

The Managed Services Summit will address the key trends and issues that impact the managed services sector including:

- How to build differentiation within an increasingly competitive market
- Maximise value and increase efficiencies for MSPs and their customers
- Increasing knowledge of new technologies, processes, and best practice

- Analysing trends in buyer behaviour and successful sales strategies
- Changes and trends in regulatory compliance
- Successfully adoption of Zero trust architecture (ZTA)
- Emerging advances in AI, automation and XaaS
- The state of cloud adoption, and hybrid and edge computing
- Hybrid and remote working best practice
- Addressing the growing cyber security skills gap
- Participation with local business community leadership organisations

TO DISCUSS SPONSORSHIP OPPORTUNITIES CONTACT:

Sukhi Bhadal
sukhi.bhadal@angelbc.com
+44 (0)2476 718970

Peter Davies
peter.davies@angelbc.com
+44 (0)2476 718970

Leanne Collins
leanne.collins@angelbc.com
+44 (0)2476 718970

https://managedservicessummit.com/

Going all-in with evergreen cloud adoption brings its own challenges

How managed services hold the key to unlocking business value.

BY JACK DAWSON, SALES SPECIALIST FOR MANAGED SERVICES AT COLUMBUS UK

COMPLEX LEGACY SYSTEMS are fast showing their inflexibility to meet today's business pressures of increased consumer demands, supply chain shortages, and recurring economic uncertainty. The market volatility has driven many businesses towards cloud-based systems that enable 'evergreen' IT strategies providing consistent updates and the ability to quickly add new functionality to match business goals. But such a large-scale migration is not without its own set of challenges. Evergreen solutions may provide short-term operational stability and long-term sustainability but can only truly be exploited when underpinned by a dedicated Managed Services Provider (MSP).

The facts speak for themselves. There has been a noticeable surge in cloud adoption across the board, with IDC forecasting that "whole cloud" spending – total worldwide spending on cloud services, the hardware and software components underpinning the cloud supply chain, and the professional/managed services opportunities around cloud services – will surpass $1.3 trillion by 2025, while sustaining a compound annual growth rate (CAGR) of 16.9%.

But cloud has not quite been the silver bullet that everyone predicted. Even though the vast majority of public organisations are using or will use cloud services, there are some knowledge gaps in what data organisations are running and storing in their clouds. Notably, this hints at a lack of ability to consistently support and maximise this new infrastructure with the support of in-house IT teams.

Given this backdrop, the role of an MSP (Managed Services Provider) has become essential to bridge this digital divide in the cloud ecosystem. In fact the Global Managed Services Market is expected to reach USD 274.20 billion by 2026 – due in large part to recent surges in cloud adoption, as more companies move from test environments to place more of their work-critical workloads into the cloud and encounter digital hurdles.

Evergreen IT strategies require top-notch support that can match up

Evergreen IT management is quickly becoming a business necessity rather than an option in the cloud-driven software environment. Advances in technology and business applications require a higher level of expertise, which for many businesses is too costly to manage in-house. A specialist MSP can assist with this, alongside tailoring the management, installation, and forward-planning of software to ensure minimal business downtime. But migrating is only the first step. Despite their benefits over complex legacy implementations, cloud systems require regular maintenance and monitoring that often reaches beyond the capacity of traditional IT systems.

Specialist software requires specialist IT professionals. With an MSP, businesses can avoid pockets of disruption, reduce IT burden, and offload the upkeep of cloud systems and resolution of faults to experts capable of optimising digital ecosystems. Operating within a wider evergreen strategy, MSPs will streamline IT systems to generate cash savings and increase digital efficiency across cybersecurity, transformation projects, and long-term planning.

1. Evergreen strategy prioritises iterative updates over 'Big Bang' transformation
Overhauling legacy systems often requires businesses to undertake digital transformation in one large, disruptive operation. An evergreen IT strategy on the other hand, keeps a cloud-based system online throughout to allow businesses to conduct smaller, more regular updates either weekly, biweekly, or monthly. These can be planned at optimum times to avoid downtime, support business continuity, and mitigate against lost profits. Disruption during transformation is always a risk, so incremental changes also mean pockets of disruption can be easier to isolate and resolve. An MSP expert has the time and knowledge necessary to craft a bespoke strategy for transformation, which builds-in operational resilience and offsets potential downtime. For instance, round-the-clock help desks mean businesses can access support and advice whenever they need it, to allow the fastest resolution of problems during the onboarding process.

2. Tap into the knowledge base of an MSP to reduce IT burden
MSPs don't just offer support during implementation, they have a wealth of systems knowledge that businesses can exploit to assist with automation updates, faults, and internal process reviews. For industries such as the manufacturing sector, downtime can account for 5% - 20% of working time, with lost productivity costing up to £180 billion a year. Automating cloud processes such as self-service and e-ticketing, with the support of an MSP, decreases potential downtime caused by mistakes from manual handling in legacy systems.

Internally, MSPs can also encourage the collaboration of critical information across separate business functions to widen the spread of knowledge – increasing adaptablity and realigning employees with business identity.

Looking forward to the future, it is critical for organisations to navigate supply chain disruption, predict periods of difficulty or economic stagnation, and budget downtime for systems maintenance into operational calendars. MSPs can handle these business-as-usual tasks and allow internal staff time to strategically plan future operations.

3. MSPs keep a digital watch on cyber and security threats
In a world where a business falls victim to a

Operating within a wider evergreen strategy, MSPs will streamline IT systems to generate cash savings and increase digital efficiency across cybersecurity, transformation projects, and long-term planning

ransomware attack every 14 seconds, the ability to monitor systems digitally is a necessity. But with 69% of businesses unable to keep pace with the rising costs of avoiding cybercrime, security issues risk draining financial resources from other operational areas. This is where an evergreen IT strategy supported by an MSP can provide operational scalability stretch to help businesses counter the ever-evolving threat posed by cyber criminals without losing precious internal resources. MSPs take on the burden of safeguarding infrastructure, data assets, applications, network, and personal computers by managing vulnerabilities and threats throughout their lifecycles with specialist evergreen software. This consists of a three-pronged approach of firewall monitoring, infrastructure antivirus monitoring, and PC antivirus monitoring, which targets typical points of vulnerability such as phishing emails, the most common origin of malware attacks.

MSP support ensures that businesses meet regulatory requirements, manage overall risk and compliance, and prevent security incidents before they turn into an epidemic and cause business-wide disruption. Additional support of cloud innovation secures hybrid working models, which boosts employee satisfaction and mitigates against cybersecurity threats caused by workers home routers and other external technology touchpoints.

Evergreen strategies are critical for business vitality – trust the experts implementing them
With economic uncertainty always potentially around the corner, the need for an evergreen strategy to streamline, secure, and sustain operations is vital for business continuity. As much as an evergreen strategy relies on seamless, incremental digital transformation, it also needs to deliver end-to-end efficiencies and futureproof cloud ecosystems against any business disruption. But it is clear that going cloud is no longer enough.

Enlisting the specialist skills of MSPs to augment and hone the skills of a company's internal IT teams is vital. An evergreen strategy secures technological longevity and ensures businesses maintain market gains through difficult periods.

The revolution might not be televised, but it's definitely multi-cloud

The real benefits of cloud are only slowly becoming clear. But it can't realise its full potential until one last architectural bottleneck is solved – database.

BY MARTIN GAFFNEY, VICE PRESIDENT EMEA AT YUGABYTE

SOMETIMES, the point of a revolution isn't immediately clear. Though he later claimed to have been misquoted, a Chinese leader once warned us that the significance of the 1789 French Revolution was still "too early to say." As James Burke will tell you, it often takes quite a while for the impact of change to fully ripple out ("There are times when an invention is technologically possible and it may appear necessary, but in the absence of the technical and social infrastructure to support it, the invention will not survive").

I wonder if we might look back on Cloud in the same way—as a breakthrough which took a while for the business benefits to become clear.

Anyone who thinks the Cloud is now fully stabilised is wrong. Gartner recently published an analysis of the top Cloud Infrastructure and Platform Services. It emphasised that the sector is still evolving and that new players continue to come through.

Gartner voiced something that, up until now, you might think was taboo; no cloud is perfect for everything. The report insists a multi-cloud strategy – (the use of cloud services from multiple public cloud providers for the same set of IT solutions or workloads) is now the smart play. And asserts that "a well-governed multi-cloud strategy can improve access to a breadth of technology choices and innovative best-of-breed capabilities."

Just three cloud providers hold over 70% of the market—but it's naïve to think there's such a thing as 'just' an AWS, 'just' an Azure, or even a GCP shop. Certainly, the CFO would prefer it that way, as she figures that's just one annual subscription to pay. 'One cloud to rule them all' may have been the plan five years ago, but it's now clear that you should tactically use cloud for certain applications, in specific regions of the world. This will protect your data, keep your business nimble and ensure you are never subject to the whim of any one big CSP (Cloud Service Provider).

I mention data deliberately. Here, the issue is data sovereignty as any international business needs to keep on top of different data sovereignty requirements in different regions.

No single vendor can meet all of these for you all the time, so you will have to work with different cloud providers to be 100% compliant with local/regional privacy regulations. For true multi-geography data sovereignty, you need different support levels from

different providers in different sovereignty regions. Another driver for multi-cloud is the avoidance of concentration risk. This is a problem that regulators like the Bank of England have specifically called out (see its new draft supervisory statements).

If you're not a Tier One Bank you may think this isn't relevant to you, but no-one can put all their main business systems in one platform and expect it to never fail (at this point, SME business users will now be shuddering at the name 'Rackspace').

Why they invented PaaS... and why you should be sceptical

Avoidance of concentration risk, data privacy, and system crashes aren't the only reasons to commit to a multi-cloud strategy. Vendor lock-in is also a problem. The CSPs have known from the start that the basic infrastructure as a service proposition, IaaS, wouldn't be enough to keep the chairman in yachts. Platform as a service, PaaS (where they keep selling you add-ons to keep you from leaving the showroom) is where the real profits lie.

So, the real reason we wanted cloud is finally becoming clear: to keep your independence or manoeuvrability open. This makes multi-cloud the best strategy.

Unfortunately, there is one last 'Big Boss' at the end of this cloud level video game to beat. And it's a big one! The database. Applications technologies in the cloud are scalable, portable, and open. This is where Kubernetes is king: modern cloud micro services. Open technologies like this make it compelling to work in the cloud, making it straightforward to develop, test, deploy, extend, and scale any business app you want. But your database is the final frontier, as you simply can't work with it portably.

That's because for serious business or transactional applications, pre-cloud business systems like Oracle have just not evolved into a cloud database that works as well as cloud native technologies like Kubernetes, Kafka, or Slack, tools you can just pick up and drop in.

Do you want to throw away the whole point of even trying multi-cloud?

People try to address this challenge by trying to chunk up their big monolithic database, or instead try NoSQL or other non-standard business data engines, which just don't work. (Don't sue me, it's just the reality.) Feeling you have no choice; you then revert to the version of a database your eager new PaaS CSP friend wants to sell you, and immediately throw away the whole point of even trying to go multi-cloud.

Maybe we have to accept that if neither NoSQL nor older pre-cloud databases deliver the true cloud independence multi-cloud offers, it must be a chimera. The genuinely good news here is that there is (finally) an option for delivering true multi-cloud multi-database workloads. That comes in the shape of open source, distributed SQL, where the decades of experience and features SQL offers are all wrapped up in an easily accessible form, like PostgreSQL. Even better are properly productised versions that really align with the scale and ACID issues of transactional work--a prime example of this is our own YugabyteDB.

I'm not saying the cloud revolution is going to follow the path of the French Revolution (for a start we don't need Madame Guillotine). What I am saying is that the smart move with cloud going into 2023 is informed by Gartner's report; cloud is a dynamic market whose innovations are far from done and choices continue to come to market.

To maximise your business options, multi-cloud should also mean considering adopting distributed SQL to give you the best possible options for business success in the Cloud.

The biggest cloud database migration challenges for the year ahead

Businesses are facing a turbulent economic climate, and the threat of recession looms over the year ahead - so the argument for migrating data to the cloud in terms of both costs and efficiency has never been stronger.

BY ITAMAR BEN HEMO, THE CEO AND CO-FOUNDER OF RIVERY

WITH THE ECONOMY becoming ever more digital, more businesses are taking the decision to migrate their on-premise or self-managed warehouse to the cloud. But this is not always an easy journey. Many businesses fail to migrate effectively, or end up going wildly over budget. This is why planning and prepping strategically is more important than ever to any cloud database migration.

Even before the pandemic, research showed that up to 90% of CIOs reported data migration projects falling short of their objectives, and just a quarter (26%) achieved data migration within their expected timeframe. According to research by Gartner, the cost is an ongoing problem, with 60% of infrastructure and operations leaders facing public cloud cost overruns. There are common issues which can derail cloud database migration projects, taking a more holistic approach to technology and skills can help business leaders avoid these pitfalls.

The skills gap

Perhaps the most common issue which can hinder projects is not having the right skillset: Deloitte identifies a skills gap as the number one problem in cloud migration. Many existing IT people simply don't have the necessary cloud-specific knowledge and experience. People make the mistake of assuming, to take one example, that if they have a Microsoft SQL Server database administrator (DBA) that they'll be able to instantly transfer their knowledge and skills to a cloud data warehouse. Not so. The two are as different as driving a car and driving a motorcycle. Cloud migration projects tend to be extremely complex, so it is usually wise to have a dedicated project manager working alongside the DBA to handle everything from risk management to communication to ensure the project adheres to its timeline. If you've never migrated a database to the cloud before, it is worthwhile to hire in expertise in the form of an outside consulting firm or individual to offer guidance.

Failing to plan

Poor planning is a key point where cloud database migrations can stumble or fall. By their nature, cloud database migrations tend to have lots of moving parts. This is why going over budget, 'mission creep' and missed deadlines are so common with cloud database migrations.
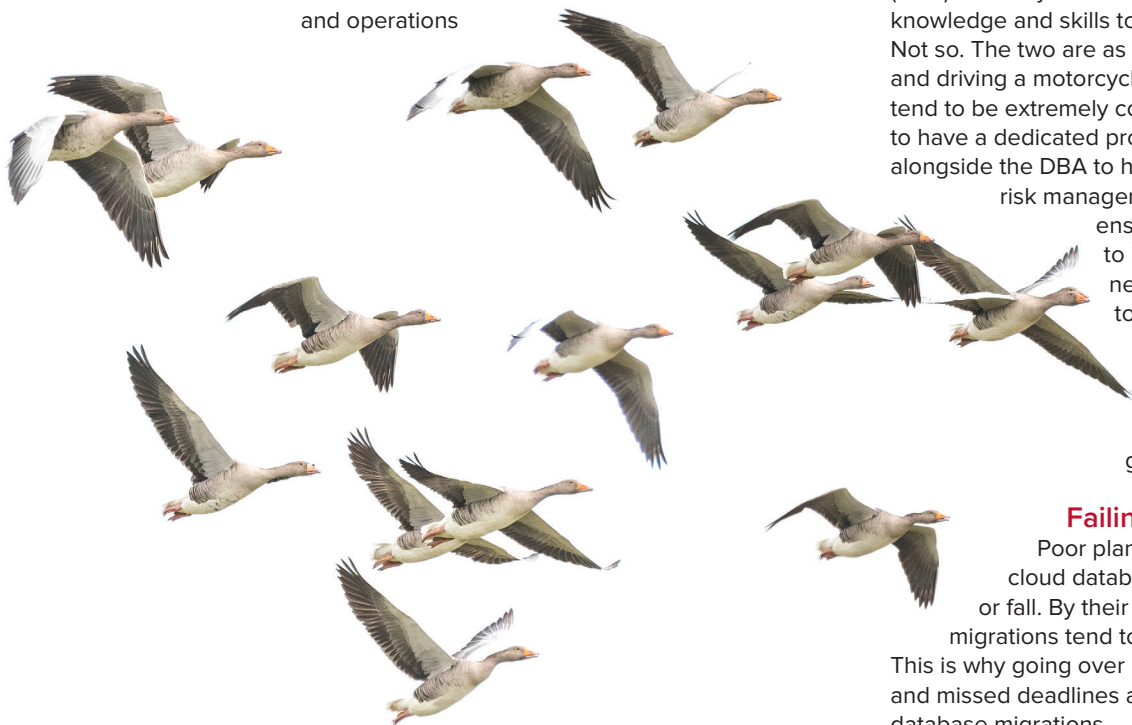
Having a clear plan before starting ensures it is distributed to every stakeholder who might have an interest and can jump on to assist at any point in time. A simple and single channel of communication such as an internal Slack channel for project updates helps keep everyone in sync.

Key to this plan is deciding which sort of cloud migration is right for your company. There is no one-size-fits-all solution. Different strategies have their own upsides and downsides. So-called 'Big Bang' database migrations, where there's a hard cut-off and one system is switched off mean that if something goes wrong, it can be extremely difficult to roll back the migration.

Piecemeal migrations, where the overall project is broken down into smaller parts which can be migrated individually one by one, remove this risk, but can add a new layer of complexity. With some systems using the old database and others using the new cloud database, it can leave businesses operating without all their data in one place. Migrating bit by bit does have benefits though, allowing business leaders to react to problems as they come up without too much damage to the business as a whole. Taking it slow helps to avoid serious problems which might stop your business in its tracks.

Parallel live migrations, also known as zero-downtime migrations, are possibly the best choice, where both old and new databases are live at the same time with production data. This offers peace of mind when something goes wrong, which it almost certainly will. Parallel live migrations provide an easy, reliable way to roll back if needed, and an ongoing validation that the data in both systems matches. It also pays to think about your business goals, and how these might change in the future. You need to choose a data integration solution that lasts far beyond one single project and is able to grow as your business does. Again, communication is vital here: get input from stakeholders, from the CTO, CIO and CEO to understand what might be coming over the horizon. You'll need to understand what challenges your business might face, and how the data operation will respond to these, plus how it will scale with the business. Thinking about this at an early stage can help you choose the right solution to deliver long-term value.

Adopting the wrong technology
Choosing the wrong technology can hurt your cloud database migration project. The so-called 'lift and shift' approach, where applications and data are moved to the cloud without redesigning the app, can be tempting due to the speed it offers, but can lead to problems down the line.

Choosing a more streamlined, automated approach can help business leaders deal with challenges such as synchronisation, data integration and potential rollbacks in the fairly likely event that there

are problems. For example, change data capture automatically syncs a database with a cloud data warehouse, offering smoother flows and increased reliability. You'll also need to think carefully about data integration technology: ETL (extract, transform, and load) takes raw data from sources, then transforms that data on a secondary processing server, before loading the data. The newer ELT (extract, load, and transform) provides flexibility and control by loading the raw data directly into a data warehouse, where it is transformed into enriched and structured data. Choosing ELT tends to speed up the data migration process measurably, and allows you to work with complete data. That said, ETL can have its place, particularly in systems with legacy architectures.

It's also worth considering solutions which offer more automation. Many data projects get bogged down with technical details such as developing data pipelines for individual database tables. Such tasks can mean that your team's time and resources are consumed by technical grunt work, leading to delays and increased costs. Choose the right tools and you'll get to the finish line on time, and start reaping the benefits.

Reaping the benefits
Setting out a plan, which includes what technology to use, your timeline and how your business will continue operating during the process, will help you avoid delays which will hit your bottom line. Thinking intelligently ahead of time and ensuring you have both the right staff, the right knowledge, and most importantly, the right technological tools will ensure you avoid a rushed migration which may result in unforeseen disruptions to the entire data migration journey. The benefits of cloud database migration are clear and measurable. Planning properly ensures you'll arrive there on time and on budget.

What is cloud concentration?

Why are banks worried about it? Is cloud portability the answer?

BY DAN HOLT AT COCKROACH LABS

IN THE BANK OF ENGLAND'S semi-annual Financial Stability Report, the central bank expressed its concern about risks associated with cloud computing data centres, and how that could affect financial stability in the UK. The report identified three reasons for this issue: concentration of data centres; concentration of financial services firms that operate data centres; and concentration of cloud service providers themselves. According to the Bank of England, addressing these issues will be necessary to prevent systemic risk in the banking system.

What is Cloud Concentration?

Cloud concentration risk refers to the probability of having all of your assets in one specific cloud provider. For example, if you only use Amazon Web Services (AWS), then your risk is 100%. For Critical national infrastructure and major financial services applications, this is an inherent risk that could have widespread ramifications including financial impact due to breaches in SLAs, brand deformation due to poor customer experience and overall poor experiences for businesses and end users.

What is Cloud Portability?

Cloud data portability is the ability to easily transfer data and applications from one cloud service provider to another cloud service provider. This helps keep the market in balance by ensuring no single cloud provider becomes "the only" cloud provider a service can run in and in turn, reduces the risk of concentration.

The Bank of England's concern

Cloud Concentration has become a major concern for central banks. As more and more companies decide to shift their workloads to the cloud, there is a growing risk that a single instance of downtime or a cloud provider going out of business could lead to catastrophic consequences. Not only would this be detrimental to businesses and end users, but it would also affect the wider economy with knock-on effects on jobs and confidence in the economy if these applications were part of the national infrastructure such as core banking platforms.

If just one company goes under due to lost data, it could have ripple effects for years to come. In an attempt to avoid such scenarios happening in the

future, Bank of England Governor Mark Carney is calling for regulation that ensures adequate diversity in cloud providers. He points out that there are currently no hard and fast rules about diversifying your workload among different providers, meaning too much power can rest with any one provider which increases concentration risk even further.

What does this mean for you?

The Bank of England is worried that there will be a significant concentration of risk if one company provides cloud computing to all institutions. This is due to the fact that if this company were to fail, it could take an entire economy with it. It's important for consumers and businesses alike to make sure they're not putting all their eggs into one basket when dealing with cloud-based services.

A recommendation is to use providers who offer on-site backups as well as offsite ones so that your data is more secure. You should also consider using a hosting provider that offers redundancies in its infrastructure so that even if one region goes down, your service isn't affected.

Another way to mitigate risk is to use a multi-cloud strategy which means having access to multiple providers. Remember: by using more than one provider you can significantly reduce any single point of failure in your organization's operations.

Action points to avoid Cloud Concentration risk
There are a lot of companies that store all their data with a single provider, which may pose a problem if anything goes wrong with the system. The Bank of England fears concentration risk related to cloud services. By using multiple providers and storing their data across them, companies can avoid this problem.

Also, they should diversify both their supplier base as well as the location where they store their information. However, it is important to consider the risks when implementing these solutions and ensure that they are taken into account appropriately.

For example, one risk is that the company might not be able to access some information because of jurisdictional restrictions or because there were errors made during the migration process. To address this issue, companies must first identify what country-specific laws apply to their data and then make sure they have an appropriate strategy for migrating data from one jurisdiction to another.

Using a Cloud Agnostic Database like CockroachDB can help ensure from a data persistence layer your data is protected from Concentration risks by allowing you to run your database across multiple clouds, in a hybrid manner or simply having the ability to deploy in any cloud giving you the assurance around cloud portability.

Bridging the software skills gap with a low-code/no-code approach

By enabling developers to focus on unique, competitive features instead of commoditised functionality, low-code and no-code tools are helping businesses drive more value from their technology investments.

BY SUHAIL ANSARI, CTO OF TRICENTIS

CREATING CUSTOMIZED SOFTWARE solutions at scale has traditionally required large engineering teams to keep up with the pace of development without sacrificing quality. With the pace of digital transformation not slowing down amid today's unstable economy and employment market, businesses are having to rely on smaller teams to scale the value of their solutions to a greater number of customers - or worse, do all this whilst also cutting back on budget. End-user expectations meanwhile have not been cut back. It's therefore becoming critical for software development teams to focus on the speed and efficiency of releases - without compromising quality.

By using modular low-code/no-code frameworks, organisations can empower their employees to create workflows that fit their business needs. Departments gain far more autonomy and IT teams can focus on more critical and creative tasks. In fact, the low-code approach has been so successful that the market is predicted to grow by 19.6% in 2023, totalling $26.9 billion.

Although low-code applications don't need a high level of technical knowledge, and they require less development and deployment time, they

have also become more powerful, enabling users to create fairly sophisticated applications. As a result, they still need to be tested and meet the same quality standards as full-stack applications, which puts additional strain on quality and DevOps teams.

This is where the low-code/no-code approach can be used not only in software development but in software testing too. With recent advancements in automation and Artificial Intelligence (AI), quality and DevOps teams are able to do more with less by streamlining their development processes, quickly and efficiently testing software against set requirements, and thus improving the efficacy of their releases.

Bridging the talent gap in the software development market

Although current layoffs in the tech industry bring fresh talent into the market looking for new opportunities, hiring developers with the right skills remains an issue, with more than 37.5% of enterprises listing developer recruitment as their top challenge of 2023.

The rise of low- and no-code tools is therefore a game-changer for businesses facing talent shortages. With more than 80% of non-IT professionals expected to develop IT products and services by 2024, the need for these tools has never been greater. By enabling business users to take on tasks that would typically require professional developers, low- and no-code software is revolutionising the way businesses operate, allowing DevOps to reduce IT backlog and keep operating costs low.

This also helps close the gap between DevOps teams and the rest of the organisation, allowing developers to spend more time on the areas that can't be covered by low-code creation and testing. In return, organisations can upskill citizen developers to further bridge the tech talent gap. This streamlined approach can also be applied to applications built on a platform where updates are controlled by an external vendor. Low-code automated testing solutions can significantly reduce the time spent verifying platform updates, allowing DevOps teams to maintain constantly changing workflows with the same levels of high-quality software. In addition, by leveraging low-code/no-code technologies to reduce complexity, teams can quickly identify issues, triage the underlying causes and get to resolution faster than ever before.

The challenges of fully implementing low-code/no-code

Despite the benefits, the adoption of these tools remains slow, and as with any technology, there are limitations and challenges that must be considered. Many companies have yet to fully embrace the potential of low- and no-code software development and testing, leaving them vulnerable to talent shortages and increased costs.

One of the most significant challenges is the limited functionality of low-code platforms when it comes to customisation. If an organisation requires unique functionality that isn't available in the platform, it may be necessary for a software development team to write custom code. This can be costly and time-consuming, negating the benefits of the low-code approach.

Another common issue is ensuring the application performs as expected in a production environment. Whilst it may be easy to create a workflow for a single user, the load characteristics of an application can be vastly different when hundreds of thousands of users are using it simultaneously. It is important

> The rise of low- and no-code tools is therefore a game-changer for businesses facing talent shortages. With more than 80% of non-IT professionals expected to develop IT products and services by 2024, the need for these tools has never been greater

to ensure that applications created using low-code platforms can scale effectively. This is where load and performance testing tools can be beneficial. By leveraging these tools, organisations can better understand their application's load characteristics and make adjustments accordingly.

By considering these factors and leveraging the right tools, organisations can maximise the benefits of low-code development while minimising the potential drawbacks. Those that do are poised to reap the rewards, empowering their business users to solve complex problems and drive innovation.

Successfully leveraging low-code/no-code across the organisation

The current economic turbulence influences the software development market, with teams being streamlined and reshuffled to different projects. However, as businesses prioritise cost-cutting whilst trying to meet customers' demands, they can't afford to compromise on quality or velocity. It's clear that low- and no-code tools will play an increasingly important role in bridging the talent gap. By empowering non-developers to take on critical tasks, these solutions are helping transform how businesses operate and thrive in an ever-changing landscape.

By enabling developers to focus on unique, competitive features instead of commoditised functionality, low-code and no-code tools are helping businesses drive more value from their technology investments. Low-code/no-code software testing solutions now enable thinly stretched teams to do far more with less, achieving the previously impossible concept of quality at speed by simplifying and scaling test creation, orchestration, and execution in the cloud. Moreover, by leveraging these user-friendly, accessible technologies, they are able to bridge the talent gap and bring expertise from other areas of the business into play for a more efficient development process, granting developers more time to create value and advance strategic initiatives.

The rise of low-code/no-code testing

Low-code/no-code technology is making an impact across the software development lifecycle, including testing.

BY STEPHEN FELONEY, PERFORCE SOFTWARE

AS THE LATEST annual Perfecto State of Test Automation Report found, automated low-code and no-code test solutions are increasing in popularity, with almost 50% of survey's global respondents using codeless capabilities within existing testing frameworks.

With low-code/no-code testing, testers often also hear the terms 'codeless' and 'scriptless,' and within those definitions, varying degrees of 'codelessness' exist. Low code might mean some coding knowledge is necessary for more complex interactions, whereas with codeless, the entire test process is fully automated without injecting extra code.

Why Low Code & No Code Testing are Popular
The growth of low-code and no-code testing can be attributed to a few reasons, not least of which is helping to overcome the limited test resources many teams experience (a factor cited by 22% of the same survey's respondents). For example, consider the test skills traditionally required:
- Defining manual test scenarios and user story styles
- Creating scripts using languages that have to be learned
- Using IDEs that need to be learned
- Using conditionals and loops (if...then & while)
- Page-based test step creation
- Inserting visual validations and assertions

In time-pressured development projects with barely enough people to cover priority tasks, there is always the risk that tests become squeezed, which can affect software quality (and even security). It can be a tricky balancing act: testing is often viewed as a significant bottleneck in development, yet it is too important to compromise.

This is where low-code and no-code solutions come to the fore because they enable the entire team to carry out tests, regardless of their coding skills. Any user can create and execute tests. The need to know how to write (code) test scripts is removed, hence the reference to 'scriptless'.

### Scriptless Testing: Simplifying the Test Creation Process
As it has grown in popularity, scriptless testing has also become known as a true asset to testing teams because of how much it simplifies the test creation process. As testers use scriptless test creation for more repetitive and tedious test cases, it also saves
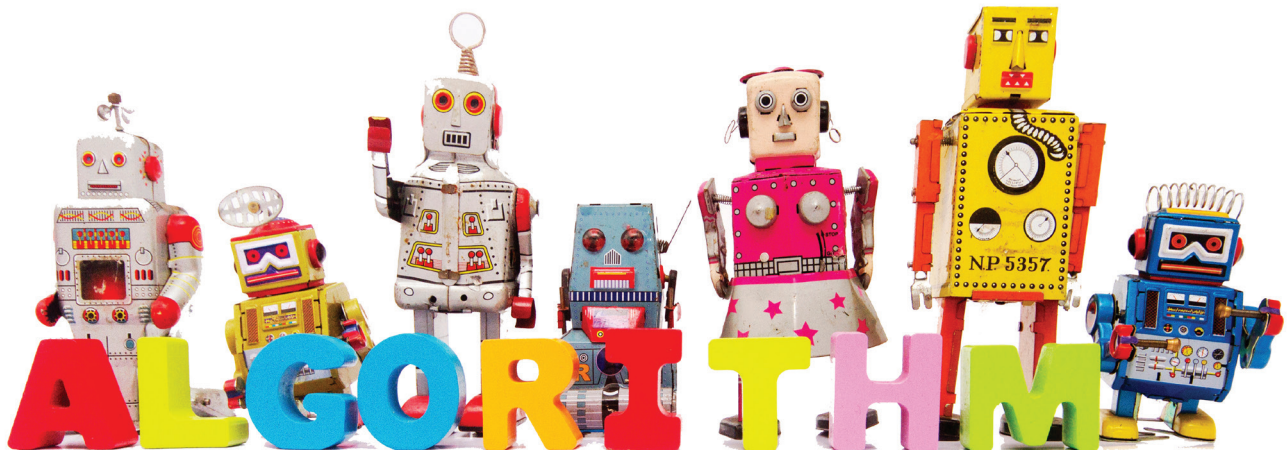
MANAGED SERVICES
SUMMIT
NORTH

21 NOVEMBER 2023

MANCHESTER CENTRAL, PETERSFIELD, MANCHESTER
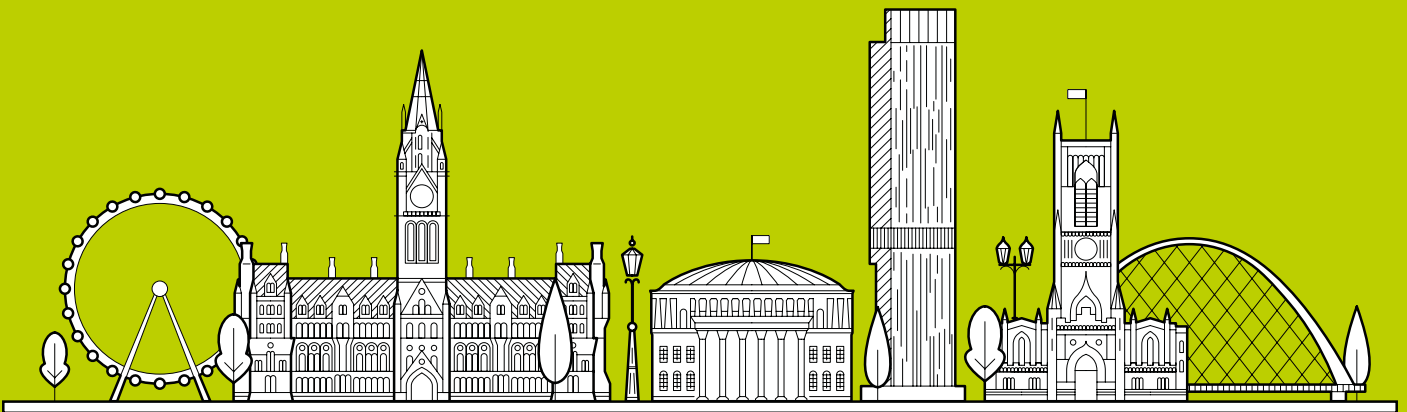
Managed Services Summit North (sister events in London and Amsterdam) are the leading managed services events for the UK and European IT channel. Featuring conference session presentations by major industry speakers, the Summit provides opportune networking breaks for delegates to meet with potential business partners. The unique mix of high-level presentations plus the ability to explore and debate the most pressing business issues with sponsors and peers across the industry makes this a must-attend event for any senior decision maker in the IT channel.

THEMES, TOPICS AND TRENDS

The Managed Services Summit will address the key trends and issues that impact the managed services sector including:

- How to build differentiation within an increasingly competitive market
- Maximise value and increase efficiencies for MSPs and their customers
- Increasing knowledge of new technologies, processes, and best practice

- Analysing trends in buyer behaviour and successful sales strategies
- Changes and trends in regulatory compliance
- Successfully adoption of Zero trust architecture (ZTA)
- Emerging advances in AI, automation and XaaS
- The state of cloud adoption, and hybrid and edge computing
- Hybrid and remote working best practice
- Addressing the growing cyber security skills gap
- Participation with local business community leadership organisations

TO DISCUSS SPONSORSHIP OPPORTUNITIES CONTACT:

Sukhi Bhadal
sukhi.bhadal@angelbc.com
+44 (0)2476 718970

Peter Davies
peter.davies@angelbc.com
+44 (0)2476 718970

Leanne Collins
leanne.collins@angelbc.com
+44 (0)2476 718970

https://north.managedservicessummit.com/

> A final but important point is that one of the key components of codeless testing is the concept of reusability. Regardless of whether web or mobile, when the GUI elements are recorded, they are automatically saved in a repository

a lot of time and resources. Even if the test is very complex, testers can use scriptless to get started and then convert to a script for the more complex elements. This is a common workflow among developers. A developer might start in an IDE, such as Microsoft Visual Studio, to quickly create the rote work and then manually code what had to be coded. Scriptless testing also supports shift-left testing, whereby the developers and/or agile testers can carry out more testing earlier in the SDLC but without significantly adding to the workloads. This allows developers to focus on what they do best: developing new features. Scriptless also contributes to continuous automated testing, which often fails because of scripting issues (according to 40% of organisations surveyed).

Consequently, test coverage (the volume and breadth of tests) can be expanded so that teams can be more confident that they are verifying code comprehensively. The first generation of scriptless testing tools first introduced a few years ago can also create automated tests, but they were high maintenance and static. Cut to today and modern scriptless test automation tools use of AI/ML for both creation and maintenance of tests. This has taken testing to a higher level of efficiency.

In turn, this means that business testers can reduce or even avoid manual tests, thus boosting velocity and team productivity, while also complementing test automation coverage managed by developers

and test professionals. In fact, it has been estimated that when combining code-based testing with scriptless automation, around 90% test automation coverage for regression tests could be achieved. That represents a dramatic improvementcompared to the test coverage levels most organisations experience right now.

Behavioural driven testing

Behavioural Driven Testing (BDD) is a popular form of low-code testing, making testing more accessible to the entire team, in turn improving speed and quality at scale.

Instead of code, BDD testing involves user-focused language to describe how an application should behave as part of the tests. Many BDD tests are written in a popular business-readable programmable language called Gherkin, which describes behaviour without detailing how it is implemented. Written in plain English, BDD tests make it much easier for teams to understand, collaborate and communicate while reducing the risk of anything becoming 'lost in translation' during development.

Repositories and Reusability

A final but important point is that one of the key components of codeless testing is the concept of reusability. Regardless of whether web or mobile, when the GUI elements are recorded, they are automatically saved in a repository. The purpose of the repository is for users to able to keep a track of the entities previously created for reuse. A common module could be created from frequently implemented entities and saved in the repository with the same reusability idea.

Reusability, self-healing, BDD, scriptless and use of AI/ML features are all examples of how testing benefits from low-code/no-code technologies. Low-code/no-code enhancements have been a great improvement to testing. There may be a near future where tests become ephemeral and are created "just in time."

From concept to business model

It's time for DevOps to take that next step.

BY MATT CLEMENTE, EVP AT LEMONGRASS

IMAGINE YOU'RE building a house. Different teams have different responsibilities, all entering and exiting the process at varying stages from beginning to end.

But the catch is, none of the teams are communicating with each other. The entire project is completed in siloes; teams are aware of the overall objective but they lack the direct channels between departments. Naturally, the job becomes 10 times harder.

This is a greatly simplified representation of the problem that development and IT operations teams have been tackling for years. Since Patrick Debois first coined the term 'DevOps' back in 2009, there have been debates around whether true convergence between these two departments has actually been achieved.

Regardless, huge strides have been made in bringing these two teams together, and this year is forecasted to feature milestone progress in this space. Naturally, the progress will extend far beyond one year, but we're approaching a time where

development and IT teams become one, unified by the governance of a process-based platform that enforces key technical and business requirements across the delivery lifecycle.

Here are four key trends that we can expect to gain momentum as the year progresses.

1. Closing the gap with low code
Low-code – using a development environment for application software through a GUI – has been gaining momentum across industries in recent years, and will be fundamental in the merge of DevOps. Removing the complexity of code makes the entire process accessible to teams, regardless of experience in writing code.

Furthermore, low code allows developers to play a more central role in writing configurations for software, thereby streamlining operations and reducing unnecessary risk as developers have full control over the configurations. Usually, IT operations would need to interpret the application based on the developer's guidance and implement the configurations accordingly.

Naturally, where there are benefits, there are also challenges. For example, low code comes with the risk of undetected security vulnerabilities in preconfigured code modules, as well as potential performance limitations of software.

Despite these challenges, we expect to see continued uptake of low code solutions in the coming year, which will be paramount to the convergence of DevOps.

2. The rise of Kubernetes

Originally designed by Google, now maintained by the Cloud Native Computing Foundation, Kubernetes (K8s) triumphed in the race for dominance as the top performing container orchestration system in 2017. And it's been on the rise ever since. Its popularity amongst IT operators and developers stems from a number of sources. For developers, Kubernetes delivers a consistent, predictable way to run applications, meaning Dev teams need not worry about addressing as many variables and edge cases when writing code.

On the other side of the table, IT operators are given a systematic and reliable way of deploying applications at scale. Again, we see here how the two sides are converging because of this.

3. The next stage of automation

This year, we can expect to see an automation evolution.

Where automation has predominantly been used by DevOps for automating software delivery processes, like Continuous Integration (CI) and Continuous Deployment (CD) of applications, teams are now using the technology to extend other elements of IT management and operations. Businesses will be making heavier use of automated testing to ensure application quality, for instance, and security teams will adopt automation to help remediate risks. Automation will help to bring even more velocity to both development and operation processes.

Traditionally, workflows like software testing or security response could become bottlenecks for DevOps teams. By automating these processes as much as possible, businesses reduce friction and make DevOps even faster and more efficient.

4. The rise of AI and ML

Where automation as a tool has been well established in the world of DevOps, artificial intelligence and machine learning are comparatively under deployed. And those companies that have already invested have found that the AI-powered tools they have are relatively simplistic on a functional level, limited mostly to basic pattern and anomaly detection. However, all this is changing now that AI-powered DevOps tools are capable of advanced functionality, like automatically rightsizing workload configurations or detecting security risks in complex access control settings..

By taking advantage of advancing AI and ML tools, Development and Operations teams can work together with greater efficiency because these tools address challenges that the two teams both tackle every day. The tools will also help all stakeholders in DevOps speak a common language and work towards common operations, security, and compliance goals – steps that are essential for achieving the complete convergence of Dev and Ops.

The convergence

After making steady progress towards achieving the intention behind 'DevOps', we're nearing the point of complete integration. As both teams from development and IT operations continue to work closely together, using increasingly intelligent technology to plug the gap between the two, DevOps will naturally evolve from being the concept that emerged over a decade ago, to a functional business model that achieves that which Debois had originally intended.

It's time to consider the business impact of APIs

A platform approach to APIs creates a digital core to flexible business outcomes

BY RICARDO DINIZ, VICE PRESIDENT & GENERAL MANAGER, EUROPE, WSO2

APIs need to be discussed in terms of business impact. For too long, the API (application programming interface) has been considered a pure technology topic. But with the need to digitise core business operations and deal with rising security threats, business and technology leaders must elevate API strategic discussions. Meanwhile, organisations need to end the hotchpotch of APIs that act as point solutions and adopt a modern integrated platform approach to APIs that will deliver business optimisation and improve the customer experience.

It is essential to look at the effect of APIs on the business, particularly as organisations deal with the three big impacts of war, recession, and inflation, which are putting pressure on all types of business. Moreover, APIs are a central pillar of three trends: digital transformation, improving data access and sharing and enhancing the customer experience, which were identified in a study we recently commissioned with research firm Vanson Bourne.

In the study, 58% of business technology leaders reported they were engaged with driving the digital transformation of their organisations, and half of those surveyed were heading up projects to increase the use of data for business insight. Just under half (49%) were delivering technology-led improvements to the customer experience. However, these three demands will not be met if developers are hindered in their ability to innovate through poor API integration.

APIs, therefore, can have a big impact on the organisation, enabling the CIO and their team to create a great customer experience and improve the operations of the organisation, which benefits colleagues with a better working environment. With infinite use cases from the very top of the organisation to the bottom of the supply chain, enterprises undergoing significant change must approach APIs with a strategic vision.

It is therefore concerning that 74% of organisations have not fully rolled out an API strategy, and 95%

are experiencing challenges with their customer identity access management (CIAM) platform. The research indicates that enterprises are not identifying the business objectives that they want to achieve with APIs.

Some of this stems from the arrival of the API in the technology stack; it was a technology that was often pushed by the IT department, leading to a lack of understanding or business line investment into the opportunities APIs offered.

The good news is that, as organisations embrace digitisation to deal with the economic pressure on the business, the benefits of APIs are better understood. Our survey found that 90% of enterprises in the UK and Ireland believe their developers would be better placed to innovate if the user experience was more connected for building, managing, and integrating APIs. And 84% believe that building, managing, and integrating APIs should be treated as one process rather than isolated aspects of the API lifecycle.

Platform build

Organisations embracing the opportunity offered by APIs are adopting a platform approach. Over 80% of the business technology leaders surveyed said the technology they currently use to build, manage and integrate APIs needs to be completely overhauled or has extensive room for modernisation.

Among executives surveyed, 45% say their organisations are looking to increase the speed that new digital products and services go to market, 48% want to enable more innovation, and 42% have increased security requirements. And, as the economic ecosystem becomes increasingly connected, 80% of these businesses are using or planning to use a single platform for employees, partners and suppliers.

But organisations are struggling. Over half (53%) say they face challenges in re-using existing APIs in new projects or business services. Existing API platforms are often hard to use and hinder efforts to build, integrate and manage APIs, according to 48% of business technology leaders. A similar number (47%) find that existing APIs limit the ability to customise APIs or scale - two key demands of the increasingly digital business environment.

A platform approach to APIs enables enterprises to optimise business processes, data flows, and customer services and increase security. Security of APIs is, unsurprisingly, highly important to transformation leaders, and 78% said their organisation is using an identity and access management (IAM) platform and 67% use a CIAM platform.

Digital core

The central problem is that not all APIs are equal. When an organisation defines an API, there must be

a planned and clear approach to what the business wants to achieve with it. This means having an agreed set of metrics between business lines and the IT department to measure and know the role of each and every API. This will allow the business to define which APIs can be monetised. For example, a major Spanish hotel chain is providing services to the banking sector as a result of being able to see which of its APIs can be monetised. At present, however, most enterprises are not able to monetise the full range of APIs within their estate because they don't have the right levels of metrics and governance in place.

APIs and integrated developer platforms, when managed effectively, become the digital core of the business, and as anybody that does yoga or pilates knows, a strong core makes every other form of exercise easier and more rewarding. A strong core enables other parts of the body to be more effective.

A good digital core does the same for the organisation, adding power to business processes, employees, digital customer services and the products the business is known for.

APIs, therefore, have the potential to create a big impact on the business and have to be considered in terms of this impact. Organisations looking to digitise, whether to deal with pressure points or meet the demands of their customers, have to discuss APIs not as a technology but as a method of delivering a business outcome.

A platform approach enables a more secure, efficient, and innovative digital business, one that has a digital core and monetisation opportunities.

Get ready for the Internet of Industrial Metaverses

The way we work is about to change - again, a major functional reinvention is happening in cyberspace and we're all invited to pick up a toolkit and learn a new trade.

BY ALESSANDRO CHIMERA, DIRECTOR OF DIGITALIZATION STRATEGY AT TIBCO, A BUSINESS UNIT OF CLOUD SOFTWARE GROUP

THIS IS THE ERA of the industrial metaverse, a wholly virtualised and abstracted environment where people and machines are represented by avatars and graphics all performing in an orchestrated ballet of digitally encoded workflows, tasks and functions.

Due to advancements in Augmented Reality (AR) and Virtual Reality (VR) headsets, but more fundamentally fuelled by a quantum leap in algorithmic logic alongside cloud-based compute power and processing, we can now enter an industrial metaverse that details a 3D virtual world as creative or specific as we can imagine. This is the age of the industry-specific or industrial metaverse and it is going to change the way many of us work at our desks, in our factories and out in the field.

The industrial metaverse

The impact of the industrial metaverse will be seen almost everywhere, from banking to baking to broadcasting and from pharmaceuticals to petrochemicals to professional services. For want of a clearly illustrative example, we can take

manufacturing as a vibrant development ground. Manufacturing plants filled with machine noise, people, paperwork and punchcards are a thing of the past. Today we still have some noise (although advancements in soundproofing are amazing), but the people-centric processes are being eroded, not just because of robots, but also because we have digitised the workflows across the factory floor to represent their execution with digital twins. As we now embrace the era of Industry 4.0 we know that manufacturers collect and use data to decide how to re-organise production and make the best data-driven decisions. This is a world where the maintenance manager maintains, they maintain rather than spend time checking machines, systems, workflows and all forms of equipment looking for potential problems. The responsibility for predictive maintenance detection, planning and scheduling is now a data-driven entity within the total workflow of an organisation; this is the manufacturing metaverse in action.

The industrial metaverse exists in and amongst the heavy crates of the manufacturing or petrochemicals plant just as it does in the chocolate sprinkles that adorn the fancy cakes produced by enterprise-scale bakery businesses.

This way of working isn't the sole preserve of Consumer-Packaged Goods (CPG) and tangible products we can hold in our hands or touch. We can apply the same family of AI engines and ML models to predict production issues in a plastics factory to the way a legal services firm operates.

Beyond the video games

If we think about the way the industrial metaverse is developing now, we need to get our minds past the slightly biased skew that stems from AR's application in games like Pokémon GO and the virtual construction zone world scenarios found in Roblox, Minecraft and so on.

From a practical point of view, we can see the potential for industrial metaverse AI and AR to connect to so many different operational entities (supply chain, procurement process, sales and after-sales) all the way down to the retailing process. A span that will extend right down to the level of which shelf a product should be on in a physical store, or which part of a web page it needs to be for virtual sales.

By applying industrial metaverse intelligence, we can also manage inventory management and ship products between stores. We know that product demand may fluctuate between seasons and based on consumer or enterprise trends, but it will also be impacted by 'events' in the real world. Imagine a scenario where a one-off big football match between two major clubs in a specific place might require promotional shirts to be shipped to a new location.

We are now embracing even more operational entities through the industrial metaverse and by using digital twins as key enabling foundations, we are able to improve efficiency. We can also use AI and AR to train workers on relatively complex tasks such as automotive maintenance.

Thinking even further, we know that employers want 'university-plus-one' (+1) trainees, i.e. where that plus-one element is one year's experience in another organisation. We can now train trainees to give that +1 year worth of immersive exposure to task or a role wholly and completely in the virtual space enabled by the industrial metaverse.

This dilemma is of course a challenge for the organisation's that lose their +1 talent after 365 days when they leave to work for the competition. Far better all round is a scenario where people can acquire the practical talents they need while at university inside a virtual factory or other workspace. This win-win approach produces +1 skills on day one, all with minimal investment from the employer.

Inside the working mechanics of the industrial metaverse, we see a marked increase in the amount of time and dedication companies spend concentrating on data quality, data management and data analytics. Because the industrial metaverse is always-on, managers can access inventory reports, product quality checks, supplier status alerts, plant or workplace production bottleneck alerts and every other conceivable aspect of operations that we can ascribe a digital measurement to.

Our zero human future

As we now build out the industrial metaverse, we may be headed to a point that we can call the 'zero human' future. This is a state of being where products and services are built, shipped, purchased and sold all with absolutely zero human intervention. There is no shopping or procurement or purchasing at any level, there is just a higher-level of data-centric user and enterprise preference logging that enables us to know what the supply pipe has to deliver.

Whether this slightly dystopian reality flattens out our taste for change, difference and diversity remains to be seen; what it will do for sure is to ensure constancy and consistency at the supply level, so perhaps we can harness that element for positive change.

There appears to be little doubt from a technology perspective that the foundations for the industrial metaverse are already in place. The challenges we face in terms of adoption may now come down to enabling these innovations to scale and shaping users' perceptions through various forms of change management and long-term vision evangelism.

Reality is still real, only more so now, remember to plug yourself in.
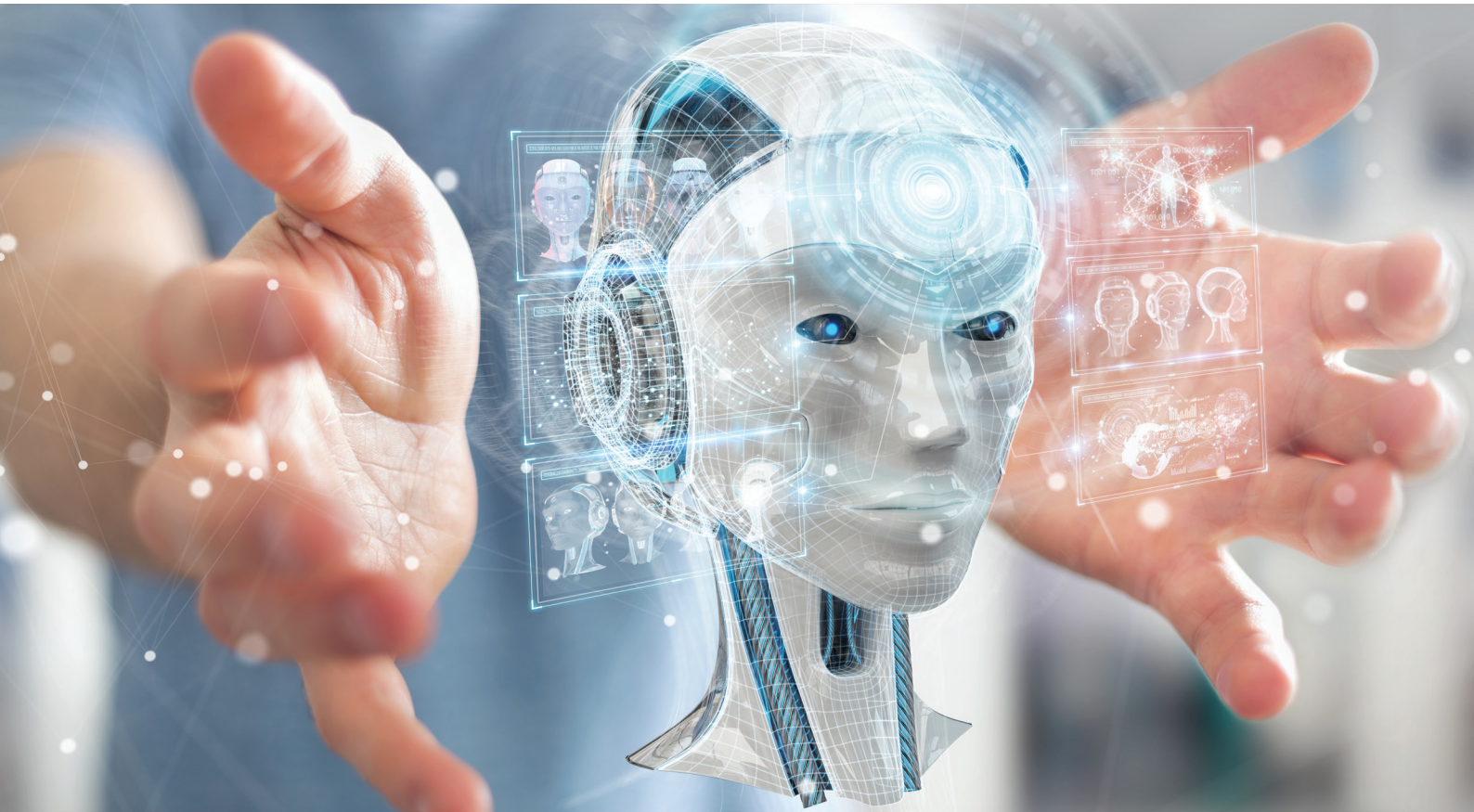
The art of artificial intelligence

How to drive successful AI projects in manufacturing

BY KIRSTY BIDDISCOMBE, UK HEAD FOR AI, ML & ANALYTICS AT NETAPP

IT HAS BEEN an exciting few months with the release of a series of ground-breaking artificial intelligence (AI) language models. These advancements in the technology have driven up its popularity this year, with many on the internet questioning if it means an android apocalypse is on the horizon.

However, in reality, AI's true potential lies in its ability to serve as a tool to streamline processes – no matter the size of the project. Whether that might be helping you craft a killer social media caption or curating an essential legal letter.

Proof of AI's increasing integration was highlighted in McKinsey's 2022 State of AI report. It showed that AI adoption has more than doubled since 2017, with 50% of organisations saying they now use AI in at least one business area. And this adoption has been helping businesses in industries such as retail and energy to innovatively serve the needs of their organisations and their customers. But manufacturing is where it's having one of the biggest impacts. AI-based products such as Machine

Learning (ML) and Deep Learning (DL) are facilitating smart factories that can optimise increasingly complex, multi-stage processes. These tools are enabling them to become more sustainable, efficient and cost-effective.

But the big questions for businesses just starting to integrate AI into their manufacturing processes are: how do I put these sophisticated tools to use in ways that optimises my operations – and where do I start?

Step one: Make data security your foundation
In recent years, businesses have neglected an essential pillar of high-performing AI solutions in manufacturing: secure data. Given the long-standing dependence on out-dated legacy systems, data storage has been much less of a priority.

But, mindsets have started to shift as manufacturing is becoming increasingly digitised. Businesses now understand the importance of not just collecting and inputting data, but safely storing it too – especially when it comes to protecting valuable intellectual

property. By prioritising this belief that effective manufacturing applications begin with data, we can more adequately plan for the successful delivery of AI-powered projects.

Enterprises need to ensure that they lay down the right groundwork for how to do this. They must keep the right balance between accessibility and safety to build up resilient solutions that shield partners and customers from growing cyber threats. With this approach, businesses can focus their energy on conducting experiments, while working to optimise and train algorithms.

Step two: Use data and AI as enablers
When it comes down to it, how you choose to approach your data management can make or break your efforts to enhance your projects. Currently, data scientists lose around 80% of their working hours on collecting, clearing, and detecting defective data – instead of creating actionable insights.

Clean data is essential for training AI algorithms so it can make more accurate predictions around priorities such as impending plant breakdowns or machine downtime. Better data hygiene helps businesses seamlessly integrate information into existing software programs. Then they can deploy AI to automate the process – driving better efficiency and productivity.

But this success rests heavily on the quality and quantity of the data it processes. So, the better the data, the more efficiently it will function. Think of it like the process of knitting a jumper. Your wool is your stored data, your knitting needles are the system that processes the data and your jumper is your finished project (or insight). Each bit of data that you input is one stitch in the whole process, so if you slip up, or miss a stitch, it could result in holes or lumps that make it inconsistent.

So, the process of creating the project is as much about preparing what you need as it is inputting each loop. In the same way that mistakes in your stitching lead to a less practical jumper, allowing inaccuracies in your data could affect the quality of your analysis – ultimately impacting your business' performance.

Step three: rationalise AI integration into your business operations
Implementing AI into manufacturing should strategically add value to the day-to-day functioning of your business. Leaders should consider what's needed for AI integration to be successful, considering costs, challenges and limitations. But with the right approach, it can result in quicker, cheaper, and more sophisticated processes.

Across manufacturing, AI integration might look like introducing intelligent machine maintenance, improving the efficiency of quality control, becoming more agile with supply chain management or increasing AI-powered automation for running better processes. Ensuring success in these areas is also about the people using the technology – how they use it, the way they embed it into the process, and whether they use it to its full potential. So, leaders need to focus on investing in the right people and tools in edge and cloud computing to help them embrace this innovation.

In today's market, AI has the potential to provide a huge competitive advantage for companies in manufacturing. But successfully achieving these benefits will come from their ability to truly transform their approach to data and digital strategy. If they can do this, it will prove AI's potential to completely transform supply chains of the future.