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In what has been, and continues to be, extraordinary times for the business world, it seems doubly important to recognise the projects, innovations and individuals which have made such a huge difference during 2022. Almost overnight, employees switched from office working to working from home, and the new, or next, normal, means that, into the future, what might be called a 'hybrid work' model looks set to evolve, with flexible working very much the order of the day. What was already becoming a trend as part of many organisations' digital transformation programmes, has been accelerated.

The SDC Awards 2022 will celebrate the achievements of end users and the IT community as they have innovated like never before to ensure business continuity in these challenging times. This year more than any other, please do make sure that you enter our SDC Awards. There's no limit to the number of entries, all of which are free of charge, and we'll be promoting all the short-listed entries via Digitalisation World's multi-media platform over the coming months, ahead of the awards ceremony. We really do want to celebrate and recognise the many amazing achievements which have come about in response to the coronavirus.

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SDC AWARDS 2022

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Editor's view

By Phil Alsop

The need for more diversity – Women in IT

WHAT STARTED as an idea from one of my work colleagues – to interview a handful of women working in the still somewhat male-dominated world of IT about their career experiences, the good and not so good – has quickly become a fairly substantial body of video interviews and articles, where 50+ women have shared their thoughts on a whole range of issues surrounding today's digital technology sector. Based on a standard set of questions, I have been amazed at the variety of responses.

The many different ways in which women have entered the IT sector, the varied experiences they have had once in it, the progress they have seen made when it comes to embracing diversity, the progress that still needs to be made and, crucially, the many suggestions made as to how to improve equality in the workplace, all build an amazing insight into the world of IT work as seen from a woman's perspective.

The good news seems to be that more and more organisations are realising that the more diverse the workforce, the more likely they are to be able to better understand their customers. In other words, diversity makes complete business sense.

The less good news – well, let's just say that there is still plenty of room for improvement. Although a majority of businesses are at least beginning to address the issues of diversity and equality within the workplace, the progress being made is somewhat glacial (as in pre-global warming glacial!). For example, Cranfield University's recent Female FTSE Report 2022 is critical of the slow progress of women being appointed into significant decision-making roles, such as Chair and CEO.

One interviewee's anecdote can stand for many – she told of a women's group meeting at her organisation where one male turned up by mistake, and stood around looking increasingly confused and embarrassed. The interviewee then politely explained to him that this was her world of work on an almost daily basis!

Digitalisation World's Women in IT content can be accessed in various ways, and I would urge all our readers to take some time to out to view the videos and read the articles to get a great understanding of where we are when it comes to diversity and equality and where we need to be.

There are some Women in IT articles in the latest issues of SDC Channel Insights and Date Centre Solutions. Issue 10 of Digitalisation World will gather all of the articles together in a Women in IT special. The videos will be sent out as a series of dedicated video magazines between now and the end of the year. And the DW, SDC and DCS websites have all of the articles and videos gathered as out latest Hot Topic, following on from the previous focus on the hybrid workplace.

Finally, a big thank you to all those who participated in the project. The conversations I have had were always interesting, entertaining and frequently educational, as are the many contributed articles. And I hope that the combined content – both in terms of quantity and quality – will encourage many to take a slightly different perspective on their workplace in future.

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We need to mobilise infrastructure change - and fast

By Shaun Lynn, CEO at Agilitas

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Global combined market down for first time in a quarter since 2016

Contracting activity, however, remains at near record levels.

GLOBAL SPENDING on IT and business services pulled back slightly in the third quarter amid rising economic concerns, though the volume of contracts signed in the quarter remained near all-time highs, according to the latest state-of-the industry report from Information Services Group (ISG), a leading global technology research and advisory firm.

Data from the ISG Index™, which measures commercial outsourcing contracts with annual contract value (ACV) of $5 million or more, show third-quarter ACV for the combined global market (both XaaS and managed services) at $23.2 billion, down 3 percent versus the prior year. It was the first year-over-year decline in a quarter for the broader market since the fourth quarter of 2016.

"Demand remains at an all-time high, but we are seeing some pullback in spending, as enterprises delay decision-making due to concerns about the economy," said Steve Hall, president of ISG. "Companies are still invested in ongoing digital transformation but are going slower for now."

Hall said ACV growth also was impacted by the strengthening U.S. dollar and difficult comparisons with the prior year as the market comes off record highs.

"We saw a period of sustained growth from the end of 2020 through the first quarter of 2022, but the comps are much tougher now," said Hall. "There are definitely some headwinds in the market, but we remain optimistic on the overall deal flow."

The ISG Index found a total of 661 managed services contracts were signed in the third quarter, up 3 percent versus the prior year. It was the second

most contracts ever signed in a quarter and the fourth time in the last five quarters award volume has surpassed 600 contracts. Among the awards this past quarter were three mega-deals – contracts worth more than $100 million per year – the lowest such quarterly volume in the last five years, which ISG attributes to timing issues.

Hall said providers are feeling pressure on their margins, due to rising inflation and higher labor costs in a tight labor market. "We do see pricing power for the most in-demand skill sets, but margins are falling for more commoditized services. This can be beneficial to enterprises looking to optimize their costs," he said. "We see providers responding with more automation, more innovation and other productivity measures."

Results by Segment
The cloud-based XaaS market saw its first down quarter since the beginning of 2015, with third-quarter ACV declining 4 percent versus the prior year, to $14.1 billion. At $10.5 billion, infrastructure-as-a-service (IaaS) was flat versus the prior year, while software-as-a-service (SaaS) declined 12 percent, to $3.6 billion.

Managed services spending, meanwhile, declined 1 percent, to $9.0 billion of ACV. This segment was buoyed by IT outsourcing (ITO), up 2 percent, to $6.8 billion, while business process outsourcing (BPO) slumped 10 percent, to $2.3 billion.

Year-to-Date Results
Combined market ACV for the first nine months rose 11.5 percent, to $71.8 billion. Managed services ACV reached $27.7 billion, up 6 percent, on record deal volume for the period – 1,992 contracts, up 11 percent. XaaS ACV came in at $44.1 billion, up 15 percent –

the slowest growth rate for this period since ISG began tracking the market for cloud-based services in 2015.

"The slowdown in XaaS spending comes down to weaker demand for infrastructure services provided by China's big four hyperscalers, which have been impacted by continuing lockdowns and the stronger U.S. dollar," Hall said. "The big three hyperscalers in the U.S. – AWS, Azure and Google Cloud – continue to carry this segment, although we're seeing growth slow slightly there as well."

Hall said growth in SaaS spending has also slowed, despite strong demand in such areas as IT service management, HCM, analytics and business intelligence. ISG, he said, sees the potential for even more slowing, as companies grow more cautious about spending on big, complex implementations.

Managed services continues to be paced by record demand for application development and maintenance services, even as demand for infrastructure services remains down for the year. BPO recorded it best nine-month performance ever, led by industry-specific services, and demand for engineering services remained robust, particularly in Europe.

2022 Forecast
ISG sees economic uncertainty caused by rising interest rates, energy shortages, supply chain disruptions and continuing inflation dampening enterprise demand in the near term. "Given current demand, we are maintaining our growth forecast for managed services at 3.5 percent for the year, but lowering our growth forecast for XaaS to 10.5 percent, from 18 percent last quarter," Hall said.

Public cloud adoption is stagnating as preference for hybrid cloud grows

Survey carried out in partnership with Cloud Industry Forum reveals need to enhance support for companies looking to make the most of hybrid cloud.

SURVEY CARRIED OUT in partnership with Cloud Industry Forum reveals need to enhance support for companies looking to make the most of hybrid cloud.

New research from Fujitsu UK – in conjunction with the Cloud Industry Forum (CIF) – has revealed that 60% of organisations have a hybrid cloud strategy in place, comfortably ahead of the 36% that embrace a cloud-first arrangement. This underlines how the appetite for public cloud is decreasing as more businesses opt for the convenience and flexibility of hybrid, indicating that cloud providers should optimise their hybrid offerings to meet this demand.

The data was taken from the joint Fujitsu UK and CIF white paper The transformational impact of cloud. While the desire to embrace cloud – and in particular hybrid cloud – remains high, the research also found that 58% of respondents said their company struggles to keep up with new cloud technology, while 57% said cloud has introduced more complexity to the organisation. The prime concern on the minds of leaders is that new technology will fail to integrate with legacy technology (mentioned by 44%), which demonstrates the need for better support for companies increasing their cloud adoption.

Graham Bromham, Head of Regional Sales & Service Providers at Fujitsu UK, said: "Cloud continues to offer great potential in helping companies transform their approach to IT and deal with future challenges, providing they receive support to make these projects a long-term success.

"It is clear from the research that many businesses still need assistance in making this happen, particularly when it comes to integrating legacy applications as cloud-based approaches become increasingly common."

This need for greater support is especially pertinent when looking to the future: 88% expect to accelerate their cloud adoption in the next 12 months, while 42% consider cloud migration one of their organisation's most important IT projects (second only to cybersecurity on 58%). Further, 80% cite cloud infrastructure as an important technology over the next five years, while 68% mention cloud SaaS.

Bromham added: "A company's choice of cloud approach is very much a workload-dependent decision. There are applications and workloads perfectly suited to a cloud or SaaS approach, but the time, risk and cost associated with refactoring and migrating legacy workloads are often barriers to successful cloud adoption."

He concluded: "This is why the appetite for hybrid cloud is particularly strong. The most successful cloud providers will be those who can deliver this effectively for their customers as they decide the future direction of their IT estate."

Decentralised IT comes under scrutiny

ManageEngine has published the findings of its latest research. It found that almost all organisations globally (94%) are on the path to decentralisation of IT. In stark contrast, however, almost a third (31%) of companies in the UK have no plans to decentralise IT.

MANAGEENGINE has published the findings of its latest research. It found that almost all organisations globally (94%) are on the path to decentralisation of IT. In stark contrast, however, almost a third (31%) of companies in the UK have no plans to decentralise IT.

The report, IT at Work: 2022 and Beyond, draws from a global survey on the empowerment and democratization of IT. ManageEngine commissioned independent market research agency Vanson Bourne to conduct the research. Responses were received from 3,300 decision makers from across IT and line of business functions, including 300 in the UK

and Ireland. It found that around the globe, IT departments are responding to the trend for personalised IT by decentralising their IT structure. Two-thirds (64%) of organisations globally have already decentralised, with a further 30% currently attempting to do so. In the UK and Ireland, respondents said the decentralisation drive has been spurred by a desire for innovation (55%) and to acknowledge IT's role more prominently (51%).

Eight out of 10 respondents (79%) claim non-IT employees in their organisation are more knowledgeable about IT than they were before 2020, which is increasing the appetite for rapid, accessible innovation.

However, concerns that decentralised IT functions will open the door to fraudsters are leading many businesses in the UK and Ireland to maintain their own IT sovereignty, and with good reason; those on the path to decentralisation cite IT security as their main concern (47%) followed by maintaining regulatory structure and reliability of ongoing support (both 41%).

Other key findings are as follows:
IT Teams Face Bigger Expectations But Have Limited Influence
Eight out of 10 (82%) respondents said collaboration between IT teams and other departments has increased over the last two years. This is partly because autonomy in decision-making is increasingly common across departments, placing more technology choices into each department's hands. However, collaboration is not always harmonious. Although business decision-makers report feeling IT has an important advisory role in decision-making across departments, one in five (19%) IT leaders feel they are "not consulted at all" or "consulted inadequately" about flexible working models.

This speaks to other findings indicating that although IT leaders face higher expectations post-pandemic, innovation is being stifled by the under-representation of IT teams at a leadership level (according to 79% of respondents). Although the vast majority (89%) believe IT is more responsible for business innovation than ever before, 59% believe IT is not expected to drive innovation, but simply assist innovators. This might be an unsustainable state of affairs: IT professionals report that, in terms of the next five years, they are most motivated by a desire to guide change (22%) rather than by the prospect of promotion (19%) or the chance to gain new skills (15%).

IT Owns Security
The majority of companies claim to be exposed to risk, with 74% believing that to protect their business from cyberattacks, existing security strategies must change. Of business decision makers, 95% believe IT departments have considerable authority to prevent business decisions based on security concerns. Likewise,

of these respondents, 61% believe IT approval is required for decisions relating to security, which would give IT more influence in this area than any other department.
Nearly a quarter (23%) of UK companies hold all employees accountable for cyberattacks, compared to a mere 7% worldwide. The need to protect personal data is the key motivator for this over company performance concerns, and 73% believe employees try to help protect their organizations against threats.

IT Teams Are Feeling the Pressure
Underpinning all these factors is that economic uncertainty is beginning to be felt by IT teams. The job market is slowing down, leading 59% of IT professionals to hold off looking for new positions. More worryingly, the majority (52%) are more nervous about losing their job than they were six months ago. These sentiments are strongly influenced by the impacts of the pandemic. Almost half of IT professionals (45%) say they feel less loyal to their employer than they did two years ago, and six in 10 (62%) employees are not satisfied with the level of support they received during the pandemic. Unsurprisingly, flexible working models are now the most important factor in job retention (56%), followed closely by pay increases in line with inflation (55%), a need felt strongly during the cost-of-living crisis.

Arun Kumar, regional director at ManageEngine, says: "Post the pandemic, it has become crucial for organisations to focus on various functions, specifically IT functions. It is imperative for IT to become more democratized and empowered. We believe the important statistics derived from this survey will shed light on the current scenario in the UK market and draw attention to the factors that command immediate action."

Cloud trust in decline

Leaseweb Global has published the results of research revealing that over half (55%) of UK IT professionals currently trust public cloud services less than they did two years ago, having run into challenges around usage costs, migration and customer service.

THE RESEARCH, which explores 500 UK-based IT professionals' experience with public cloud providers over the last two years, raises questions whether hyperscale is the best way forward or viable as a long-term option. Transparency, customer service and the ease of migrating workloads are flagged as potential concerns, despite most respondents saying they had costs under control. Overall, the results indicate a significant trust issue when it comes to public cloud providers.

For example, the majority (57%) of respondents had found it challenging to migrate workloads out of a public cloud environment, while just under half (49%) said they had encountered difficulties in understanding their cloud usage costs. Despite this, nearly three quarters (72%) agree they have effectively controlled public cloud usage costs, while 46% stated they 'somewhat agree'. Almost half (49%) had struggled to get hold of a public cloud provider's customer services.

In addition, while cloud is now a key component for many IT infrastructure strategies, 'cloud only' and 'cloud first' are not dominant, nor are they considered a panacea for every business need. While there was an increase in the adoption of cloud infrastructure during the pandemic, the study also showed a decrease in support for 'cloud first' strategies during 2022.

For instance, in the January 2019-December 2021 ("pre COVID pandemic") period, 36% of organisations described their approach to IT infrastructure as 'cloud first', with only 19% stating their organisation was officially committed to a 'cloud-only' approach. From January 2022 onwards, the ("post COVID pandemic") period, 'cloud first' commitments had decreased to 31%, with 'cloud only'

rising to 25% of respondents. When asked about the optimum IT infrastructure for their organisation, private cloud only (23%) and a mixture of on-premise and public cloud (20%) were the most popular selections. These were followed by public cloud only (17%) and a mixture of on-premises and private cloud (14%), with on-premises only the least popular selection at 7%.

The move away from on-premise legacy infrastructure is clear, with two-thirds (66%) of respondents agreeing that the industry will see the end of on-premise infrastructure over the next two years. The research results indicate that while on-premises is not an important part of IT strategy, it still exists within many organisations' environments.

The positive news is this does not appear to be stifling innovation: only 16% of respondents said that legacy infrastructure was either standing in the way of further cloud adoption or limiting their organisation's ability to make business decisions. Instead, the focus is on deploying applications in the right place, with a key takeaway from the study being the end of on-premises

infrastructure may be approaching, but not quite here.

"The results of this study strengthen the case for hybrid combinations thanks to the flexibility and choice it can deliver to both large and small companies," commented Terry Storrar, Managing Director UK at Leaseweb. "And much as there has been a shift towards cloud adoption, rather than highlighting the pandemic as a key driver of a shift to the cloud, it appears that businesses were investing in cloud beforehand and that investment levels have remained relatively static," continued Storrar. "Although respondents acknowledge that the desire and need to look after on-premises infrastructure is dying, the results also indicate that businesses are still using it as an ongoing component of their IT infrastructure when adopting hybrid cloud. The key takeaway from this research is IT teams are looking for flexibility - there's no one size fits all approach. Organisations are now more likely to qualify cloud out during the assessment stage, rather than the other way around, but the main focus is on choosing the right infrastructure locations for specific use cases," concluded Storrar.

Multiple clouds deliver data value

But data sovereignty is a concern for the majority, VMware research reveals.

BY 2024, 95% of organisations across EMEA will be looking to their data as a revenue driver, with 46% recognising it as a significant source of revenue – up from 29% today. This is according to new research announced by VMware Inc.

The research, entitled The Multi-Cloud Maturity Index, was conducted amongst almost 3,000 business and IT decision makers across EMEA, and reveals that nearly half (47%) strongly agree that using multiple clouds will enable them to maximise their data to innovate – while addressing critical issues such as national and sector data sovereignty. In fact, data sovereignty is highlighted as one of the key challenges facing organisations – with 95% admitting it's a concern.

The ambition to realise more value from data, however, comes with additional challenges. Security (35%), skills (35%), difficulty stitching different cloud environments together (31%) and siloed access to data (27%) remain key obstacles.

Organisations must also improve the control they have over their operational and cloud expenses, with 76% and 74% respectively agreeing this is a concern if data is to drive genuine business value.

This digitisation will improve the customer experience with greater personalisation, increase operational efficiency at headquarters as well as in stores, and have a positive effect on the Group's revenue," explains customer, Damien Cazenave, CTO and CISO Carrefour France, a leading global

retailer. There is agreement (86% of respondents) that the benefits of multi-cloud – the ability to use and manage different types of private, public, edge and sovereign clouds – outweigh the challenges.

Almost half (46%) believe multi-cloud use has had a very positive impact on revenue growth, while 46% also believe it has had a very positive impact on profitability. In fact, only 4% believe multi-cloud is not critical to business success.

And this is even better news for organisations across Europe, where the data economy's impact on GDP in the European Union and UK is expected to grow to 4.2% from 2.6% by 2025, according to the European Commission.

Quantifying cloud value

THE HACKETT GROUP study, which examines results from more than 1,000 organizations and looked at more than 4,000 migrated applications in 15 different categories, found that 70% of all technology infrastructure will be cloud-based within two to three years. Typical companies are seeing post-migration reduction in technology infrastructure costs of 12%. Other significant benefits include:

- A 36% increase in developer time devoted to innovation
- A 45% reduction in time to market for new product features and functionality
- A 53% reduction in the time to achieve actionable insights From data
- A total of 44% fewer security and other critical infrastructure incidents
- And a 52% average reduction in down-time

Top performers in the study saw even more dramatic benefits, including a 37% reduction in technology infrastructure costs (more than 3x of what typical companies achieved) and an average of 15 percentage points greater improvement across nearly a dozen objectives tracked in the study.

According to The Hackett Group Principal Michael Fuller, "This study was designed to look beyond the hype and truly quantify the benefits of both moving to the cloud and maximizing the benefits of cloud infrastructure. And the

results clearly show that companies are using the cloud to deliver broad strategic value. It's about better security, improved speed, quality, and agility. At its best, cloud migration can be the foundation that allows companies to rapidly improve their products and services."

The Hackett Group Senior Research Director Richard Pastore added, "We also came to conclusions about the differences between typical companies and top performers. To truly drive the maximum benefit, top performers make the cloud part of their operating DNA and treat it as a core competitive strategy. They reject the easier application 'lift and shift' approach to cloud migration. Instead, they assess their workloads to determine the proper migration methodology and focus on optimizing them in the cloud, which often means rearchitecting or redesigning their systems and processes to take best advantage of what the cloud can offer."

The Hackett Group released the study as part of the launch of its new Cloud Value Assessment Services Offering, a service designed to help companies understand how to optimize the management of current applications in the cloud and future migration to the cloud. The assessment leverages The Hackett Group's detailed performance metrics and benchmark taxonomy and takes just four weeks, as little as a third the time of a full benchmark assessment to complete.

Gartner identifies the Top 10 strategic technology trends for 2023

Gartner, Inc. has published its list of 10 top strategic technology trends that organizations need to explore in 2023.

"TO ENHANCE their organization's financial position during times of economic turbulence, CIOs and IT executives must look beyond cost savings to new forms of operational excellence while continuing to accelerate digital transformation," said Frances Karamouzis, Distinguished VP Analyst at Gartner. "The Gartner strategic technology trends for 2023 are built around three themes — optimize, scale and pioneer — where technologies can help organizations optimize resilience, operations or trust, scale vertical solutions and product delivery, and pioneer with new forms of engagement, accelerated responses or opportunity."

"However, in 2023, delivering technology will not be enough. These themes are impacted by environmental, social and governance (ESG) expectations and regulations, which translate into the shared responsibility to apply sustainable technologies. Every technology investment will need to be set off against its impact on the environment,

keeping future generations in mind. 'Sustainable by default' as an objective requires sustainable technology," said David Groombridge, Distinguished VP Analyst at Gartner.

The top strategic technology trends for 2023 are:

Sustainability

Sustainability traverses all of the strategic technology trends for 2023. In a recent Gartner survey, CEOs reported that environmental and social changes are now a top three priority for investors, after profit and revenue. This means that executives must invest more in innovative solutions that are designed to address ESG demand to meet sustainability goals. To do this, organizations need a new sustainable technology framework that increases the energy and material efficiency of IT services, enables enterprise sustainability through technologies like traceability, analytics, renewable energy and AI, and deploys IT solutions to help customers achieve their own sustainability goals.

Pioneer

Metaverse

Gartner defines a metaverse as a collective virtual 3D shared space, created by the convergence of virtually enhanced physical and digital reality. A metaverse is persistent, providing enhanced immersive experiences. Gartner expects that a complete metaverse will be device-independent and won't be owned by a single vendor. It will have a virtual economy of itself, enabled by digital currencies and non-fungible tokens (NFTs). By 2027, Gartner predicts that over 40% of large organizations worldwide will use a combination of Web3, AR cloud and digital twins in metaverse-based projects aimed at increasing revenue.

Superapps

A superapp combines the features of an app, a platform and an ecosystem in one application. It not only has its own set of functionalities, but it also provides a platform for third parties to develop and publish their own mini-apps on. By 2027, Gartner predicts that more than 50% of the global population will be daily active users of multiple superapps.

"Although most examples of superapps are mobile apps, the concept can also be applied to desktop client applications, such as Microsoft Teams and Slack, with the key being that a superapp can consolidate and replace multiple apps for customer or employee use," said Karamouzis.

Adaptive AI
Adaptive AI systems aim to continuously retrain models and learn within runtime and development environments based on new data to adapt quickly to changes in real-world circumstances that were not foreseen or available during initial development. They use real-time feedback to change their learning dynamically and adjust goals. This makes them suitable for operations where rapid changes in the external environment or changing enterprise goals require an optimized response.

Optimize
Digital Immune System
Seventy-six percent of teams responsible for digital products are now also responsible for revenue generation. CIOs are looking for new practices and approaches that their teams can adopt to deliver that high business value, along with mitigating risk and increasing customer satisfaction. A digital immune system provides such a roadmap.

Digital immunity combines data-driven insight into operations, automated and extreme testing, automated incident resolution, software engineering within IT operations and security in the application supply chain to increase the resilience and stability of systems. Gartner predicts that by 2025, organizations that invest in building digital immunity will reduce system downtime by up to 80% - and that translates directly into higher revenue.

Applied Observability
Observable data reflects the digitized artifacts, such as logs, traces, API calls, dwell time, downloads and file transfers, that appear when any stakeholder takes any kind of action. Applied observability feeds these observable artifacts back in a highly orchestrated and integrated approach to accelerate organizational decision-making.

"Applied observability enables organizations to exploit their data artifacts for competitive advantage," said Karamouzis "It is powerful because it elevates the strategic importance of the right data at the right time for rapid action based on confirmed stakeholder actions, rather than intentions. When planned strategically and executed successfully, applied observability is the most powerful source of data-driven decision-making."

AI Trust, Risk and Security Management
Many organizations are not well prepared to manage AI risks. A Gartner survey in the U.S, U.K. and Germany found that 41% of organizations had experienced an AI privacy breach or security incident. However, that same survey found that organizations that actively managed AI risk, privacy and security achieved improved AI project results. More of their AI projects moved from proof-of-concept status into production and achieved more business value than did AI projects in organizations that did not actively manage these functions.

Organizations must implement new capabilities to ensure model reliability, trustworthiness, security and data protection. AI trust, risk and security management (TRiSM) requires participants from different business units to work together to implement new measures.

Scale
Industry Cloud Platforms
Industry cloud platforms offer a combination of SaaS, platform as a service (PaaS) and infrastructure as a service (IaaS) providing industry-specific sets of modular capabilities to support specific industry business use cases. Enterprises can use the packaged capabilities of industry cloud platforms as building blocks to compose unique and differentiating digital business initiatives, providing agility, innovation and reduced time to market, while avoiding lock-in. By 2027, Gartner predicts that more than 50% of enterprises will use industry cloud platforms to accelerate their business initiatives.

Platform Engineering
Platform engineering is the discipline of building and operating self-service internal developer platforms for software delivery and life cycle management. The goal of platform engineering is to optimize the developer experience and accelerate product teams' delivery of customer value.

Gartner predicts that 80% of software engineering organizations will establish platform teams by 2026 and that 75% of those will include developer self-service portals.

Wireless Value Realization
While no single technology will dominate, enterprises will use a spectrum of wireless solutions to cater for all environments, from Wi-Fi in the office, through services for mobile devices, to low-power services and even radio connectivity. Gartner predicts that by 2025, 60% of enterprises will be using five or more wireless technologies simultaneously.

As networks move beyond pure connectivity, they will provide insight using built-in analysis and low-power systems will harvest energy directly from the network. This means the network will become a source of direct business value.

This year's top strategic technology trends highlight those trends that will drive significant disruption and opportunity over the next five to 10 years. Gartner clients can read more in the Gartner Special Report "Top Strategic Technology Trends for 2023."

Gartner forecasts worldwide IT spending to grow 5.1% in 2023

WORLDWIDE IT spending is projected to total $4.6 trillion in 2023, an increase of 5.1% from 2022, according to the latest forecast by Gartner, Inc.

DEMAND for IT in 2023 is expected to be strong as enterprises push forward with digital business initiatives in response to economic turmoil.

"Enterprise IT spending is recession-proof as CEOs and CFOs, rather than cutting IT budgets, are increasing spending on digital business initiatives," said John-David Lovelock, Distinguished VP Analyst at Gartner. "Economic turbulence will change the context for technology investments, increasing spending in some areas and accelerating declines in others, but it is not projected to materially impact the overall level of enterprise technology spending. "However, inflation has cut into consumer purchasing power in almost every country around the world. Consumer purchasing power has been reduced to the point that many consumers are now deferring 2022 device purchases until 2023, driving spending on devices down 8.4% in 2022 and 0.6% in 2023."

The technologies that are being maintained versus those that are driving the business are evident by their projected growth rates in 2023. There is sufficient spending within data center markets to maintain existing on-premises data centers, but new spending continues to shift to cloud options, as evidenced by the 11.3% projected growth for software spending in 2023 (see Table 1).

Organizations Continue to Protect Efficiency-Driven Digital Investments

In a down or deteriorating economy, conventional wisdom calls for reducing costs, including IT costs. However, a July 2022 Gartner survey of more than 200 CFOs found that 69% plan to increase their spend on digital technologies, while the 2023 Gartner CIO and Technology Executive Survey found that CIOs are being tasked with accelerating time to value on digital investments.

"Companies will use digital technology primarily to reshape their revenue stream, adding new products and services, changing the cash flow of existing products and services, as well as changing the value proposition of existing products and services," said Lovelock. This trend has fed the shift from buying technology to building, composing and assembling technology to meet specific business drivers. This shift is foundational to the growth of cloud over on-premises for new IT spending. However, as organizations look to also realize operations efficiency, cost reductions and/or cost avoidance during the current economic uncertainty, more traditional back-office and operational needs of departments outside IT are being added to the digital transformation project list."

	2021 Spending	2021 Growth (%)	2022 Spending	2022 Growth (%)	2023 Spending	2023 Growth (%)
Data Center Systems	189,506	6.1	209,190	10.4	216,262	3.4
Software	732,030	14.8	790,385	8.0	879,625	11.3
Devices	807,580	15.8	739,982	-8.4	735,394	-0.6
IT Services	1,207,966	12.8	1,258,150	4.2	1,357,914	7.9
Communications Services	1,459,483	3.8	1,435,401	-1.7	1,469,220	2.4
Overall IT	**4,396,565**	**10.2**	**4,433,108**	**0.8**	**4,658,416**	**5.1**

➤ Table 1. Worldwide IT Spending Forecast (Millions of U.S. Dollars)

Source: Gartner (October 2022)

CELEBRATING 13 YEARS OF SUCCESS

Announcing the 13th edition of the premier IT awards: **DCS AWARDS 2023.** The DCS Awards continue to go from strength to strength – testament to the data centre industry's continuing innovation and excellence at a time of significant global disruption. Sky high energy prices, ongoing sustainability challenges, supply chain issues, geopolitical instability – all having a significant impact on the data centre sector. And, as the saying goes: 'When the going gets tough, the tough get going'. The data centre industry has responded magnificently as it helps its customers on their digital transformation journeys, with a range of new ideas, services, products and technology ideas.

The DCS Awards will, once again, celebrate the data centre industry's impressive achievements, recognising customer success stories, technology innovation and both individual and company contributions to the sector. We've made a few changes to the awards categories to reflect industry changes (we're particularly pleased to have added the Rising Star award, as well as Best Company to Work for awards), but what we haven't changed is the successful formula that sees several hundred nominations, which are then turned into a short list for voting, and culminate in a great evening in London, where the winners are acclaimed and the industry gets together for a great night of eating, drinking, comedy and celebrating.

HOW CAN YOU BE INVOLVED?

Right now, it's time to get nominating! Whether you want to nominate your own company, staff members and/or customers, we're sure there's at least one category which is just right for you across the 30+ project, innovation and various other categories. It's also a good time to look at our sponsorship and marketing opportunities, as they work alongside the nomination and voting process. The sooner you're involved, the sooner we can start promoting your company. You'll see we have a range of packages, and we're confident that the innovations we introduced as part of the virtual awards will continue to add value ahead of this year's physical event. So, zoom interviews, extensive social media promotion, magazine interviews all offer great visibility, alongside the more obvious marketing activities on the Awards' website itself, and the associated marketing email campaign.

Finally, while May 2023 might seem a long way away, make sure you put the date in your diary and make sure to reserve a table.

WHY ENTER?
MAXIMISE VISIBILITY
Free PR opportunities with 5 months of marketing utilising the DCS portfolio.

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Position your product or service as an innovator in your field.

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Gain an advantage on your competitors.

NOMINATION IS FREE OF CHARGE
The DCS Awards panel will validate entries and announce the final shortlist to be forwarded for voting by the readership of the Digitalisation World publications.The winners will be announced at a gala evening at the **Leonardo Royal Hotel London St Paul's, London** on the **25 May 2023.**
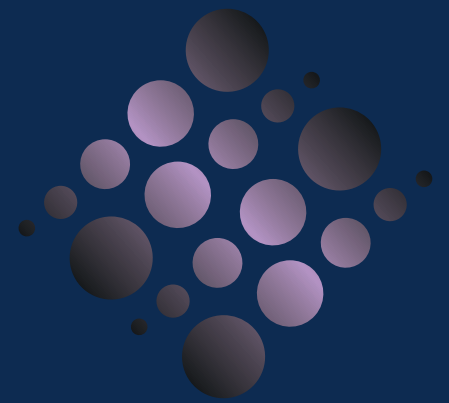
DCS AWARDS 2023

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Growth in global cloud services spend slows to lowest rate ever in Q3 2022

Worldwide cloud infrastructure services expenditure increased 28% year on year to reach US$63.1 billion in Q3 2022, up US$13.8 billion on the same period a year ago.

WITH THE NEGATIVE IMPACT of inflation and rising energy prices, companies are responding to market uncertainty by reducing spending, which may hit demand for cloud services in the short term. Coupled with the strong US dollar, the annual growth rate fell below 30% for the first time. Amazon Web Services (AWS), Microsoft Azure and Google Cloud remained the top three providers in Q3 2022, together accounting for 63% of global spend after growing 33%.

Long-term demand for enterprise digitalization remains strong, as the move to cloud remains the best way for today's businesses to do more with less. But the impact of inflation and recession on the cloud services market was evident, with most top cloud vendors missing revenue targets in the quarter.

"Under economic pressure, enterprise customers are choosing to reduce operational risks by lowering their IT budgets," said Canalys VP Alex Smith. "Despite winning large deals and having a backlog of contracts to fulfill, the growth of cloud vendors will be constrained because of inevitable project delays as some customers get skittish about the economic outlook. Hyperscalers will face a period of rising costs and lower revenue growth, which may lead to more conservative planning in 2023. We predict the hyperscalers will need to increase their prices in Europe by 30% to account for rising energy costs." AWS was the leading cloud service provider in Q3 2022, accounting for 32% of total spend after growing 27% on an annual basis. Despite slower-than-expected growth this quarter, AWS announced new commitments and migrations from customers across many industries and geographies.

Hyperscalers are continuing to roll out new infrastructure to reach new customers globally. At the same time, they are trying to find the next products and technology advances that will drive business growth

It continues to expand its infrastructure footprint worldwide to support customers, with the opening of its second region in the UAE and plans to launch new regions in Thailand.

Azure came second with a 22% market share after growing 35% annually. Growth was driven by strong renewal execution. Historically, Microsoft's cloud business unit has seen stable revenue performance, with a declines brought about only by quarterly variations.

Microsoft continues its push to host more of its own services on Azure. It announced the launch of its new data center region in Qatar, marking a major achievement for the company as the first hyperscaler to deliver enterprise-grade services in the country.

Google Cloud's growth rate accelerated once again, up by 48%, boosting its market share in the global cloud services market to 9%. In addition to its strength in the consumer sector, it gained opportunities from the public sector and governments this quarter. It announced new Google

Cloud regions in Asia Pacific, located in Malaysia, Thailand and New Zealand.

"Hyperscalers are continuing to roll out new infrastructure to reach new customers globally. At the same time, they are trying to find the next products and technology advances that will drive business growth," said Canalys Research Analyst Yi Zhang. "The increased adoption of cloud services has stimulated thoughts about the value that can be extracted from data in the cloud. Both Google and Microsoft emphasized their development of products around data and AI. The future cloud service market is expected to achieve value creation with the introduction of data and AI."

Canalys defines cloud infrastructure services as those that provide infrastructure-as-a-service and platform-as-a-service, either on dedicated hosted private infrastructure or shared public infrastructure.

This excludes software-as-a-service expenditure directly but includes revenue generated from the infrastructure services being consumed to host and operate them.

The top three cloud service providers accounted for 63% of total cloud spend in Q3 2022

Worldwide cloud infrastructure services spend, Q3 2022

Others 37%

AWS 32%

Q3 2022 US$63.1 billion

Microsoft Azure 22%

Google Cloud 9%

Source: Canalys estimates, November 2022

canalys
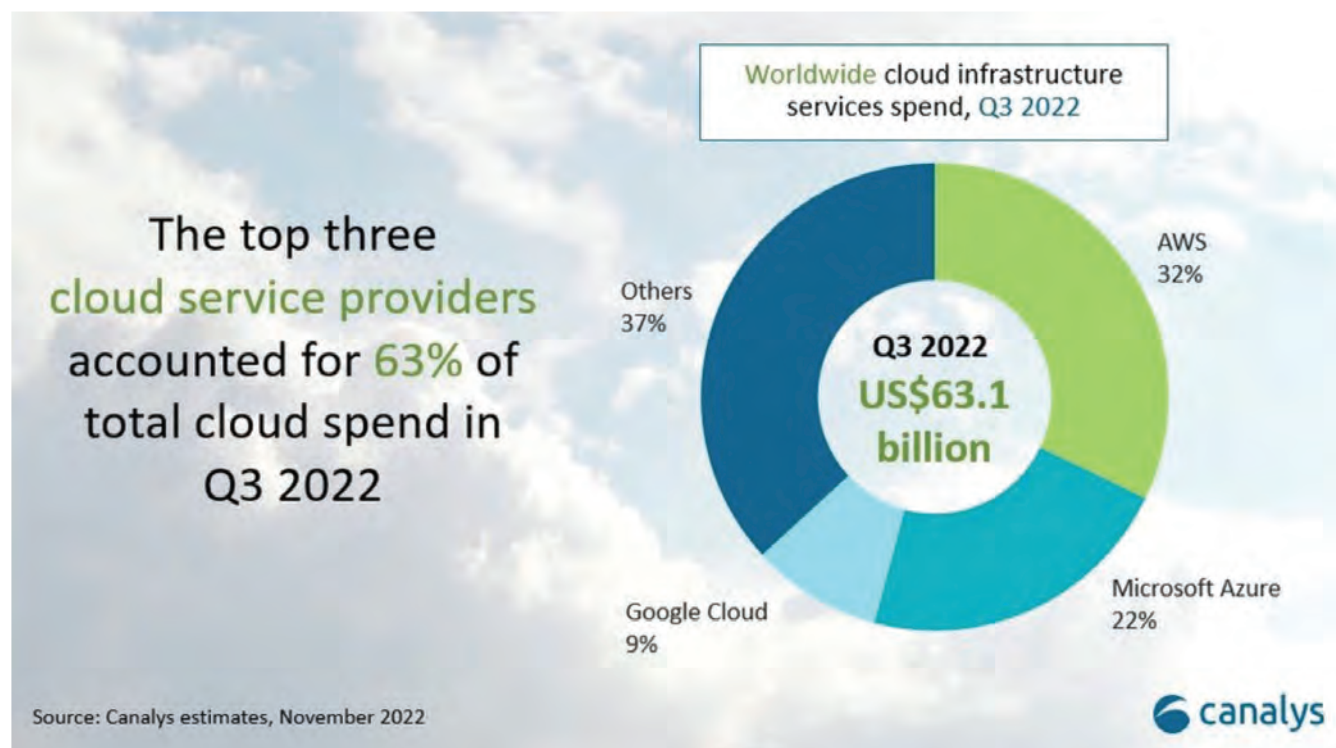
Worldwide digital transformation investments reaching $3.4 trillion in 2026

FORWARD-LOOKING organizations have been pursuing digital transformation (DX) with the goal of creating new sources of value through digital products, services, and experiences.

AS AN ADDED BENEFIT, the pandemic revealed that digital transformation efforts improve an organization's resilience against market disruptions. Given its importance to future success, global DX spending is forecast to reach $3.4 trillion in 2026 with a five-year compound annual growth rate (CAGR) of 16.3%, according to the International Data Corporation (IDC) Worldwide Digital Transformation Spending Guide.

"Despite strong headwinds from global supply chain constraints, soaring inflation, political uncertainty, and an impending recession, investment in digital transformation is expected to remain robust," said Craig Simpson, senior research manager with IDC's Data & Analytics Group. "The benefits of investing in DX technology, including automation, strong intelligence, operational transparency, and direct support around customer experience, all support targeted areas of business focus to weather the current environment of uncertainty and to make the most of any opportunities in the recovery."

The DX use case that will see the largest investments over the forecast period is Innovate, Scale, and Operate, a broad area covering large-scale operations, including making, building, and designing activities. Core business functions that make up this area include supply chain management, engineering, design and research, operations, and manufacturing plant floor operations. Innovate, Scale, and Operate will account for more than 20% of all DX investments throughout the forecast.

The next largest use cases are Back-Office Support and Infrastructure at more than 15% of all DX spending and Customer Experience at more than 8%. The fastest growing among the more than 300 DX use cases identified by IDC include Digital Twins and Robotic Process Automation-Based Claims Processing with five-year CAGRs of 35.2% and 31.0% respectively.

Nearly 30% of worldwide DX spending throughout the forecast period will come from the Discrete and Process Manufacturing industries, where Robotic Manufacturing, Autonomic Operations, and Self-Healing Assets and Augmented Maintenance are among the leading use cases. The next largest industries for DX spending are Professional Services and Retail where Back-Office Support and Infrastructure is the leading DX use case. The Securities and Investment Services industry will experience the fastest growth in DX spending with a five-year CAGR of 20.6%, followed closely by Banking and Healthcare Providers with CAGRs of 19.4% and 19.3% respectively. The United States will be the largest geographic market for DX spending throughout the forecast, accounting for nearly 35% of the worldwide total and surpassing the $1 trillion mark in 2025. Western Europe will be the second largest region with nearly a quarter of all DX spending. China will see the strongest growth in DX spending with a five-year CAGR of 18.6%, followed closely by Latin America with a CAGR of 18.2%.

"Consumers and enterprises within the Asia/Pacific (excluding Japan and China) (APeJC) region are growing in connected technology and they tend to show higher consumption of digital products and services," said Mario Allen Clement, associate research manager for the Asia/Pacific IT Spending Team. "Amidst the pandemic and recovery, organizations have accelerated their digital engagements, products, and services, which have been predominantly improved by deploying digital technology faster. More and more businesses have started to go digital as a source of resiliency and innovation, which is shown across the region as new offerings and solutions are widely available. The APeJC region is expected to grow in double digits across the forecast period where use cases from IoT and Robotics are showing a high potential within the Manufacturing sector. Customer experience, engagements, and personalized customer journey will be the highlight of pushing a stable growth in digital transformation."

Identifying hidden channel costs and how to eliminate them

Growth remains a key objective for businesses, but in this digital age, fast and rapid growth can often unveil red flags, and cracks can reveal themselves with pre-existing inefficiencies and harbour hidden costs.

BY MARK WASS, STRATEGIC SALES DIRECTOR, UK AND NORTH EMEA AT CLOUDBLUE

HIDDEN COSTS are pervasive in channel distribution for the vast majority of partners today, including Managed Service Providers (MSPs) and resellers, as well as distributors and vendors. Varying in size, many partners continue to work with multiple channels and systems which can become complicated, affecting their ability to track information. As a result, these inefficiencies of shadow IT, on average, accounts for between 30% and 40% of IT spending in large enterprises. There is no single root cause to hidden costs. An array of issues such as wasted resources, labour, time constraints, poor implementation oversights and maintenance issues are all contributors, and the cuts only get deeper as partners scale. Here are the ways service providers can eliminate hidden costs going forward.

How to find hidden costs

In general, unaccounted or unattributed costs originate from four areas, with the first being shadow IT. Shadow IT is the use of systems, devices, software, applications, or services without explicit IT department approval. The phenomenon has grown in recent years due to the adoption of cloud-based applications and services, with the average company using 30% more unique SaaS (Software-as-a-Service) apps than they

were in 2018. Thanks to the ease of adding new software, departments are going it alone and buying platforms that can be niche, or duplicate processes, and even in some cases using multiple versions of chat apps to communicate internally.

The next hidden cost stems from implementation and integration. Channel partners need to work within different systems and almost always underestimate the budget needed to work with new software solutions. A consistent blind spot across the industry is the inconsistency of implementation and integration at budget.

In terms of maintenance, it is especially difficult when partners create homegrown software to handle provisioning, relationship management, or data management. While such proprietary software might perform well for initial purposes, maintenance and upgrades can be a nightmare. Likewise, internal knowledge transfer in this situation is crucial.

And finally, the scalability of expanding from one market to the next is not linear and neither is the cost. Partners that have already launched in one part of the world often think that it will cost around the same to expand into another region, like between the US and Europe. However, this thinking does not consider the additional effort to contend with the new currency,
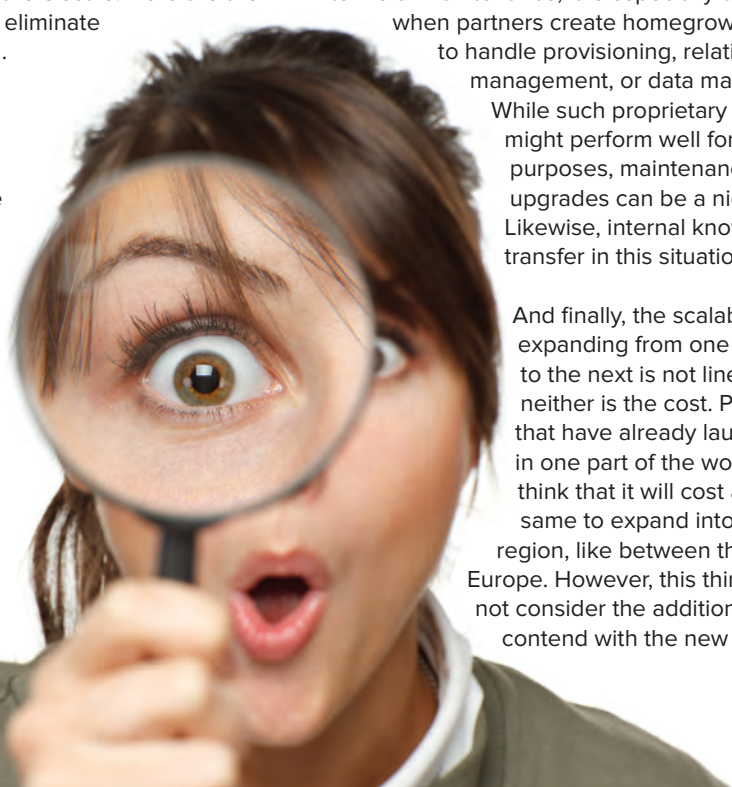
language, audience, and regulation, as well as local operations within the region.

Combating hidden costs

The good news is that there are multiple remedies to hidden costs. Integrations, for example, successfully bring together disparate systems and improve efficiency. Partners that have manual processes and pull information from one system before typing it into another are wasting time and resources by dedicating an entire person to this process. Clearly, this should be automated to cut down on human errors and save in the long run. Along with integrations, partners should purchase software with scalability and unification at heart.

There is no magic platform that does everything entirely so companies should opt for the best of breed, even if the initial investment is a bit more. This will help to offset the concerns of scalability, maintenance, lack of expertise, and potential unforeseen overheads. Moreover, best-in-class platforms help to paint a consistent long-term picture of the health of channel operations. For channel health, it is also integral to integrate outside experts to perform an overall business diagnostic. These can be consultants, solution architects, and those alike that know channel software and best industry practices to help architect a scalable and efficient platform. Working in conjunction with the team, these objective

outsiders work to find the gaps and tighten any software screws.

Tackling inefficiencies to help the channel Hidden costs can run rampant, and the reality is that channel partners without oversight essentially pay twice the price for half the output. More than the financial downside, though, hidden costs should be thought of as hidden inefficiencies. Especially in today's accelerated digital transformation, inefficiencies can make or break fast-growing channel operations. Therefore, weeding out hidden costs with improved efficiencies can work wonders by saving budget and running a tighter ship.

This is where integrated software and platforms can make all the difference. By unifying and standardising existing systems, managers receive a single view of contracts, reporting, sales, marketing, and day-to-day operations, thereby empowering them with the right tools to achieve sustainable growth. Instead of overwhelming teams with multiple different platforms and software, this single operational view can grant the much-needed oversight that is necessary to set a business up for success. With the rapid growth of businesses in the digital and cloud spaces set to shape the market leaders of tomorrow, it is essential for channel partners to seize the moment and eliminate the perils of hidden costs.

Offsetting is no longer enough

We need to mobilise infrastructure change - and fast.

BY SHAUN LYNN, CEO AT AGILITAS

IT'S NO SECRET that the climate agenda has intensified in recent years, with the UK Government increasingly benchmarking companies on their ESG credentials. Stakeholders are also beginning to put more pressure on organisations to comply, and without a well-rounded strategy in place, many run the risk of losing contracts if they fail to put sustainability at the heart of their operations. In fact, our 2022 Channel Confidence Index uncovered that 10% of respondents in the Technology Channel admitted that they had lost a contract or tender because they could not demonstrate their business' sustainability commitments.

With sustainability now a priority across the Technology Channel, this number is set to increase in the coming years. In order to address this, many businesses are turning to carbon offsetting, which is defined as any activity that compensates for the emission of carbon dioxide and other greenhouse gases by providing an alternative mechanism for emission reduction. In simple terms, it is the methods that organisations can use to counteract their CO2 emissions, through initiatives such as planting trees or investing in clean-energy projects.

Going beyond carbon offsetting

Whilst carbon offsetting has many positive benefits, it does not focus on changing our ways. This has led to many businesses in the Technology Channel realising that 'fighting the symptoms and not the cause' should not be the sole strategy for addressing the significant amount of carbon being emitted by the sector. In some cases, investing in environmental projects around the world in an effort to move closer to net zero means that a company is focusing on something which they have limited control over, and will continue to operate as usual closer to home.

This is where carbon insetting comes into play and has been coined as the missing part of the puzzle for the Technology Channel when looking to balance the sector's carbon footprint. For instance, with traditional offsetting, organisations may invest resources into a global renewable energy project, but those who choose an insetting approach would look to set up their own project with the help of suppliers. In today's market, sustainability is no longer something that organisations can claim through small actions or gestures like offsetting; it requires a complete transformation of business processes and even deeper collaboration with partners.

Steps to drive real change

Before embarking on any business journey, the first step is for a business to define its objectives and lay out the necessary steps required to achieve these goals. This could be anything from increasing recycling, maximising resource utilisation or actively investing in new initiatives in the local community. It's important to be specific about the company's intentions and measure progress along the way in order to make any informed adjustments to the business' approach to scope 1, 2 and 3 emissions.

Recruiting passionate environmental

employees who can challenge an organisation's actions will also help drive improvement and identify

which actions need to be prioritised. It's not enough to only look at the current state of the organisation. Businesses need to create a plan that aligns with their future growth trajectory and the impact that this will have on their emissions. With that in mind, the best option is to reduce the carbon intensity of their operations by establishing reduction strategies and mobilising infrastructure change. This can take effect across a number of areas in an organisation, most predominantly in the business' supply chain, which links back to the company's scope 3 emissions.

Reducing emissions across the value chain

Supply chain emissions are notoriously difficult to measure as they are outside of the organisation's direct control. This has meant many businesses in the Technology Channel are considering changing raw materials to those with lower carbon footprint or CO2 content, using recycled materials, reducing production waste and decreasing the number of inputs. They can also re-evaluate how they transport their products throughout the supply chain and look to change their vehicles to electric fleets. This can then be followed by a reduction in the distance transported goods are taking by making a switch to more local and sustainable suppliers.

Another element includes minimising the end-of-life emissions which occur once the products are no longer viable or used by customers. Whilst these emissions decrease in line with other scope 3 categories, it's important for businesses to influence the impact by ensuring the products that they put on the market emit lower levels of CO2 during their disposal.

A big part of enhancing the value chain involves partnering with companies in the Technology

> Supply chain emissions are notoriously difficult to measure as they are outside of the organisation's direct control

Channel that share the same sustainability values. Partnering with like-minded organisations is a win-win as it helps to pool resources and share the costs needed to address any ESG demands in the industry. Businesses can look to collaborate with those who share the same values in order to meet ESG targets quicker and more effectively as they embark on the path to creating a sustainable future together.

Driving a greener future

The pressure is on for businesses in the Technology Channel to not only embed ESG practices into their operations, but to act on it, and fast. In line with stakeholder and customer expectations, there is a heightened need to permanently embrace sustained and robust practices that go beyond offsetting. This starts by establishing how to address the organisations' scope 1, 2 and 3 emissions and collaborating with other businesses that have similar net zero goals, as working together will ultimately contribute to a greener, more stable future for its people, planet and partners.

How channel firms can expand from IT into comms

Traditionally, IT and telecoms have mainly been separate technology siloes, but the situation is changing fast, not just because the technology barriers are disappearing. For channel firms focused on IT and wanting to expand their portfolios, there is a huge opportunity to be explored, and conversely, not doing so could mean being out of step with what users want.

BY BERTRAND POURCELOT, MANAGING DIRECTOR, ENREACH FOR SERVICE PROVIDERS

OF COURSE, end user needs may differ and the channel player's role vary depending on the size of the companies (SoHo, SMEs, or large enterprises), the vertical market (education, retail and so on), and the diversity of the employees (field workers, white or blue collar workers).

In particular, business users, especially SMBs, increasingly want a one-stop shop for all their ICT requirements and do not want to spend valuable time dealing with different vendors. So, they are open to receiving, for instance, unified communications services and IT products from the same source.

Some will wish for rapid self-service; others will be looking for more of an advisory role from their providers, with a relationship based on a deep understanding of their business requirements.

Plus, all these technologies are now much easier to integrate with one another to provide a more seamless user experience. In addition, the kind of sophisticated services previously only available to large enterprises with big budgets are now within the reach of a far larger range of firms, even quite small organisations, without substantial up-front investments or internal effort.

Regardless of how these services are provided, the big question is who is in the hot seat? The IT supplier? A comms system integrator? Or one of the giant global firms that have entered the communications services market, providing yet further competition for the region's existing channel players.

Furthermore, time is of the essence: research from the Cavell Group in late 2021 found that 35% of businesses surveyed were looking to change their communications platform in the following 12 months. That is a massive volume of potential new customers for any channel player, as long as they can provide what those customers want. Fortunately, there are some sweet spots ready for ICT providers to investigate.

Take it to the cloud

Despite all the hype around cloud communications, market penetration in Europe is still relatively low, with significant room for expansion in the coming years. And the increasing sophistication of Unified Communications as a Service (UCaaS) platforms from third parties gives channel organisations a launchpad to blended IT and comms, with access to a rich array of services and products they can offer customers but without having to make major investments of their own.

However, customers will only move to the cloud if there is a clear business imperative with no significant downsides. Reducing cost and having more flexibility around scale are the advantages often cited — and, of course, in the current economic environment have obvious appeal — but the agility and convergence of ICT services that the cloud enables are arguably just as compelling. For example, someone may be sharing ideas via chat with a colleague, and it becomes clear that speaking would be preferable, so they turn it into a voice call. They then add more team members and elevate the session to video with screen-sharing.

This kind of flexibility and working around the user and their preferences (rather than technology dictating the situation) have powerful appeal once experienced. Easier collaboration, productivity and communication all contribute to a better world of hybrid work. A further example is integrating Microsoft Teams into the overall telephony environment, including mobile GSM access (even when the mobile data signal is poor or non-existent), employee collaboration can become a seamless experience, regardless of device or location.

Improve the customer experience

Another area of potential is customer experience, an area on which businesses are placing greater emphasis, especially with the transition towards either greater or complete remote customer engagement. While many organisations will continue to want and need a dedicated contact centre solution, equally, a large percentage of SMBs have customer-facing requirements but do not require or want to invest in those more extensive systems. For channel providers, the convergence of Unified Communications as a Service (UCaaS) and Contact Centres as a Service (CCaaS) enables 'casual contact centre' functionality which can be offered to these smaller businesses. In other words, contact-centre style features can be added to the overall user environment, accessible from existing apps, rather than requiring a complete additional system.

Take, for example, the owner of an online shop who might be out walking when they see an urgent message about an order problem, so they launch a conversation or chat from within the CRM app on their phone. Simultaneous access to details about the customer's account and order history makes troubleshooting easier.

Make mobile matter

Despite mobile continuing to outpace fixed telephony traffic, mobile is still siloed. Therefore, IT providers have a big opportunity to bring mobile under their remit. For instance, mobile numbers and calls can be integrated into CRM, ERP or vertical market solutions, and PBXs. In addition, mobile voice recording can be added to support compliance requirements.

In addition, multiple personas can co-exist on the same device: someone could make calls from their office extension, mobile work ID and personal ID. Resellers can start small, perhaps adding mobile to PBXs or Microsoft Teams Direct Routing, and then build outwards to include CRMs, ERPs, and even vertical market applications using a UCaaS platform provider's open API architecture.

Not just technology

While the potential is arguably vast, the technology is only part of the path toward successful comms-and-IT integration. There are some significant considerations of which to be aware.

For example, one of the current hottest topics in the comms industry is the 'agency model', whereby the customer relationship and contract are moved to the technology vendor. While it is by no means universal that customer ownership transfers to the vendor, it is a factor that IT firms moving into comms must understand.

Another factor to consider is what level of hand-holding the chosen comms provider will provide. For example, do they provide local language and timezone support? Will they provide face-to-face training for the channel provider during the onboarding process? In short, just how much time and effort is the unified communications platform provider prepared to invest in channel partners?

A further aspect to bear in mind is the ability to differentiate from other channel players. As is always the case, offering the same vanilla flavour can quickly turn into a price-driven race to the bottom. So, look for solutions that enable easy customisation, such as pre-configured integration with existing business apps or open APIs for those channel companies who want to build or customise their packages. Is 'Bring Your Own Carrier' an option for organisations that already have an established relationship with a telephony provider? What about white-labelling options?

Clearly, there are a lot of factors to consider, but finding the right recipe for converged contact across IT, comms, and mobile could be the key for many IT channel partners to survive and thrive as the technology landscape across the region changes. Learning about the different options, challenges, and opportunities as early as possible will help channel players stay ahead in this environment that has rich possibilities.

How to overcome the challenges of multi-cloud deployment

The modern workplace is empowered by cloud technology, with organisations often running their operations across multiple cloud networks. According to a recent Gartner report, more than 75% of organisations currently use multiple public cloud services.

BY PAUL MEZZERA, VP OF STRATEGY, SAVIYNT

WHETHER it's automating HR systems oR implementing tools that keep employees connected in a hybrid environment, cloud-based software makes running a business easier and more efficient. Multi-cloud strategies also help enterprises to optimise performance, avoid vendor lock-in, and create robust failover systems.

Yet as multi-cloud strategies become the norm, new identity and security challenges have emerged. To begin with, multi-cloud environments have an increased attack surface and consequently boost the risk of cyberattacks. According to 451 Research and Thales, cloud data breaches are on the rise as the increase in cloud adoption and more complex cloud environments make it harder to manage security.

Dangers often arise when companies lack a clear identity and security strategy. Without a centralised view, monitoring access and activity across each cloud environment can become extremely complicated. Managing disparate cloud environments tends to fall under the remit of IT security teams, but being able to consistently enforce security controls across multi-cloud environments is a daunting task that can often be tedious, costly and difficult to implement. Risky behaviours and other risk signals can easily slip through the cracks if these environments are misconfigured, opening the door for a whole host of damaging security events, from data breaches to third-party cyber-attacks.

So how can IT security teams and security leaders make sense of these complex, multi-cloud environments, and ensure they're keeping important information in and risks out? It starts with identity.

Increasing access visibility

One of the major challenges of multi-cloud environments is having visibility into and control over who has access to what, especially when standing privilege comes into play. Otherwise known as 'broad user access privilege' – in which users have access to resources all the time, whether they need to or not. Standing privilege combined with excessive permissions can cause major security gaps as mapping them on a granular level in the cloud is particularly difficult. For example, if a bad actor gets a hold of credentials from an over privileged user, then they too will have unfettered access to the entire organisation, including mission-critical information.

By prioritising their security initiatives on identity access and management (IAM), organisations can eliminate these risks and gain a clear picture of who's accessing which resource, no matter the cloud environment. By implementing an identity strategy that focuses on privileged access management, with the likes of Zero Trust and just-in-time (JIT) access as core principles, organisations can take control over which resources identities can access, and limit how long they have access for, no matter which cloud they're in. This doesn't have to be a complicated process – with solutions that employ analytics and machine learning, can automate the evaluating approval of access requests.

In addition, by centralising multi-cloud access in this way, rather than managing each cloud in its own environment, organisations can ensure identity and access controls are comprehensive and coherent across the company as a whole – reducing risks even further and simplifying workflows in the process.

Understanding cloud identities

Multi-cloud environments are extremely complex, with each cloud bringing its own nuanced identity model. From unique roles and policies to their overall security models, 'identity' will look different to each cloud. This makes it difficult to see holistically across multiple cloud environments. Understanding each cloud identity model at a granular level and being able to detect whether given privileges are excessive or following principles of least privilege is critical.

Enterprises should begin by understanding the identities, personas, and workloads that interact with each cloud — and apply individual security management nuances to those identities. In this way, organisations can modernise their security processes and ensure that every identity interacting within each cloud is legitimate.

Multi-cloud governance

Identity governance covers all facets of an organisation's identity security processes and policies, from employee permissions to access to contingency plans. But applying governance policies to multiple, separate clouds within one organisation can become overly complex and difficult to navigate manually.

By centralising governance across the entire cloud environment and implementing a clear set of rules and policies that users must follow, organisations can keep track of every identity within an organisation and ensure they're following the correct processes no matter what cloud they need to use.

But cloud governance is not a single step - it is a journey. To successfully implement a multi-cloud governance strategy, organisations need to be continuously reviewing their tools, solutions and policies to strengthen their defences against increasingly innovative approaches from cybercriminals and in order to mitigate the fallout from any successful attacks.

The future of multi-cloud

As more and more organisations adopt multi-cloud environments, managing access for these complex networks should be the prime focus for security leaders. Indeed, the security and identity industry should anticipate an increased shift in policies and multi-cloud management practices, as well as an increase in innovative ways to bring the different silos of multi-cloud management together.

And as uncontrollable external factors continue to dictate the rate of development within cybersecurity, there has never been a better time for enterprises to push for multi-cloud enablement and strive for a single-pane-of-glass view into the identities and access of their disparate cloud environments.

By centralising governance across the entire cloud environment and implementing a clear set of rules and policies that users must follow, organisations can keep track of every identity within an organisation and ensure they're following the correct processes no matter what cloud they need to use

Is your company really Cloud Ready, or is risk-averse governance holding it back?

This might sound like a statement of the obvious right now, but the cloud is not just another "IT thing" that only IT people should care about. Every company and organisation that has understood this principle has triumphed, while a significantly higher number have merely paid lip service to it.

ROMY HUGHES, DIRECTOR, BRIGHTMAN

BY ENABLING organisations to realise a pace of agility never previously achievable, the cloud is turning the business world on its head. In the pre-cloud days, it was not uncommon for a new idea to take 6 months before it could be tested at even the smallest scale.

Today, you can have an idea in the shower that morning and have it deployed company-wide by the end of the day. The difference in pace is that profound.

A new idea deployed in just a day? Sure, that's easy with the cloud. But how many of you have actually done that? The problem is that, while most organisations could work at this "cloud pace," most don't. They might have the technology, leadership support, budget etc. to operate at this "same day" pace, but they don't. Why not?

Cutting edge meets legacy attitudes

The main bottleneck to cloud-enabled innovation are legacy attitudes, particularly when it comes to their heavy focus on risk management. These attitudes ultimately drive processes and policies, which slam the brakes on change.

What are the priorities for an IT project for example? In most organisations, the ultimate goal of IT is to minimise risks to the organisation's reputation. "Is it safe, secure and legal?" are the first and last questions asked by senior leaders when considering whether to sign off on a project. Since IT projects were traditionally very large in scope, this emphasis on risk mitigation made a lot of sense, since the changes such a project would make to the organisation would be so significant that, if it failed, it would fail big time. You can't hide an IT failure when your entire organisation uses it everyday.

You may have all the cloud tools in the world and have everyone praising your new idea in the morning meeting, but the delays in raising the budget through the appropriate channels of bureaucracy and sign-off, alongside the security and legal checks, still slows everything down. Traditional IT did a very good job at ensuring the necessary security, safety and legal checks were taken – but it's just too slow for today when you want to deliver a solution quickly. The cloud doesn't have to forego these steps either; since most PaaS or IaaS solutions have the safe and legal steps built into them already (see Amazon's shared responsibility model for example, where AWS provides the infrastructure so the customer only has to focus on the software).

Iterative change requires a new approach to risk management

Cloud, thanks to its DevOps approach to implementation, is the polar opposite to the waterfall / monolithic IT projects of the past; where the focus is now on iterative development and deployment. Since changes are delivered in small increments which can be tested quickly and rolled back relatively easily, the risk to the organisation is reduced significantly. While most organisations will recognise this new approach, the majority of them have not changed how they measure risk in response. In the public sector, most service management frameworks are still not predicated for this more iterative approach and the lower risks they bring – they are still very structured, process driven and risk averse, which prevents most organisations from moving at a true "cloud pace."

The solution is to measure IT differently, shifting the primary focus of a project away from risk management, and onto outcomes. Ultimately, what outcomes will this project deliver to my customer? This is the only question to ask.

Real risk is not doing anything at all

Evidence shows that, given the option, most people

> You may have all the cloud tools in the world and have everyone praising your new idea in the morning meeting, but the delays in raising the budget through the appropriate channels of bureaucracy and sign-off, alongside the security and legal checks, still slows everything down

are happy to avoid change altogether. But we live in a world where change is a constant and is getting faster. The over-emphasis on "what could go wrong," instead of "what value will this bring?" often leads to organisations talking themselves out of a necessary change, or delaying it so long that the inevitable change eventually becomes a firefight. The better question to ask is "What could happen if we don't make this change?"
- Employee frustration?
- Loss of market share?
- Employee walk out or strike?
- Irrecoverable damage to brand?

Could you afford not to make the change if these are the potential outcomes if you do nothing?

The public sector – hardly known for leading change the pace of change in anything – is already mature in attempting to shift its projects in this direction. The GDS framework for example is already written for this form of agile project delivery by focusing more on outcomes than risk. The question therefore becomes, "How do you change your internal governance to reflect this?" As with most change, this starts with the person in the mirror.

Secure cloud transformation:
Five foundational pillars

Cloud deployments are booming, largely thanks to advances in digital technologies and the need for companies to support remote and hybrid working; trends which were both accelerated by the Covid pandemic.

BY DAVID GUEST, SOLUTION ARCHITECT AND TECHNOLOGY EVANGELIST AT KOCHO

THE OFFICE OF NATIONAL STATISTICS reports that 85% of employees now expect options for hybrid work, confirming that demand for flexible cloud-based services, which employees can access from anywhere, will remain buoyant even as memories of the pandemic fade.

However, these new digital and cloud-based services are raising the level of alert around cyber security threats. With no traditional perimeters to defend – and with a growing reliance on third-party cloud service providers – businesses may find it more difficult to identify and thwart threats. Yet, organisations that halt their digital transformation plans because they fear they are too risky, will find themselves falling behind their competitors. For example, Gartner forecasts that, by 2025, cloud native platforms will provide a foundation for over 95% of new digital initiatives. There's simply no avoiding the cloud for companies that are focused on innovation and driving efficiency gains.

With the perimeter gone, cyber security teams face

new threats so need to adopt new techniques to meet this challenge. One approach is to introduce and follow the secure cloud adoption framework (S-CAF). Based on the following five key pillars, this framework addresses all the main aspects of cloud security, namely:

Pillar 1: Zero-trust Zero Trust assumes that all users, devices and activities are malicious until proven otherwise. This may sound extreme, but with threats and exploits appearing much more rapidly than fixes and patches, a 'trust no-one' approach is required to ensure all user requests, whether they are unusual or routine, are authenticated.

Pillar 2: Strong detection and response With cyberattacks growing in both number and sophistication, it is perhaps inevitable that hackers will, on occasion, breach organisations' infrastructures. In preparation for this, it is important to bolster detection capabilities so threats can be detected early and mitigations can take place before any serious or long-lasting damage is done.

Pillar 3: Protect all assets Companies must also introduce appropriate policies and processes that cover all of their assets for all of their respective lifecycles. Looking at these policies through the lens of cyber security, assets requiring protection include all software, hardware and corporate data, wherever it is held.

Pillar 4: Governing identities Having a precise overview of every user's access permission is pivotal too, but this can be a challenge, particularly for larger organisations that will have a steady stream of employees leaving, joining and moving roles. Speedy governance of access rights decreases the window of opportunity for employees to abuse the system, regardless of whether their behaviour is intentional or inadvertent.

Pillar 5: Extend innovation to security A digitalisation project might be seen as a one-off event, yet cyber security should always be considered a journey rather as a destination. As such, DevSecOps becomes a fundamental requirement.

DevSecOps explained

Navigating a successful digital transformation programme that is based on the S-CAF model requires the incorporation of security controls and measures in every area of an organisation's operations. This is where DevSecOps plays a key role, offering an economical approach to safeguarding systems from attackers. For cloud environments, which are often procured by lines of business without the IT department's knowledge or scrutiny, DevSecOps is an absolute imperative, as it ensures misconfigurations are the identified and

remediated in the shortest possible timeframe. In order to successfully integrate DevSecOps into their operations, businesses need to analyse and continually re-analyse their entire infrastructures from the moment they embark on of their transformation journeys. These ongoing assessments must extend beyond data to take into account how employees utilise organisational assets, be they digital or physical. Adding DevSecOp polices at the architecture level is also important, as it means policies can evolve alongside a cloud transformation programme, ensuring growth is not hindered by outdated guidelines.

DevSecOps grants processes to be dynamic and tailored to each business, with consideration of its individual requirements, infrastructure and specific applications. Consequentially, activating the necessary security controls when migrating from on-prem to single or multi-cloud architecture is the key to developing those areas. Covering the technical assets should be done first before integrating concepts such as Zero Trust, and equally taking care of threat detection, identity, and governance can be done further along in the cloud transformation journey.

Conclusion

The S-CAF model is not the only option available to reduce the security risks associated with switching to the cloud, but it is an inclusive, balanced and effective approach. The five foundational pillars can be applied to organisations of all sizes, operating in any industry, while providing security teams with a solid yet flexible framework that should help them counter both current and future challenges.

Simplifying workflows and improving efficiency with cloud computing

According to Pluralsight's recent State of Cloud report, 75% of organisations are building new products and features in the cloud. However, while plans and visions are in place, there is a disconnect when it comes to executing on cloud migrations.

BY MATTIAS ANDERSSON, PRINCIPAL DEVELOPER ADVOCATE AT PLURALSIGHT

THE COMMON MISTAKE that technology leaders often make when it comes to serverless and cloud computing is that they want to migrate their current environment exactly as it is to the cloud.

Taking this approach can limit the benefits that cloud computing can bring to an organisation – in the same way as planning a flight path along the road network and deciding the route based on street-level traffic. You can do it, but it isn't going to bring about the full reward that a flight path could offer.

By sticking with the "lift and shift" mindset, software developers are prevented from seeing the real ROI that cloud computing and serverless technology can bring. To overcome this and maximise the potential of the cloud, it is vital to challenge these traditional ways of thinking.

Cloud computing powers faster and easier software development

Software is usually defined as anything that makes a piece of hardware perform a function. We use

operating systems to control internal functions as well as peripherals, and application software enables teams to direct computers to execute certain commands.

As a result, we tend to think of software as programmatic, needing specialised and complicated programming languages to develop. But the most popular functional programming language isn't Erlang or Haskell or Lisp; it's Microsoft Excel, with over 750 million users.

Every Excel spreadsheet is the software that someone uses to make their hardware process data in a way that's valuable to them. Likewise, the "systems" that we build on the Information Technology side are just more software. With cloud computing, we have access to a new range of powerful tools that help to build bigger systems faster and more easily than before.

Boosting productivity through serverless technology Cloud computing largely focuses on data centers and data storage, and serverless computing is one piece of cloud computing. With serverless computing, developers can create software without having to manage infrastructure, which makes it easier for developers to release high quality software at pace, because they can focus on the most important thing - the end product. For example, they can spend more time analysing the market to make sure their product truly responds to consumers' needs in the software industry.

Overall, cloud computing and serverless technology increase productivity, speed up product delivery, optimise resources, and keep developers focused on the end product rather than infrastructure maintenance. Once deployed, serverless apps can also respond to demand, scaling up or down as needed. So, when a serverless function sits idle, it costs nothing.

Using the cloud to increase ROI

There are many benefits of cloud computing and serverless frameworks. By far, the one that business leaders are most excited about is cost control and increased return on investment (ROI). But it's also one that leaders most often miss.

The number one way to increase ROI with serverless frameworks and cloud computing is to avoid building anything from scratch, but invest in open-minded research instead. It's inevitable that sometimes things will need to be built for the first time, but often there's a way to shift some of the burden away from the team.

An easy example is functions. The first thing most developers think of when they hear "serverless" is functions. But the functions running code are just a tiny piece of the puzzle. Serverless technology allows development teams to hand off as much work as they can to cloud platforms like Azure, Amazon

Web Services (AWS), and Google Cloud Platform (GCP).

Developers no longer have to write their own code as the building blocks already exist in their cloud platform. Take, for example, Azure's Durable Functions feature. This feature manages stateful workflows so teams don't need to explicitly create, store, and retrieve the progress through the data's workflow in some other place. This process is so common to the systems that teams build that the cloud providers made it available without needing developers to write lines of code.

The more a team can leverage already-made code, the more time they can recoup, and the more budget can be used elsewhere.

Organisations must move away from the "lift and shift" approach to cloud computing, and towards an approach where frameworks are leveraged and developers have more time and budget available to work on other projects. As a result, ROI on cloud computing will be increased, and teams will be better able to deliver on ambitious cloud computing plans.

Overall, cloud computing and serverless technology increase productivity, speed up product delivery, optimise resources, and keep developers focused on the end product rather than infrastructure maintenance

Cost pressures shine a spotlight on IT managers and cloud expenditure

The pandemic forced many businesses to rethink how they work. For most, the solution was found in the cloud. From powering virtual stores, to connecting employees, cloud-based tools sustained business as usual. Now, businesses face another challenge.

BY PAUL ANDERSON, CLOUD SERVICES BUSINESS MANAGER EMEA, RICOH

WITH RISING INFLATION, supply chain disruption and rumours of a recession, the pressure is mounting for businesses. Across all sectors and sizes, finance departments are placing even greater scrutiny on expenditure and are looking at ways to reduce costs wherever possible.

IT budgets are by no means exempt from such scrutiny - especially with inflation increasing the costs of servers, storage and professional services. Producer Price Index data, which tracks prices paid to the producers of goods and services, reveals the cost of host computers and servers has risen 21%, compared to pricing levels in June 2021. One area increasingly under the microscope is cloud services. Gartner expects cloud spending to increase by 22% in 2022. For those organisations that are in the midst of their transition to the cloud, it can be hard to justify the monthly invoices for cloud services while still maintaining much of their previous infrastructure. As purse strings tighten, IT teams need to respond. For most IT managers it's less about finding savings, and more about being commercially minded. Being able to communicate the timelines for the return on investment and justify the increased IT expenditure will go a long way to support your cloud migration.

Ultimately, to navigate rising cost pressures, IT teams must understand and articulate the commercial implications of the cloud, so they can reinforce its worth.

The nature of cloud expenditure

Traditionally, IT procurement saw businesses make significant investments to acquire infrastructure, hardware and related software upfront. Known as a one-time sales model (Capex), businesses paid once for the kit they need.

Cloud expenditure is fundamentally different. Rather than a Capex model, cloud expenditure uses a recurring sales model (Opex) based on usage and data.

For finance departments, this is a drastic shift. As opposed to one-off payments, finance will get a regular bill for IT expenditure – that varies

depending on usage. This requires IT and finance to reimagine budgets and payments.

IT teams need to be mindful that they pay for cloud services according to consumption. As such, even day-to-day IT operations will impact on cost, so they must acknowledge and respect the commercial environment they're facing.

What about the return on investment (ROI)?

As the old saying goes, sometimes you've got to spend money to make money. From increased productivity, optimised processes to reduced overheads, migrating to the cloud has several wide-ranging benefits for businesses. However, in most transitions, these benefits are not realised instantly. In fact, it's rare that a cloud implementation simply "goes live". Migrations are often phased or layered in a way that makes calculating the ROI challenging.

Positioning the value of a cloud migration within the commercial landscape is essential when talking about ROI. For example, organisations embracing hybrid working will likley face rising cloud costs due to increased usage. However, IT managers can highlight the talent attraction and retention benefits of such a shift – perhaps, offsetting increased cloud costs. And, if cloud services and hybrid work allows a business to downsize their physical footprint, that can represent a significant return on investment.

The same could be said for a business that pivoted to eCommerce during the pandemic. While cloud and IT costs may have increased, such a transition opens a new revenue stream to deliver greater ROI for the entire organisation.

It's vital IT teams understand the commercial reality facing their organisation and can communicate the balance between rising costs and the ROI implications of their cloud strategies. While CIOs will know exactly how their cloud migration will transform the business, most CFOs just see spiralling costs with little to no material benefits.

Transparency & accessibility

You can't communicate, what you can't see. To confidently speak to the current spend and the ROI, you need complete visibility of your cloud spending. The same goes for your finance teams – they need access to the data.

To ensure everyone is on the same page, businesses need continuous access to a platform that details spending and performance. Not only does this mitigate bottlenecks but it also provides organisations with the ability to manage costs in real-time.

Why now?

The IT team plays a fundamental role in any organisation and how it operates. But, in any time of financial uncertainty it is natural for expenditure to be questioned or reigned in.

The cloud represents an opportunity for organisations to find efficiencies, create new ways of working and even develop new business models. But this can only happen if IT teams can make the right business case and demonstrate a path to ROI. With greater commercial awareness and a clear understanding of how the cloud impacts the wider business, CIOs and IT Managers can continue to drive cloud migration forward.

Head in the cloud?

Why it's time to get smart on cloud security

BY SCOTT NICHOLSON, CEO AT BRIDEWELL

AS CRITICAL NATIONAL INFRASTRUCTURE (CNI) organisations race to improve agility and operational efficiency, more and more are turning to the cloud.

In fact, global cloud expenditure has increased by 33% year on year to $62.3 billion (£52.9 billion) in the second quarter of 2022.

Many organisations are already embracing cloud for the delivery of operational (OT) solutions. However, as adoption of cloud increases, so too do the inevitable risks. Most cloud services are designed to make data sharing easier across multiple channels, which allows for hybrid working but also expands the attack surface area and gives cyber criminals bigger targets to hit.

Meanwhile, recent Bridewell research has found that many organisations do not have the skills or technology needed to maintain visibility and security of cloud environments, with managing cloud cyber security architecture now considered a top five challenge. With threat actors continuing to innovate and exploit cloud vulnerabilities, organisations need to mature their cyber security architecture – and do so fast.

How cloud-ready are organisations?

The widely discussed cyber skills shortage presents an ongoing challenge across industries. Now, migration of data and applications to the cloud has only widened the gap, due to the increased complexity of the cyber security landscape. The issue of skills acquisition is causing some head-scratching amongst cyber decision-makers in CNI, with over two-thirds (68%) agreeing it has become harder to recruit the right resources to secure and monitor cloud-based systems.

As cloud infrastructure becomes ever more distributed and interconnected, it is of critical importance for organisations to understand and appreciate cyber security risks from the implementation stage onwards. However, Bridewell research also revealed that 4 in 10 decision-makers admit to not having the skills to monitor threats in the cloud. This suggests that many organisations are turning to the cloud as an enabler without having sufficient skills in place to manage the resulting security risks.

Cloud misconfiguration remains a top attack vector. This is evident in the Bridewell research and was demonstrated significantly when a lone hacker perpetrated a massive data breach against Capital One by exploiting the misconfigurations and excessive privileges common in many cloud environments. Misconfiguration is also a highly effective bait for skilled criminal groups to deploy ransomcloud - attacks that target or take advantage of weaknesses or legitimate functionality in cloud resources to deploy malware, encrypt data and extort money from businesses.

Attacks against cloud infrastructures can devastate business operations and even endanger national security if deployed against CNI. This is why cloud security should be front and centre of any organisation's cyber security plan. Before diving head-first into the cloud, organisations need to put robust measures in place to mitigate evolving cyber threats.

Cutting through the fog

Perhaps the crux of the problem is that currently many organisations are struggling to gain the visibility they need to detect and respond to threats in the cloud. Traditional security operations centres (SOCs) now require at least 40 different tools to cover the cloud and every other possible vulnerability, each of which needs to be expertly configured, supported, and monitored 24/7. This complexity has left over a quarter (26%) of organisations doubting they have the right skills to respond to cyber threats quickly and effectively.

There is also an opportunity to drive improvements with the right technology. Currently, only 36% have a security information and event management (SIEM) platform – a crucial tool that helps organisations recognise and pre-empt potential security threats

and vulnerabilities – while just 42% have deployed a cloud access security broker and only 46% are using cloud storage services with in-built ransomware protection.

Organisations now have the opportunity to reverse this trend and gain a detailed view of all activity in the cloud. While education will always be key to mitigating cloud-based cyber threats, organisations also need a singular view of site level OT traffic and vulnerabilities to protect cloud and SaaS assets and analyse user and identity behaviour. This centralised approach is particularly important as IT and OT continues to converge.

A more proactive, intelligence-led posture

Protecting operations in the cloud need not come at the expense of business mobility. There are clear steps organisations can take to enhance their asset management, vulnerability management, and threat detection capabilities, all the while balancing operational uptime and security requirements.

The key lies in non-intrusive network-based detection mechanisms. With the appropriate technology in place, including strong endpoint, email and cloud app detection and response capabilities, organisations can secure their critical assets and data no matter where they are on their cloud transformation journey. F

urthermore, leveraging a central SIEM/SOAR platform allows any alerts to be monitored 24/7, so that an automated response can be implemented where sensible. This capability can be complemented further with threat intelligence services to provide early warning of potential attacks.

It's an unfortunate truth that any organisation in the cloud is at risk of a cyber breach. But organisations can manage this risk by developing a more proactive cyber security posture to effectively detect and respond to evolving threats in the cloud. This involves becoming hypervigilant to a diverse range of cyber risks and moving to a position of assumed breach to increase maturity and resilience. Utilising and sharing cyber threat intelligence can also transform an organisation's state of readiness to prevent, detect, and respond to cloud security threats.

As cyber threats in the cloud continue to rise in sophistication and complexity, it is vital that organisations adopt an intelligence-led security stance to develop a clear, holistic view of cyber security across IT, OT, cloud, and end user devices.

By getting smart on cloud security, organisations can now embrace new technologies with greater peace of mind as they move applications and services out of physical environments and into a digital one.
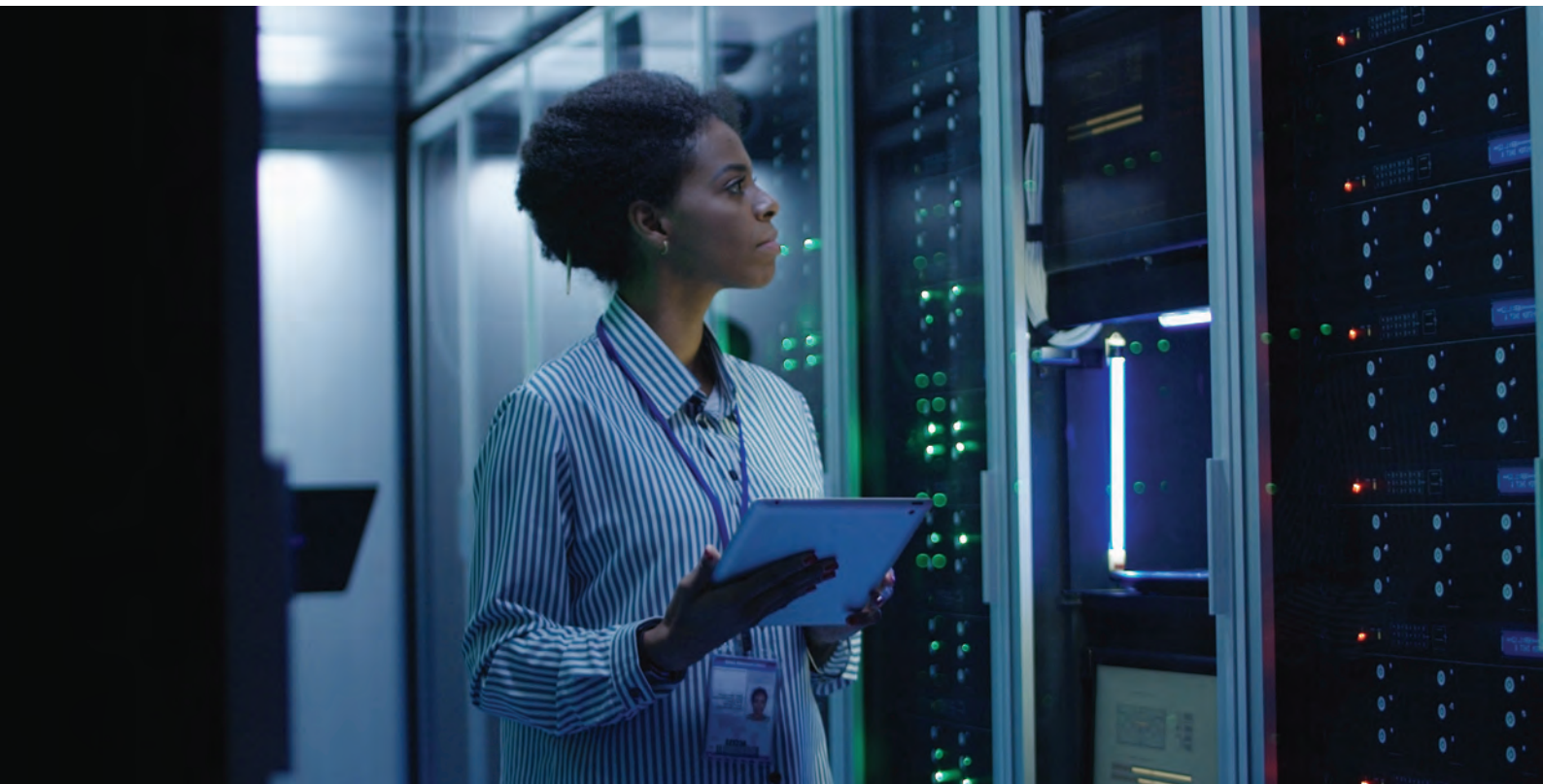
WOMEN IN IT

Why there needs to be an industry wide focus on diversifying the digital workforce.

BY CHARLOTTE GOODWILL, CEO OF THE ITP

2022, and the statistics around diversity in digital and tech industries still make for depressing reading. Less than 20% of the UK tech workforce are women. But it's not just a gender disparity our industry is struggling with, it's the failure to attract a diverse workforce. According to the BCS, only 11% of IT directors are from an ethnic minority background.

To increase innovation in our industry, we need diversity. As Deloitte points out, in order for people to thrive, it can "only be achieved by providing a workplace culture characterised by inclusive everyday behaviours and built on a foundation of respect and appreciation for diversity in all forms."

Not only are we failing to attract a diverse workforce, but we're also not retaining them. A staggering 56% of women in IT don't return to their jobs after having children. So how can we as an industry come together to ensure that we attract and retain the best talent from a cross section of society?

Establishing a culture of inclusivity
For many organisations, one of the first challenges is acknowledging that increasing inclusion and diversity is a long-term strategy. To attract and retain diverse talent, as an industry we need to weave this philosophy into business culture.

To be inclusive, businesses need to be open, transparent, and fair to all. Staff should feel safe expressing their ideas and concerns. Perhaps most important however, is the creation of a culture where staff feel they belong:

Create a dialogue within the organisation to understand what inclusive means to employees
Ensure that the vision and accountability filter down from the leadership team
Look at policies and procedures in place and how these can support employees and where gaps lie

Inclusive recruitment practices
Many of the partners we work with are now realising that hiring on attitude is more important than experience. By abolishing some of the pre-requisites they have discovered they are attracting a wider pool of candidates with transferable skills.

It's this approach which has allowed the ITP to hire around 60 female apprentices for one company

alone this year. Less than 10% had skills relevant to the role, but many are still within the business and have progressed. Ensuring that job descriptions, job titles and adverts are all gender-neutral is also important. So often IT and tech jobs are considered as masculine, when that's simply not the case. Look at inclusive recruitment practices - 15% of the UK population are neuro-diverse, yet many struggle even at the interview stage where their needs are not catered for. HR policies need to reflect this inclusivity and educate colleagues.

The importance of mentoring

Mentoring has far-reaching business benefits, particularly when it comes to diversifying the workforce. Championing role models within the business from diverse backgrounds can be a powerful recruitment tool. It can also aid retention, allowing junior employees to feel supported and represented. Many larger organisations have set up staff networks which can give employees a safe space and voice.

The likes of BT, Openreach and Virgin Media 02 are spearheading the way in their recruitment and retention strategies. Smaller start-ups are following suit. What's more, the opportunity to be mentored from the start of employment could be a huge draw to potential recruits.

If introduced as part of the onboarding process, it can transform an uninspiring one-size-fits-all approach and give a business the edge over its competitors. This is particularly important as we tackle the 'great resignation.'

According to those surveyed in Mpirical's Learning & Development in Telecoms report last year, 78% of those who had mentorships reported being happier than those who didn't. In typically male-dominated industries, mentoring can help employees feel more empowered in the workplace. We desperately need more role models in tech to inspire others to enter the industry.

Are apprenticeships the answer?

Employers are also increasingly realising that apprenticeships allow them to embrace younger people from diverse backgrounds. According to the National Apprenticeship Service:

86% of employers said apprenticeships have helped them develop skills relevant to their organisation 78% of employers said apprenticeships helped them improve productivity 74% of employers said apprenticeships helped them improve the quality of their product or service.

Many firms are now realising that they are alienating an entire group of candidates if they look purely at STEM grads. Employers instead need to consider what the candidate can learn on the job and if they are a good fit with the organisation's values and culture. There are some key aspects here including:

The company's mission and values should be clear: this will help identify which candidates are a good fit and where there are gaps in the workforce

Encourage employees to become brand ambassadors: this will help improve retention but also encourage quality candidates if they can see that current employees recommend the business. This can be done through referral schemes, testimonials on the website and through company Culture Books

Use social media to find relevant candidates and make approaches

What else should employers be doing? Offering flexible working, closing the gender pay gap and giving more transparency about diversity within the business are also essential. High profile campaigns by the likes of WISE and STEMettes, along with employer-led initiatives are all paving the way.

We believe that the way to gain true diversity is for employers to continually challenge perceptions. Embrace differences and give an opportunity to someone you may not have considered previously. The tools are there for us to show that tech is an appealing career choice, now we need to work together as an industry to make it a priority.

WOMEN IN IT

Why providing mentorship programmes and growth opportunities to women in technology should be every organisation's priority.

BY ALIONA GECKLER, CHIEF OF STAFF AND SVP OF BUSINESS OPERATIONS AT ACRONIS

MORE AND MORE WOMEN are joining the tech industry every day. Companies, no longer comfortable with the status quo, begin to realize the great benefits of having a diverse workforce, and start to provide equal opportunities to people of all walks of life. I love hearing stories about diversity changing company culture and even improving the bottom line. It shows us the workforce is evolving and women play an essential part in this process. I recently read a Deloitte article that predicted that by the end of 2022, the tech industry will reach an all-time high of 33% female representation.

This is a pivotal and exciting time for women in tech, a historically male-dominated industry. However, there are many remaining obstacles women face in the workforce. Luckily, with the proper resources and guidance, organisations can empower women with the skillsets needed to overcome challenges and lead successful careers. One such tool is mentorship.

A mentor is someone who usually has either a similar profession or background and who can offer their wisdom and share their experience with the mentee to help conquer obstacles and make important career choices. The right mentor can even be a door opener and a long-term point of reference to confide in during the journey.

The impact of mentorship on career satisfaction is striking: 40% of women cite lack of mentorship as one of the biggest challenges in the tech industry, alongside a lack of female role models and opportunities for advancement.

As the Chief of Staff and SVP of Business Operations at Acronis, I am proud to see first-hand the role mentorship plays in inspiring and educating women in the tech industry. We have officially launched our own mentorship programme, with already 50+ mentees involved across the world.

Our mentorship programme is part of the #CyberWomen initiative which is targeted to identify, educate, inspire, and coach the next generation of female leaders. We identified 50 high-potential women, selected through our performance review process, to be mentored by 40 of our senior leaders, executives, board members and advisors.

Our mentees are fortune enough to receive guidance from accomplished industry leaders like our Chairman and former CEO of VMware Paul

Maritz, Acronis Board Member and former CMO of Palo Alto Networks René Bonvanie, and former Vice-Chancellor of Germany Philipp Rösler, who is one of our Advisors, among several other senior executives.

Mentoring meetings are happening monthly, and we started with internal training on what mentoring is about, the role of mentor and mentee, and how to start. It's essential to agree on the goal of mentoring for each mentee, and we mainly focus on developing soft skills and support with career progression.

I, myself, currently have two mentees at Acronis. I enjoy our sessions very much and am happy and satisfied when I can give support to my female colleagues. This support can be around understanding themselves better, planning their next career steps, achieving more in their current roles, navigating difficult situations, networking better internally and externally, or balancing professional goals and personal plans like marriage and children. Mentorship sessions also are beneficial for mentors. I am continuously learning from my mentees and using this knowledge in many aspects of my work.

There is also an evident demand for mentors—when the mentorship programme was first announced at Acronis, my inbox was immediately inundated with supportive women eager to join the programme.

Leaders looking to implement mentorship opportunities for women can – and should – start by looking within their organisation for potential mentors. This is not to offset all mentor responsibilities on individual employees, but having female supervisors and executive women available to provide direction and help navigate the corporate world can go a long way. These one-on-one relationships are essential to help professionals develop the proper networking and interpersonal skills, including self-preservation, self-care, and improved confidence in the workplace.

To make it a successful mentorship programme, the organisation must ensure employees have the time and resources to be able to connect with these potential mentors on a consistent and private basis. These mentored employees can go on to become

mentors themselves later on in their careers, helping strengthen the bond and sense of community in the workplace between women and those from various backgrounds. Studies have even shown that employees with mentors are promoted up to five times more often than their non-mentored peers, with mentors being promoted up to six times more than their peers.

With consistent mentoring, women from all backgrounds and walks of life can thrive in their careers and inspire a stronger, more confident future generation of women to join the technology sector which will benefit both the market and individuals in the long run. My personal experiences in this field have only inspired me to continue pushing for mentorship initiatives in Acronis and spreading the word about the benefits of professional mentoring.

I, myself, currently have two mentees at Acronis. I enjoy our sessions very much and am happy and satisfied when I can give support to my female colleagues. This support can be around understanding themselves better, planning their next career steps, achieving more in their current roles, navigating difficult situations, networking better internally and externally, or balancing professional goals and personal plans like marriage and children

WOMEN IN IT

Delivering diversity and inclusion within cybersecurity

BY KATARZYNA GOŁUŃSKA GLOBAL DELIVERY WORKFORCE MANAGER FOR CYBERSECURITY SERVICES, ATOS

ALTHOUGH CYBER is changing and there is increasing diversity, public perceptions change slowly and many women perceive the field as a "boys club." Katarzyna Gołuńska reflects on her experience as HR professional in the field and the role of Diversity, Equality and Inclusion (DEI) in creating a truly inclusive work environment.

Some time ago, during the International Women Day celebrations at Atos, I hosted a special event dedicated to female colleagues. The idea was to conduct an interview and create a space for meaningful debate between an experienced, successful woman – seen by others as a role model – and the audience. The special guest, a talented senior cybersecurity manager, inspired participants with their potential to tap into their strengths and the courage to "sit at the table."

The resonance was amazing. Many days after the meeting, my guest and I received messages of appreciation and words of gratitude. Many women expressed that they finally felt it's time to swing into action.

That was an uplifting day for me and many other women, giving each of us the chance to observe someone just like you in a place where you aspire to be. Where – in a professional sense – you dream to be.

Rethinking the roots of the gender gap

It's worth noting that not every voice was so enthusiastic. Often, people have told me that they see no need for special engagement of women. Usually, they ask: "Do we really need to encourage women to step into cybersecurity? Come on! They

are independent, adult people, they can make it on their own."

To me, this is debatable. For some of my female colleagues, there was no need to follow a role model or support from a female mentor. They didn't feel compelled to find out how many women work here before joining the company. Such individuals entered the cyber field with courage, with a sense of mission, and with excitement to battle against cybercrime. Unfortunately, one size does not necessarily fit all.

Many women perceive the field as a "boys club," but this doesn't paint an accurate picture of the workplace we know. Although cyber is changing and there is increasing diversity, public perceptions change slowly.

Why not be a part of it?

We cannot overlook the fact that according to the (ISC), in 2021, there are over 3 million unfilled positions in cybersecurity, with a workforce that is twice as likely to be male.

Somehow, for reasons discussed time and again, women stay away from cybersecurity. Authors of The Future is Cyber – Opportunity in Cybersecurity Report (2021) surveyed 200 female cybersecurity professionals to better understand why after years of debate, we are still struggling with the gender gap. The women interviewed highlighted three main emphasis points – equal pay, role models and a gender-balanced workforce – that would encourage other women to consider entering the field. So, do we really need to address these?
The answer is obviously yes.

The report provided some other thought-provoking revelations. They also surveyed 1,000 18 to 25-year-old adults to gauge interest in cybersecurity. Even in the young generation, men are still almost twice as likely to consider working in cybersecurity as women (42% vs 26%). We cannot underestimate the power of role models, as there is nothing more inspiring than seeing other women at the helm. For young women, it is important to see strong female representation in the organization. Let's face it: breaking stereotypes about the industry will take time.

The next shift: Diversity, Equality and Inclusion
I can imagine a time when we shift our thinking

and debate from gender balance to diversity of experiences on many levels. That is to say, tapping peoples' identity-related knowledge and experience as a source of learning for the whole organization. All employees are total participants: seen, heard, developed, engaged and rewarded.

This approach is called Diversity, Equality and Inclusion (DEI). In a nutshell, if we create a truly inclusive work environment, there is no need to specify the type of diversity we want to see. We can then effectively build an inclusive, welcoming feeling in any department – including cybersecurity.

Adopting this sustained change leads to higher-quality work, better decision-making, greater team satisfaction, and more equality (Ely, Thomas, 2020). Increasing diversity, including gender balance, is only the first step. The time has come, and the ultimate goal should be to create a truly inclusive culture.

> We cannot overlook the fact that according to the (ISC), in 2021, there are over 3 million unfilled positions in cybersecurity, with a workforce that is twice as likely to be male

WOMEN IN IT

Celebrating the career journeys of Intercity's female staff, **CHRISTINA PENDLETON, CHIEF PEOPLE OFFICER AT** INTERCITY**,** highlights four of Intercity's amazing colleagues, their career journeys and the obstacles they've overcome as women in tech.

MEET FOUR of Intercity's female IT professionals...

Siobhan Bond, Testing and Service Manager
Previously a Support Worker for Mencap, Siobhan was looking for a career change when she decided to break into the IT sector and retrain by completing a master's degree in information systems at the University of Brighton in 2001. After stints at SHL and ROL, Siobhan joined Gage Networks in 2008, which was bought by Intercity in 2015.

When asked what challenges she thinks women face in tech roles, Siobhan said: "I think the biggest challenge is ourselves; whether that's the perception we have of Tech being a man's world, or a lack of belief in our own skills to put ourselves forward for new opportunities. Imposter syndrome is one of the biggest challenges we have. We need to break down the myth that these are men's roles. I think that puts a lot of women off even applying in the first place."

Lisa Batty, Development Manager
Encouraged by her dad to get into tech from a young age, Lisa soon discovered her passion for web design and content management by creating websites for local businesses after finishing college. She was spotted by a community portal team who took her on to write and manage their digital content, and her IT career grew from there. She joined Gage Networks in 2009, leading her to Intercity when the businesses merged in 2015.

Discussing her career journey, Lisa explained: "I have been fortunate to have had some excellent mentors during my career so far – they have been the ones to identify my abilities and set me on a path to achieve much more than I could have anticipated myself.

"I have been able to take several opportunities offered to me to broaden my skills in various marketing, product and development roles in tech industries - the creativity within development has always been a passion and working within a development team is my happy place in work!"

In terms of the challenges that women face in tech roles, Lisa added: "Responsibilities outside of work can be a major factor, especially where flexibility in working hours is limited.

Whether caring for children and juggling childcare, or caring for other family or friends who may be elderly or unwell. This type of responsibility tends to impact women's careers more greatly than men.

"To encourage more women into STEM roles, schools are an obvious starting point, and Intercity do some great work with The Ahead Partnership to support this."

Nyomi Williams, Tier 1 ISOC Engineer
After studying at University of Manchester, Nyomi started her career in tech by undertaking various courses in IT, gaining her BTEC and CompTIA qualifications. This gave her the foot in the door that she needed to land her first IT role as a service desk analyst, where she built up her experience working in a busy environment taking calls, raising tickets, and owning a case from start to finish. This led her to her current role in Intercity, which she started in 2020.

When considering the obstacles she had to overcome to get into IT, Nyomi said: "I had to be very determined and persistent when I was trying to get into a tech role. It can be difficult to be taken seriously as a woman in tech.

"Women are often put off as it's seen as a men's role. They don't see many women represented in the sector, so it can seem unattainable. Girls should be encouraged from an early age, which is why outreach in schools is so important, through workshops and mentoring projects."

Lucy Bristow, ISOC Tier 1 Engineer

Lucy joined Intercity in May 2021 after discovering a passion for coding while completing a marketing apprenticeship. She soon completed an IT course in college and landed a job in IT support at a different company.

Discussing her career journey and the obstacles she's faced, Lucy said: "I loved the element of fixing things and helping people. The communications team at the company caught my eye, and I thought that would be the perfect path for me. And that's where Intercity came in! I get to help people, fix problems and work in communications!"

"I was one of two women in the IT course at college, the rest of the class were all males, which was surprising and often intimidating, as it sometimes felt like we had to work harder to be noticed. I have also often been asked if I am the receptionist, when I am one of two engineers in my team. This did take me aback, that people make assumptions just from hearing my voice."

What is Intercity doing to tackle the obstacles women face in tech roles?

Since joining the organisation in 2014 as HR Advisor, Intercity's Chief People Officer, Christina Pendleton, has led the development of talent within Intercity. She initiated its 'Women in Tech Networking Group', a monthly event hosted by the company, which is designed to celebrate gender diversity, encourage more women into technology roles, and retain and attract more women to work at Intercity. Furthermore, she's also pushed forward the business's schools initiative to help address the lack of diversity across science, technology, engineering, and mathematics (STEM) subjects.

She explained: "We're committed to preventing unconscious bias when recruiting by reviewing job advertisements for gendered language so we're not putting women off from applying. In terms of our recruitment processes, our managers have had unconscious bias training and we ensure we use diverse interview panels to ensure fairness.

"To improve the diversification of our talent pipeline we also work with the social enterprise Ahead Partnership, to encourage more females into STEM careers. This includes presentations at schools, colleges and universities; career panels; offering interview practice and encouraging more women to apply for work experience."

"Our Women in Tech Networking Group discusses challenges faced across our sector and how we can look to address these to ensure we retain a diverse and inclusive working environment. The group not only talk about topics like how to celebrate our gender diversity, managing a work-life balance, but also how to encourage more women into the industry, and importantly, how we can improve our working environment and culture.

"Imposter syndrome is a key issue raised by the group, so we hold events to improve confidence. One of the key parts of the group is that we take it in turns presenting, so we can build confidence in a safe environment.

"We also champion our female talent with mentoring schemes, and we have lots of exciting female talent at Intercity that are already rising into management and leadership positions."

> Our Women in Tech Networking Group discusses challenges faced across our sector and how we can look to address these to ensure we retain a diverse and inclusive working environment. The group not only talk about topics like how to celebrate our gender diversity, managing a work-life balance, but also how to encourage more women into the industry

WOMEN IN IT

Embracing more females within cybersecurity.

BY VIPRE

AS A RESULT of the ongoing pandemic, the cybersecurity industry has continued to accelerate, and has no indication of slowing down anytime soon. With new and innovative methods of hacking affecting businesses of all kinds, the number of cyber attacks is also increasing. A report by DCMS showed that the UK›s cyber security industry is now worth an estimated £8.3 billion – but why do we still see a lack of female representatives for an industry so high in demand?

The industry predominantly remains male-dominated, and this lack of diversity, in turn, means less available talent to help keep up with the rise in mounting cyber threats. Women currently represent about 20% of people working in the field of cybersecurity, says Gartner. Andrea Babbs, Head of Sales UK & Ireland at VIPRE Security, outlines how attracting and embracing more females, and providing equal opportunities within the workplace, is significant for the future of the cybersecurity industry.

Male Dominated Subjects

Even at the very beginning of a 'tech' based career pathway, a woman's success is already limited. Females make up only 28% of the workforce in science, technology, engineering and math subjects (STEM), and are systematically tracked away from these subjects throughout their learning, and pushed towards written and creative arts, narrowing their training and potential positions to go into these fields later in life.

STEM subjects are traditionally considered as masculine by many. All too often, teachers and parents may steer girls away from pursuing such areas – with females making up just 26% of STEM graduates in 2019. Additionally, there is a need for more female STEM teachers, as young girls may feel that they cannot be what they can't see. Because less women study and work in STEM, these fields tend to create exclusionary male-dominated cultures that are not inclusive of, or appealing to women. Barriers into the cybersecurity industry already exist,

such as often requiring a minimum of two years of experience for entry level positions. This proposes the question, how do you get those two years without being offered an opportunity to gain the necessary skills or lessons? This requirement leads to talented, tech-savvy young women entering non-tech sectors, further enhancing the pattern of fewer women in cyber security, as well as technology as a whole, even if they have trained in that subject.

Additionally, females who have been successful in entering the industry often receive different treatment compared to males who work in technology, and can occasionally be mistaken for having a less 'dominant' role. Another VIPRE colleague, Angela, who has been a Support Engineer at VIPRE for over ten years is still asked to put people through to an engineer on the phone – as it is perceived that as a woman, she can't be one herself, despite having over a decade of experience. These stereotypes can therefore discourage young women from entering the field and diminish the accomplishments and self esteem of those already in it.

Obstacles and Challenges

From engineers to analysts, consultants and technologists, the roles are unlimited in cybersecurity. It is clear for women entering the industry that the profession is not limited to just one type of job, and requires a range of skill sets, most of which can now be done remotely – which has been heightened due to COVID-19.

However, research demonstrates that 66% of women reported that there is no path of progression for them in their career at their current tech companies, suggesting the very reason why women tend to end up in the more 'customer facing' roles, such as marketing, sales or customer support. How can females continue to advance once they have a foot in the door into more technical or product focused roles?

Despite girls outperforming boys across a range of STEM subjects, including maths and science, the presumption remains that women are not equipped to take on 'complex' tasks and roles. To support this, research reveals those who attend an 'all-girls' school and see their female peers also participating in technology subjects, therefore do not have lower-esteem when pursuing that industry, and are in a learning environment free from gender stereotyping, unconscious bias and social pressure. And even if a female is successful within these areas, we continue to see a lack of women represented in senior leadership roles on boards, as CEOs and in STEM careers. We need to dispel the myths that women cannot take on 'tech-heavy' jobs.

Maternity leave or taking a break to raise a family is another challenge women face later on in their career. Employers might question the gap in their CV when they eventually want to return to work after taking a break from such a demanding industry to start and raise a family. A recent study shows that three in five professional women return to lower paid or lower-skilled jobs following their career breaks. Additionally, the challenges faced by women returning to the workplace costs the UK an estimated £1.7 billion a year in lost economic output. "It's almost considered career suicide to leave," explains the former senior director of the Anita Borg Institute for Women and Technology, Claudia Galvan.

"These women find it "almost impossible to go back to work, or if they do go back to work, they have to take totally different jobs from what their career was, a demotion, of course pay cuts — and that's if they get the opportunity to get back into the workforce." Based on my personal experience at a previous employer, whilst it was agreed that I could work fewer days a week after returning from maternity leave, this arguably caused more problems. The 'compromise' that was reached was that I could work four days but I still needed to have the same target as people in the same position who worked five days a week. They also reduced my pay by 20% inline with the four day week, and actually created a more stressful environment as I found myself working longer hours over the four days.

Everyone is the target. So why not get everyone involved?

To ensure that women gain equal footing in stereotypically male-dominated industries, there is an often-overlooked factor – men need equality too. Businesses need to offer the same level of paternity leave and support to men as they do women when it comes to looking after a family. This then leads to the need for flexibility within working hours for school runs, for example, as it needs to be understood that men have children too, and women are not always the number one caregiver. For example, my husband received more questions about taking time off if our child was unwell than I ever did. He was constantly asked of my whereabouts as if it was my sole responsibility to look after our child, not both of us. Ultimately, the

A "return to work scheme" would greatly benefit women if companies were to implement them. This can help those who have had a break from the industry get back into work – and this doesn't necessarily mean limiting them to roles such as customer support, sales and marketing

debate here is not just that there needs to be more women in cybersecurity and technology, but that workforces must have diversity within them.

Having a diverse workforce allows there to be a balance of input, more creativity, new perspectives and fresh ideas. From different learning paths, to ways of approaching problems, and bringing in wider viewpoints, women bring an array of different skills, attributes and experience to cybersecurity roles. Working in an industry like cybersecurity where everyone is impacted and everyone is a target – we need everyone to be involved in developing solutions which work to solve the problem. This is not just limited to gender, but also includes age, culture, race and religion. To truly mitigate the risk of cybercrime, we need a solution relevant to all the people impacted by the problem.

Taking Action

To begin with, whether this is from a younger age during school studies or university courses, offering varied entry pathways into the industry, or making it easier to return after a break, women must be encouraged into the field of cybersecurity. These hurdles into the sector have to be addressed. Each business has a part to play when it comes to ensuring that their organisation meets the requirements of all of their employees. From remote or hybrid working, reduced hours or adequate maternity and paternity support, working hours should be more flexible to suit the needs of the employee.

A "return to work scheme" would greatly benefit women if companies were to implement them. This can help those who have had a break from the industry get back into work – and this doesn't necessarily mean limiting them to roles such as customer support, sales and marketing. HR teams must also do better when it comes to job descriptions, ensuring they appeal to a wider audience, offer flexibility and that the recruitment pool is as diverse as can be.

Setting up the Cyber Security Skill strategy, the government has started taking action. Businesses themselves have also started to enforce programmes to support those with gaps in their CV's and are eager to return to their careers, such as the Ziff Davis's Restart Programme. This programme is committed to those who have a gap in their experience and are keen to return to their careers, providing them with an employment opportunity which emphasises growth and training, helping professionals return to the workforce. When businesses step up and take matters into their own hands, it provides more available paths into the industry for everyone.

Creating a Gender-Balanced Cyber Workforce

The cybersecurity industry remains an attractive and lucrative career path, but more should be done to direct female students in the right way to pursue a job role within STEM and to support those who are returning to work.

There is more of a need than ever before for more diverse teams, as cybersecurity threats become more varied. Becoming part of a gender-balanced cyber workforce is an efficient way to avoid unconscious bias and build a range of solutions to complex problems.

Whilst the latest government initiatives and courses to attract diverse talent, and better the UK's security and technology sectors is a great start, the only way to progress is more investment and emphasis on STEM as a career path. This will encourage both males and females, who are treated equally and can see themselves reflected in their senior management teams.

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In what has been, and continues to be, extraordinary times for the business world, it seems doubly important to recognise the projects, innovations and individuals which have made such a huge difference during 2022. Almost overnight, employees switched from office working to working from home, and the new, or next, normal, means that, into the future, what might be called a 'hybrid work' model looks set to evolve, with flexible working very much the order of the day. What was already becoming a trend as part of many organisations' digital transformation programmes, has been accelerated.

The SDC Awards 2022 will celebrate the achievements of end users and the IT community as they have innovated like never before to ensure business continuity in these challenging times. This year more than any other, please do make sure that you enter our SDC Awards. There's no limit to the number of entries, all of which are free of charge, and we'll be promoting all the short-listed entries via Digitalisation World's multi-media platform over the coming months, ahead of the awards ceremony. We really do want to celebrate and recognise the many amazing achievements which have come about in response to the coronavirus.

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AI and Machine Learning:
Allies in digitalisation and improved network user experience

AI is one of the technologies that has advanced significantly in recent years as a result of changing market conditions, and received a lot of attention, particularly in the IT industry.

BY JAMIE PITCHFORTH, HEAD OF UK STRATEGIC BUSINESS AT JUNIPER NETWORKS

AI IS ALREADY producing measurable advantages, from proactive support for self-driving network optimisation to much-needed user experience knowledge. The idea of AIOps (Artificial Intelligence for IT Operations) is increasingly gaining traction from customers and providers, despite the fact that AI and machine learning (ML) are already widely used.

AIOps combines big data and ML to automate, control and optimise processes and IT operations. One of the key targets of AIOps is to reduce the Mean Time To Resolution (MTTR), providing a set of functions able to identify the root cause of existing problems, suggest possible solutions and automate the operational activities.

Real support for digitalisation

Today, it is no longer sufficient for networks to merely function properly if we want to provide end users with a good network access experience. Instead, it's critical to gather information, insights, and analytics about not only the network infrastructure that allow users to access network services, but also the actual experience when using that service. It is impossible to comprehend when an issue arises and how to fix it without data and insights.

Also, even when an anomaly in the customer experience is detected, it becomes fundamental to have tools and platforms that leverage AI mechanisms and ML algorithms. They must be

By gathering quality data and leveraging ML algorithms, the AI applied to IT operations continuously monitors the network and processes data (coming from the devices and the users) in order to find performance and quality indicators within a device or connection. This information is then made available to the network operators who are thus able to immediately identify when a deviation occurs and to fix it even before the user is aware of the anomaly

capable of automatically defining the root cause and providing a path for automatic resolution by always delivering the best possible experience to the user.

By gathering quality data and leveraging ML algorithms, the AI applied to IT operations continuously monitors the network and processes data (coming from the devices and the users) in order to find performance and quality indicators within a device or connection. This information is then made available to the network operators who are thus able to immediately identify when a deviation occurs and to fix it even before the user is aware of the anomaly.

Best of AIOps and user experience

AIOps is an industry term that describes technology platforms and processes that enable IT teams to use AI to make faster, more accurate decisions and respond to network and system incidents more quickly.

AIOps contextualises massive amounts of telemetry and log data from the IT infrastructure of an organisation in real-time or almost real-time. It then combines it with historical data to produce useful insights. AIOps is a representation of an assistant with in-depth knowledge of the network and IT environment and the capacity to use that information to provide real-time analysis and carry out or suggest future steps.

AIOps increases the efficiency and performance of individual applications and services. Organisations using AIOps as part of their automated infrastructure and operation workflows are improving security, outage incident response times and infrastructure purchases. Those just starting with AIOps see it as an investment in performance analysis, anomaly detection, and event correlation that gives them the ability to predict future network-impacting events.

The road to the AIOps Platform

Starting from data collected thanks to telemetry sensors and log systems, an AIOps platform can quickly identify not only the cause of any occurring problems but also the users impacted by them. This is exactly what Mist AI by Juniper Networks

does by providing an "intelligent" interface which can be queried in natural language. What makes this possible is the AI engine Marvis, the heart of Mist AI. The Marvis Virtual Network Assistant (VNA) brings conversational AI to IT operations. It continually learns about the network as it ingests data and contextualizes requests for automated, predictive actions. It continues to build out its Natural Language Processing (NLP) capabilities with Natural Language Understanding (NLU) and Natural Language Generation (NLG) so users can interact with it as if it were another team member.

These days, network performance and connectivity are crucial. In order to make the user experience as seamless as possible, network management should be streamlined and access and performance issues can be decreased. A "basic" SD-WAN can be transformed using Mist AI technology into an AI-driven WAN that prioritises the user experience. Mist AI uses AI and ML to simplify the network and automate a number of crucial tasks. With automated and remote troubleshooting, issues are proactively fixed before users even become aware of them. Delivering enhanced network experiences in this way will change the way people connect, interact, and live.
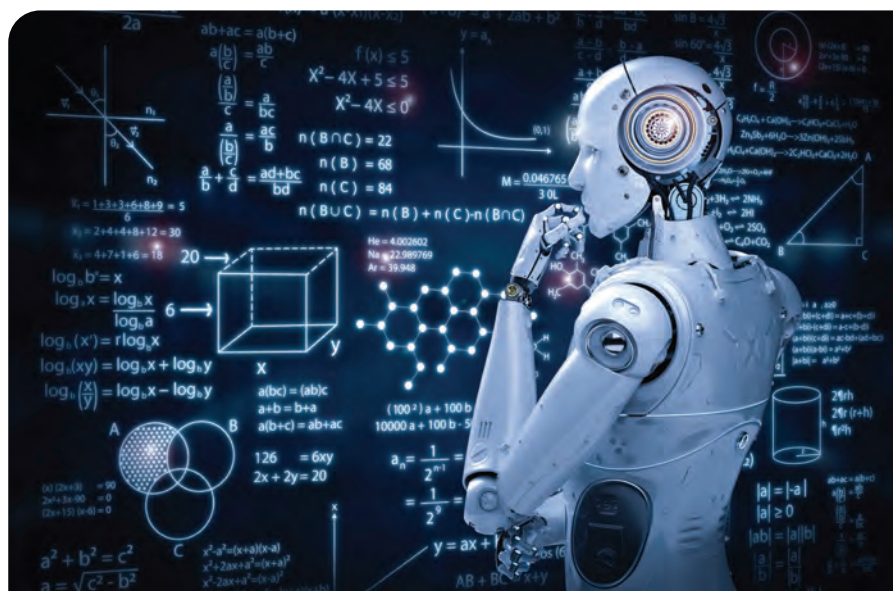
The hard road to AI deployment

Artificial Intelligence (AI) is booming. A Gartner report in 2019 revealed that since 2015, AI implementation exploded by 270 percent. According to PwC, as AI implementation continues to spread, AI's global economic impact will be valued at over $15 trillion by 2030.

BY RAVI ANNAVAJJHALA, CEO, KINARA

HOWEVER, it must be recognized that successfully training and deploying AI is no mean feat. In fact, a 2020 report from IDC shows that as many as 28% of AI and Machine Learning (ML) startups fail. Many organizations find the process beset with challenges and hurdles that stall their journey towards deploying AI.

Training is crucial to success

Getting an AI model to deployment can be an immensely fraught process. Companies must first collect the right amount of data to train their models. The actual amount of data required depends both on the complexity of the problem and the complexity of the learning algorithm. That data must then be labelled so that it can differentiate the various elements which the AI model will spot and analyze. This is an arduous task which demands time and expense to identify the objects, motions, and inputs that the AI is meant to detect. Fortunately, there are specialized tools that can significantly help in automating this labelling process.

Then users have to choose their models. Few ever create their own because of the tremendous skills and effort that are required. Furthermore, there is already a wide availability of pre-existing models which can be selected for most use cases.

However, selecting those models can present another challenge. Developers must balance several factors such as accuracy, total number of computations, or the sheer size of the model.

Take, for example, a cashierless store that often requires 100s to 1000s of AI-powered cameras to establish what's going on within the store. Further challenges come as developers try out different options and attempt to balance their various needs.

They may initially opt for one model like MobileNet-SSD and then find that its accuracy falls short of the requirements and will then switch to an alternative such as Yolo or Efficient-Det – models which provide greater accuracy but require more processingpower.

Training to deployment

With those elements set in place, training can begin. These AI models must be trained to know what to spot, how to respond and how to predict behavior. This typically involves training data that simulate and teach and continually improve the model over time.

Training is typically carried out in the cloud because of its capacity for high performance processing and the fact that cloud services like Microsoft Azure have readily understood mechanisms for training models.

When it is time for full operation, organizations must deploy their AI models onto live systems. This can be an especially difficult phase and it is here where many projects stall. A 2020 report shows that 40% of companies said that it takes more than a month to deploy an ML model. Only 14% were able to do so in seven days or less.

One of the reasons behind the stalls is that many do not consider the architectural and technical specificities of their edge AI accelerator. To successfully deploy a preferred ML model into a real system, it must be integrated into an inference pipeline, producing outputs which an application can act upon. It's here where a whole new range of factors and considerations come into play that take the "on paper" model onto an operational edge system.

The importance of tools

At this stage, tools become a critical ingredient for success and organizations must pick the right accelerator with tools that can ease the process of taking the chosen model into live deployment. Taking a system from the cloud to the edge requires tools that can be easily installed, set up and are - without any special configuration – able to optimally convert that model to the format required for the chosen edge AI accelerator.

At this stage - where the model is quantized and compiled - AI projects can run into accuracy problems. AI models are mostly trained with 32-bit floating point format to ensure that accuracy remains high. However, when they're deployed, that model must be quantized into the 8-bit integer format, which AI inference accelerators use to process models and also reduces the model size by approximately 4 times.

Retraining might also be required when developers must tailor their models to the specific needs of the edge AI accelerator that the model will be deployed to. These might have architectural limitations which mean that the model cannot be run without losses to performance or accuracy as they currently exist. This can be a pain point for AI initiatives and so, again, developers need to choose their tools carefully to limit or avoid the need for retraining in these areas. The process of conversion can involve a significant amount of accuracy loss if not done carefully. From that point of view, tools that maintain that accuracy loss to a minimum are crucial to success.

Training is an ongoing process

The move from training to deployment doesn't just happen once. In fact, a well-maintained AI model will likely be retrained and redeployed continuously over its lifespan. After all, AI models learn and as they operate within a given use case, the system collects information to learn how to more precisely and more efficiently perform the required operations. If a model is working correctly, it should be able to anticipate what happens within a normal range of activity.

However, when new things occur, models must incorporate the new data. Although this is an example of a cloud-based AI algorithm, according to one study from The Bank of England, over a third of British bankers reported that their ML models struggled during the pandemic. They had never seen a shock like that before, and as a result, had not incorporated that possibility into their understanding. Those models would have had to be retrained and many such AI models must do so consistently to update their analysis capabilities and take advantage of that inherent ability to learn.

Retraining is also used to refine a model to fit a given use case. Openly available models will typically be trained with datasets like Google Open Images, which are readily available online. These can encompass a wide variety of data types and developers will often need to retrain their models to fit the specific dataset that they want their AI model to analyze. If, for example, an image recognition model has been trained but the developers want to use it within a store, it may have to be retrained to spot cans of beans or bunches of carrots.

Arriving at your AI destination

Deploying AI can be challenging and many stall on their journey, which can be filled with obstacles. However, the key to reaching the destination is to carefully select the right AI model deployment tools and accelerators. These decisions will make the difference between an effective, live AI application and one that stalls at the side of the road.