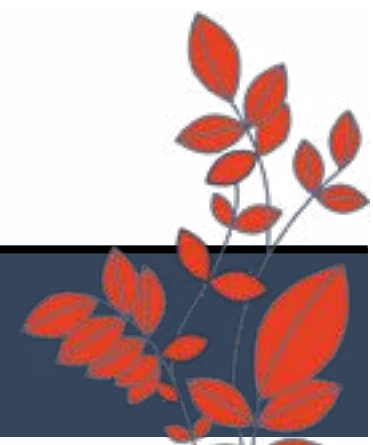


THE FUTURE CIO

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Hiring IT talent has never been harder. CIOs need to learn what today's candidates really want

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LEADERSHIP

Silicon ceiling: why the ultimate career step is the hardest

CIOs are wielding more strategic influence than ever, yet relatively few go on to lead their firms. What's hindering them from becoming CEOs?

Christine Horton

The role of the CIO is evolving. Historically pigeonholed as 'tech bods', CIOs are making high-value contributions that are often inseparable from their firms' wider business strategies.

It's natural to wonder what's next for them as their work becomes ever more pivotal: given their growing influence as strategic decision-makers, surely there's a strong case for more of today's CIOs to become tomorrow's CEOs? While those in the top job typically emerge from the operations and finance functions, are there qualities that are unique to CIOs that could strengthen their leadership credentials?

"The people overseeing the data and technology strategy in a company make good candidates to be its next CEO. But it is not their tech or data analytics skills in isolation that are important," stresses James Berry, lecturer and director of the MBA programme at University College London School of Management. "A good CEO will not only understand the function and potential of technologies; they will also have a broad enough understanding of the wider business to know how the data produced by those technologies will be used by the organisation's core functions."

There is no denying that relatively few CIOs become CEOs, especially outside the tech industry. One reason could be that the CIO's realm of expertise may not be broad enough. A common view is that CIOs don't get as much exposure as most of their C-level colleagues do to other key functions in the business, which is seen as a necessary precursor to gaining the top job.

Jon Faulkner is the founder and CEO of design consultancy 6bythree Digital,

having previously served as CIO at the London School of Hygiene and Tropical Medicine. He suggests that entrenched attitudes about what someone who's come up through the IT function can bring to the party are hindering the further progress of CIOs.

"I have had many IT leadership roles," Faulkner says. "But there was a general

“There was a general belief that, because of my technical background, I didn't have all the right skills for stepping up

belief that, because of my technical background, I didn't have all the right skills for stepping up to a broader role as a CEO (or even COO). I've since gone on to set up and grow two digital agencies. Today, I have full accountability, covering finance, sales, marketing, general management, leadership and our delivery of strategy and consulting services."

He continues: "CIOs absolutely do have the right skills to step up, as they'll invariably have significant financial responsibilities, albeit perhaps not full profit and loss.

The modern CIO is continually engaging in partnerships, both internal and external, and developing collaborative solutions that reduce operational friction and align with their organisation's immediate needs and future direction."

Danny Reeves is another former CIO who has moved up to the top job. Having worked as CIO and director of client services at construction giant Balfour Beatty, he is now CEO of data management company Exonar. He argues that CIOs should be gaining all the skills they require to become CEO in the course of their work.

While Reeves believes that "being a good CIO does not necessarily make you a good CEO, you do experience the complexities of people, operations, marketing and sales (usually to internal stakeholders) and budgets, all of which lead well to the CEO's role. For my money, the most important skills are managing people and developing inclusive and positive cultures. That's the same whether you're navigating the twists and turns of startup life or dealing with corporate complexity."

Caroline Sands is a partner at executive search company Odgers Berndtson, where she heads the CIO and technology officers practice. Drawing on her experience of working with firms to appoint former IT chiefs to CEO positions, she says that the pandemic-induced uptick in digital transformations has "led to a new appreciation for the skills that CIOs can apply holistically to organisations".

Sands observes that the strong appetite among corporate boards for digital transformation has "necessitated the appointment of leaders with a deep understanding



of enterprise technology. In some cases, this appetite has been voracious and has required leaders who understand when budgets should be allocated to technology projects just as much as when they should not. It's making a compelling case for CIOs stepping up as CEOs."

But are they fully equipped to handle some of the other demands of the top job? Sands argues that, although they may be

focused on technology, CIOs are still functional leaders. This gives them a good grounding for taking certain strategic initiatives from their CEOs.

Such assignments might include "leading on a company's inclusion and diversity strategy, its approach to sustainability or the cultural aspects of a digital transformation", she says. "In an ecommerce or B2C business, for example, CIOs may also have the opportunity to get involved in product development."

Sands continues: "We often advise CIOs to seek ways of showcasing their strategic know-how. Such opportunities commonly include turning around a failing business unit and bringing a new product or service to market. Technology underpins almost every aspect of a business, which means that there's plenty of scope for a CIO to gain broad leadership experience."

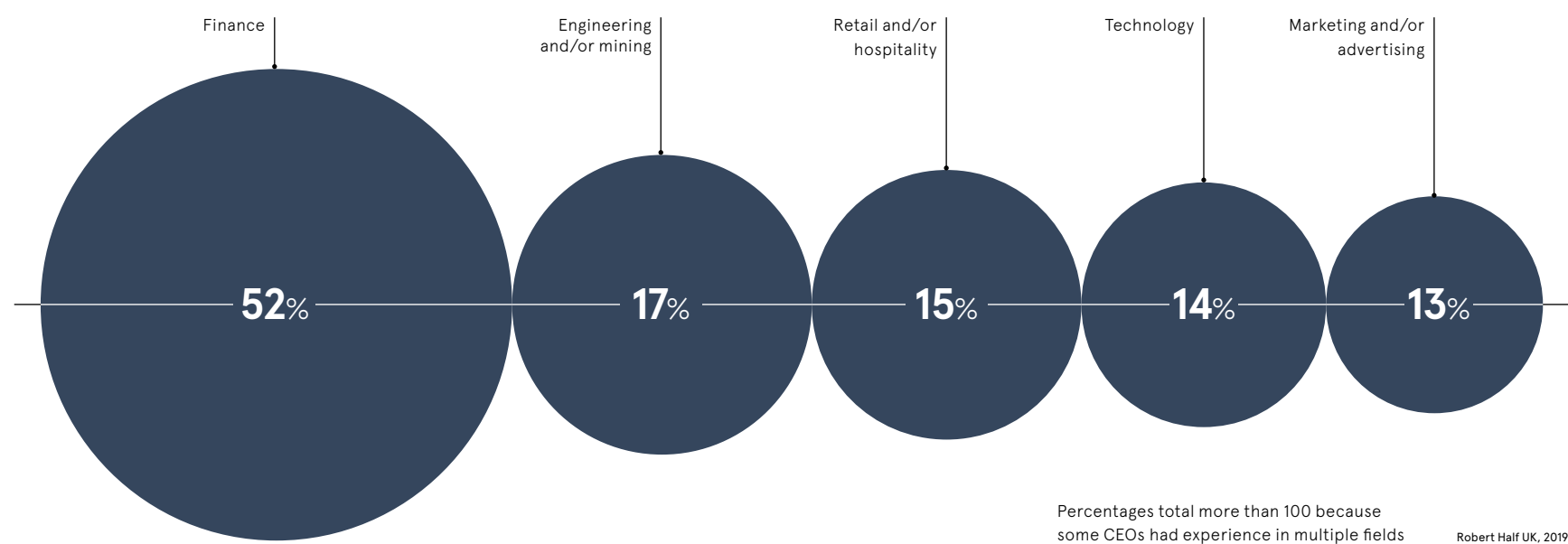
Offering a different view, Matt Cockbill, managing partner of the IT and digital leadership practice at Berwick Partners (part of the Odgers Berndtson group) questions why CIOs would feel a strong need to seek out the top job.

"They're capable people who have a box seat at the forefront of the future of work," he says. "Where they may have sought the COO/CEO path in the past as they outgrew an inward-looking role, today's CIOs are adept leaders with the capacity to add value to colleagues and customers. Some will continue exploring that path. But, where businesses are utilising the ever more dextrous leadership skills of their CIOs, enabling them to broaden their role and maximise their contribution, why would someone in that role change lanes?"

The increasing pace of digital transformation has put CIOs in a unique and elevated position. As Sands notes, they have been required to "build bridges between disparate business units; 'sell the story' of transformation to the whole business; and manage any cultural fallout caused by the implementation of new technology. These tasks call for the fundamental skills of people management, communication and leadership that any CEO would need."

FEW TECH SPECIALISTS HAVE STEPPED UP TO LEAD THE UK'S BIGGEST BUSINESSES

Background experience of FTSE-100 CEOs



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How open leadership supports digital transformation

Efforts to accelerate digital transformation are being held back by challenges finding the right talent. At a virtual roundtable sponsored by Red Hat and Intel, senior leaders said a more 'open' culture is required. To watch the full roundtable on demand, visit raconteur.net/roundtables

Ben Rossi

In 2020, digital transformation leapfrogged seven years of progress in a matter of months. This was the finding of a McKinsey research report released in the autumn of 2020 that went viral enough for most business execs to be able to recite its top finding. Of course, they didn't need to be told – they were leading it.

For CIOs and other leaders who had long fought to accelerate the momentum of digital transformation in their organisations, the Covid-19 pandemic presented an extraordinary window of opportunity. The window that was initially opened due to a necessity to continue operating through unprecedented lockdowns, however, is yet to close. The necessity lives on, driven by a realisation that digitisation is about far more than just enabling remote work.

In a follow-up survey by McKinsey last year, just 11% of companies said their current business models will be economically viable through 2023. To stay relevant, they must take digital transformation to the next level, in some cases even building new digital businesses.

What Intel refers to as the 'four superpowers' – namely cloud, AI, edge and 5G – fuel digital transformation and the digitisation of everything. In this landscape of rapid digital disruption, technology has become more critical than ever before.

Yet while the upper echelons of practically all organisations now recognise the crucial importance of digitisation, and are ready to invest the sums necessary to transform their business, there's a sting in the tail. Most of the key challenges involved in executing digital transformation successfully are not related to technology per se, but to people – or rather the lack of them with the necessary skills. And few are currently overcoming the talent challenge.

Panel

Steven Zuanella, group chief digital officer, Generali

Gavin Laybourne, CIO APMT, IoT, and strategic brands and fleet, Maersk

Hans J Roth, EMEA general manager, Red Hat

Colin MacHale, EMEA territory director, distribution, partners and programs, Intel

Simon McKinnon, chief digital and information officer, Department for Work and Pensions

Roman Beilhack, head of new technologies and internet of things underwriting, Munich Re

Ready to face the challenge

It is against this backdrop that a roundtable, sponsored by Red Hat and Intel, was convened on 24 February. It brought together business and technology leaders from different sectors to share their experiences and discuss how traditional approaches to leadership must evolve.

"The last two years have given a significant boost to our digital transformation progress," said Steven Zuanella, group chief digital officer at Generali. "But by increasing the volume of work in this area, the amount of people required with the right skills has also grown. We were already facing shortages of specialist skills like data scientists and automation engineers, but that has accelerated, and the range of skills we need is broadening too."

"There are plenty of people out there with an in-demand skill set, but applying that in a business context with business rationale and customer-centricity is not as easy. Attracting people that can do that is a real challenge because there is so much choice for them. There are lots of sexy companies to join and as a more established legacy business we aren't always top of the list, so we have to find other ways to foster those skills, such as upskilling internal resources."

Upskill and away

Over the last 12 months, Generali has enrolled more than 7,000 employees, about 10% of its workforce, in internal upskilling programmes. The financial services company, which is one of the largest global insurance and asset management providers globally, has also introduced 'new role schools', which are mini university courses built specifically to upskill people in key areas of demand such as CRM, smart automation, analytics and AI.

Organisations must, however, ensure their focus on gaining new skills doesn't cause them to drop the ball elsewhere. Amidst a widespread uplift in people leaving their jobs in recent months, which the media has labelled the 'great resignation', companies must be equally concerned with retaining existing skill sets and ensuring people are happy and engaged.

"You've got to be careful that you don't cultivate an A and B culture, where the A team is the people you're trying to attract from the outside and the B team is those already in the organisation saying what about me?" said Gavin Laybourne, CIO APMT, IoT, and strategic brands and fleet at Danish shipping company Maersk. "That's what we're focused on: not just attraction of new talent but retention of existing talent."

Laybourne also pointed to the shift in culture needed for successful transformation. "People say transformation is about the removal of existing systems. But it's not just about an IT system, it's about systems of



“The concepts of open leadership and digital transformation are no longer the domain of technology specialists. They need to be embedded across the organisation

thinking. People will often say when do we finish this transformation programme? But transformation is continuous and open leadership is a way of shifting thinking and behaviours to align with that. We've been focusing on fostering an engineering-led culture. Engineers want to be great engineers, so give them the space to develop the best tools and practices. Managers shouldn't be telling them the tools they should be using, but what we can do is empower people and foster the right open culture."

Open for business

Whether they label it in this way or not, most organisations are now championing the idea of open leadership. According to the Open Organization, it embodies principles such as transparency, inclusivity, adaptability, collaboration and community, which should be interconnected. Open organisations empower people at all levels to act with accountability.

Open leaders, meanwhile, commit to transparency about both their goals and constraints, and to creating more inclusive workplaces by bringing together diverse groups of stakeholders in environments they can thrive in. Crucially, open leaders constantly seek to align their teams' actions and behaviours with the overall mission and goals of the business.

Red Hat, which has been a pioneer of open leadership, dismisses the traditional way of calling somebody a 'leader' when they are appointed to a senior position or given a certain title. Instead, Red Hat employees earn their leadership status when they adopt open leadership behaviours and mindsets. Defining these principles enables Red Hat to cultivate a culture in which they are normalised and where passionate teams enable the best in each other.

"Open leadership has been crucial ever since the start of Red Hat," said Hans Roth, EMEA general manager at Red Hat. "You can't force people to work efficiently – they need to be passionate about doing it. Open leadership creates a safe environment and allows diversity of opinions so people feel really connected to what they're doing. We do a lot of diversity and inclusion work across different minority groups within Red Hat, but it's also important to have diversity in mindset. That means enabling people to speak out without consequences."

"We have built a culture of open leadership partly by actually measuring the performance of managers against open leadership principles. At Red Hat we have four core values: freedom, accountability, commitment and courage. They are the elements we use to benchmark both our business and our people. There's a formula that says 'strategy times execution to the power of trust equals results'. The only way to scale is to scale with trustful, integrated leadership positions where you can look in the eyes of colleagues or partners today and tomorrow. Leaders are catalysts that empower your teams to trust each other."

Colin MacHale, EMEA territory director, distribution, partners and programs at Intel, added: "In addition to open leadership, what we've seen Intel focus on is an open ecosystem being equally important. Innovation thrives in an open, democratised environment where people can connect, communicate, and jointly respond to situations. Now more than ever, the world faces many challenges that demand innovation and transparency."

Sit down, speak up

Roman Beilhack, head of new technologies and internet of things underwriting at Munich Re, one of the world's leading

reinsurers, is a keen advocate of open leadership, and told the roundtable participants it gives every member of his team a seat at the table. He focuses on creating opportunities to ensure people are heard, which means removing the traditional hierarchical management structures that deter them from speaking up.

"Open leadership works by having very flat hierarchies, delegating decision powers and having agile methods which allow teams to arrange themselves as much as possible," Beilhack said. "Open leaders are transparent and talk openly about what works well and, equally important, what doesn't work so well. That's easier said than done because a lot of us have worked in a business culture and environment where we pretend to be the best."

"If you want to improve, you have to continuously talk also about what isn't going so well and why. That is very important because the role of the manager changes dramatically. A good manager is no longer the person who apparently knows best. A good manager really needs to become a coach of the team and an arranger of good teams. The manager becomes the servant, but that requires cultural change. Introducing new methodologies and processes is also important but if there is no cultural change, open leadership won't work."

Swinging the pendulum

It also won't work if there is a mismatch between empowerment and alignment with necessary guardrails. It's crucial to both digital transformation and retaining talent that leaders give their teams the freedom and agility to solve problems how they want. But swinging too far on the pendulum of flexibility can open up vulnerabilities or cause issues that are counterintuitive to successful transformation. This spectrum can often bring tension.

"The concepts of open leadership and digital transformation are no longer solely the domain of technology specialists. They need to be embedded across the organisation," said Simon McKinnon, chief digital and information officer at the Department for Work and Pensions. "But for that to happen, we must have balance between empowerment and alignment to ensure we share data and technology across lines of

11%

of companies said their current business models will be economically viable through 2023

McKinsey 2021

business or product areas. That is another cultural shift we're having to go through."

There are many challenges ahead as organisations continue on their digital journeys. The leadership principles they embrace will differ from company to company. But one thing they must be united on is their conviction to continue the pace of digitisation.


"The tools continually evolve to enable us to do different things, but we as people and leaders also need to collectively evolve to take advantage of them," said MacHale. "The pandemic has accelerated digital transformation through sheer necessity but, if we're not careful, returning to a mindset of inertia will set us back. The opportunity is now to lead our organisations forward. That sounds simple but it's not that easy to do. It's incumbent on us to continue the momentum from the last couple of years and drive transformation for the good of everyone."

There is no start and end to transformation – it is a continuous process. With the right leadership, culture and a steady foot on the pedal of innovation, organisations put themselves in the best position to succeed.

For more information, visit redhat.com/en/solutions/digital-transformation

 **Red Hat** |  **intel.**

Our panel on "What does it mean to be a successful leader in 2022?"

 **Steven Zuanella**


It means creating a culture of inclusiveness and sustainability, empowering our people to innovate, and equipping them, most importantly, with the skills and ways of working for the digital age.

 **Gavin Laybourne**

The environment is going to be fluid, and it will continue to be fluid, and it will continue to be disruptive. And I think, as a leader, it's how you give that clarity to the people around you so that they can be successful, so that they don't need to worry about the noise.

 **Hans J Roth**


It starts with being a catalyst, in order to empower the teams to trust each other and foster that acceleration or scale of business or scale of working together. It's all about the working models.

 **Colin MacHale**

Being a successful leader in 2022 is about enabling our people to be the best that they can be.

 **Simon McKinnon**

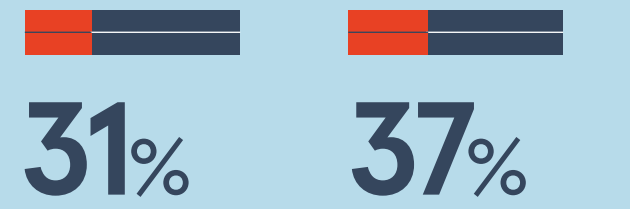
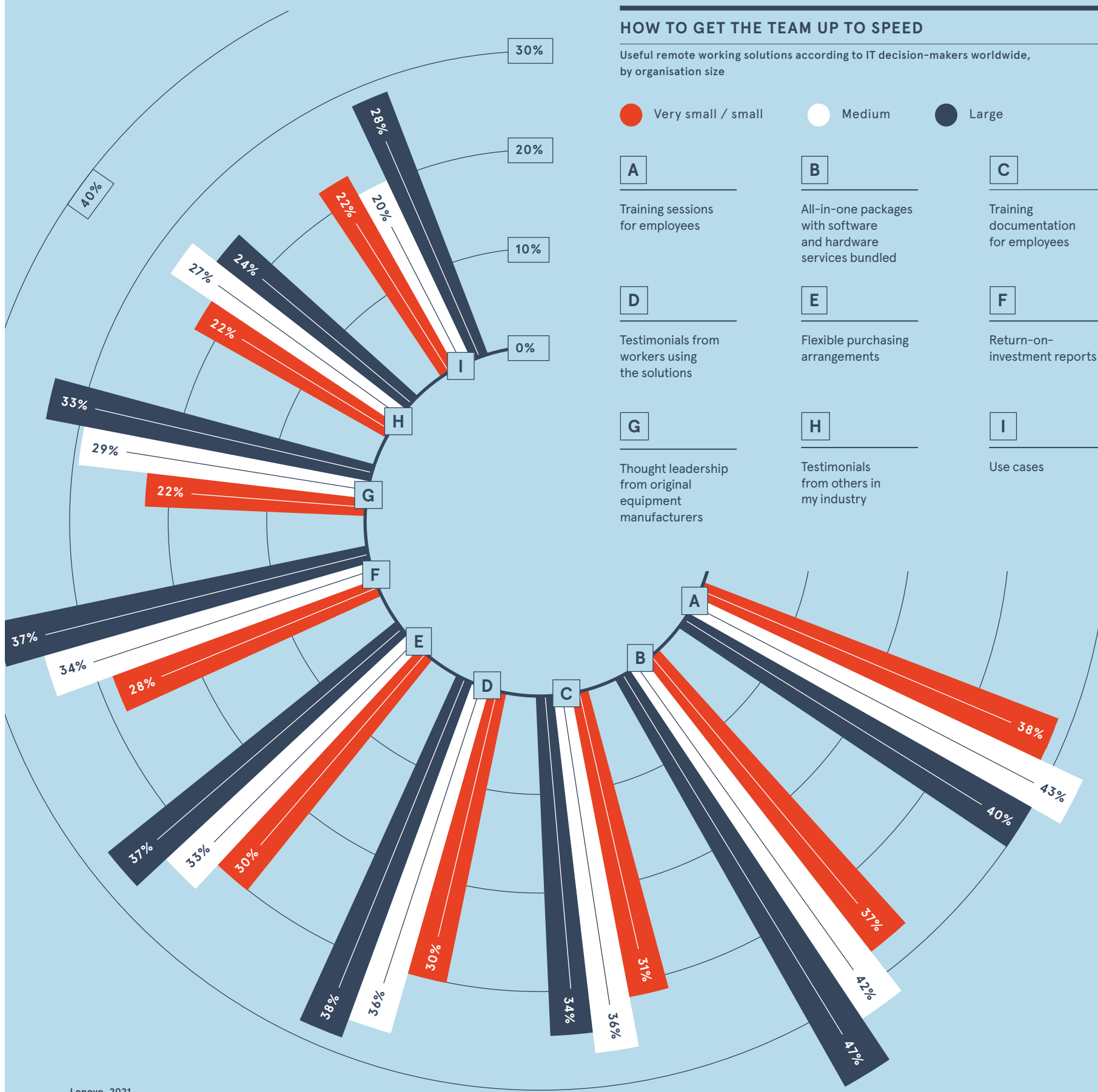
It's about making sure that everyone understands the outcomes you're trying to achieve, and then empowering and supporting the individuals to deliver them.

 **Roman Beilhack**

Being a successful leader in 2022 means being wide awake and humble.

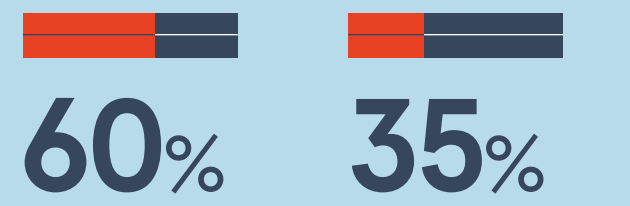
THE CIO AND HYBRID WORK

As many businesses grapple with the logistical and cultural complexities of the hybrid working regimes they have adopted, IT chiefs have taken responsibility for ensuring that the digital working experience is as effective as it can be. Despite this, a significant proportion of remote workers are still struggling with accessibility, while even more have proved vulnerable to cyber attacks. How should CIOs respond?



Wikibon, 2021

IDG Research Services, 2020

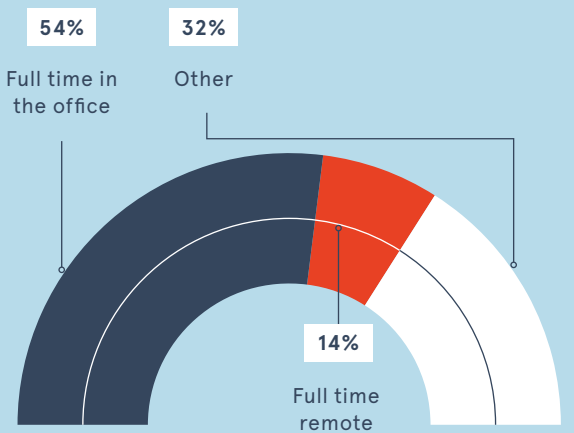


Proofpoint, 2021

Computing Technology Industry Association, 2021

HOW HAS WORKING CHANGED SINCE 2020?

Share of enterprise IT workers by type of employment, March 2020

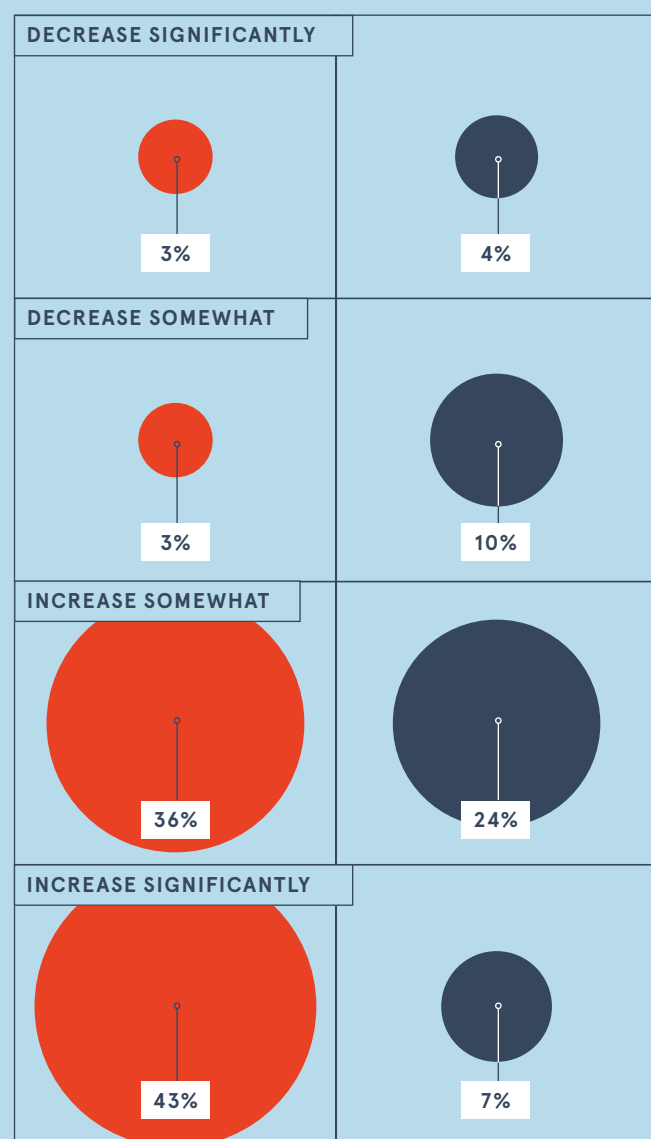


Flexera Software, 2020

HOW TO PREPARE FOR THE MEDIUM TERM

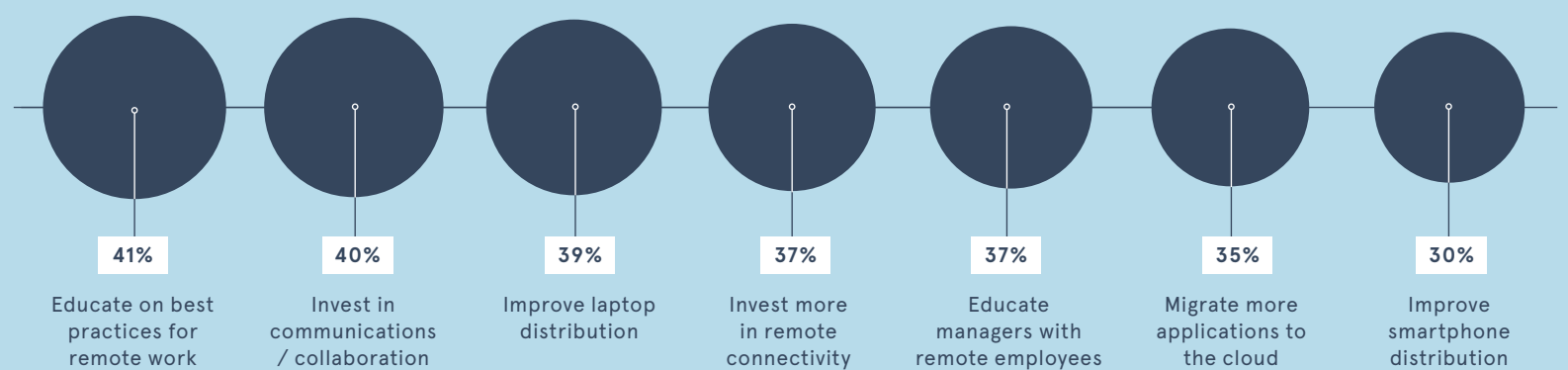
Share of CIOs planning changes to investments in IT staffing worldwide

● Remote working ● Offshoring



HOW TO OFFER THE BEST ONGOING SUPPORT FOR STAFF

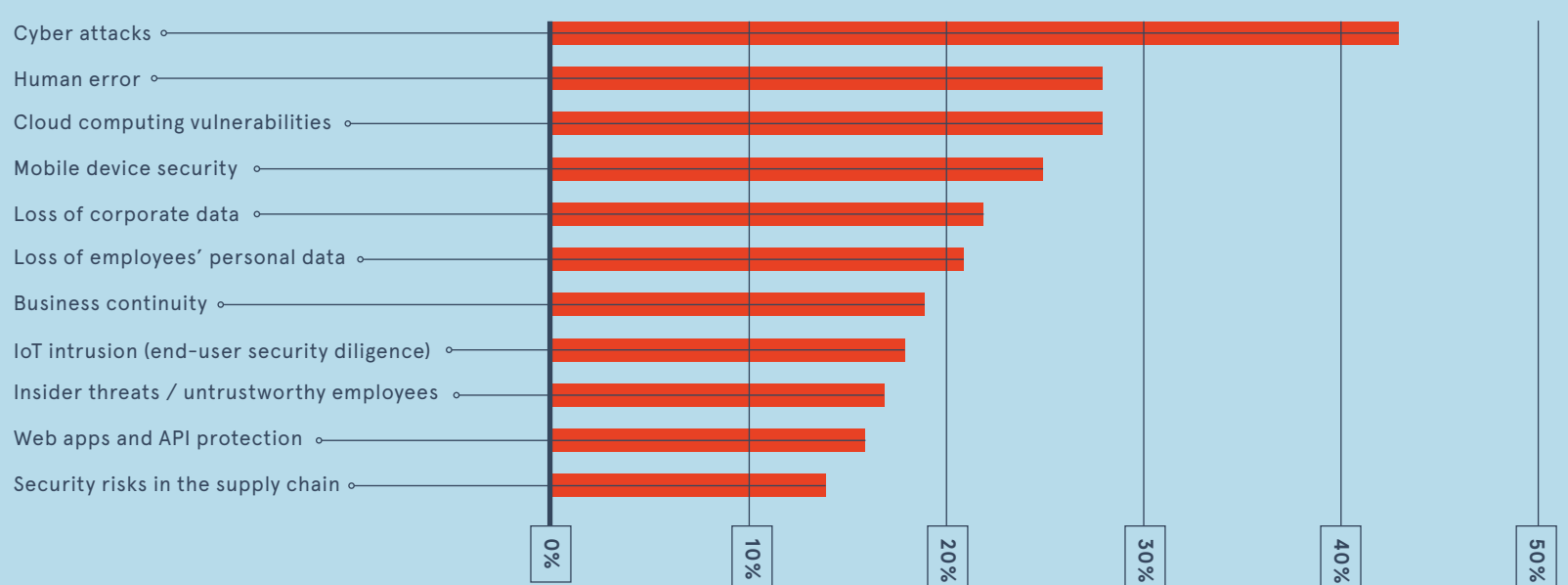
Share of CIOs planning actions to help their IT teams worldwide in the short to medium term



Computing Technology Industry Association, 2021

HOW TO THINK ABOUT THREATS

Share of US and European CISOs citing concerns about remote work



Sapio Research, Citrix, 2021

INTERVIEW

'With the right sort of teaching, anyone can learn anything'

Since finding a fun – and profitable – way to teach people how to use spreadsheets, **Kat Norton** has had to widen her own 'income' column. She offers CIOs a winning formula for learner engagement



Katie Byrne

Kat Norton wants to shake up the way we feel about learning. Better known on TikTok and Instagram by her user name, Miss Excel, Norton has been adding her distinctive brand of youthful exuberance to Microsoft's venerable spreadsheet program since she started posting usage tips on the video-sharing networks in June 2020. Short videos such as *Scrub Data*, *Time Trick* and *Heat Map Magic*, set to popular R&B tunes and accompanied by a beaming Norton dancing to the beat, have helped her to attract well over 1.3 million followers to date.

This product of a pandemic lockdown has turned into a successful enterprise for the

“Many companies use stale training methods, taught in a more traditional style that loses the attention of the participants”

27-year-old Long Islander, providing the springboard for her online academy, which opened in November 2020. This offers video-based learning for businesses and individuals who want to improve their knowledge of Microsoft packages and selected Google applications. More than 10,000 people have enrolled so far on courses ranging from Word with Miss Excel, priced at \$297 (£220), to Complete Microsoft Office Suite at \$997.

The concept of Miss Excel sprang from Norton's genuine passion for the program. Having started using it as a primary school pupil, she began to get “really good” at Excel while studying for her MBA at Binghamton University in upstate New York. She was then able to “put the dots together” while conducting securitisation reviews for banks

as an employee of California-based global consultancy Protiviti.

“I used spreadsheets daily in my work and would constantly be combining tricks in innovative ways to solve problems in my capacity as the company's Excel ‘subject-matter expert,’” Norton recalls. “As a passion project, I developed an internal training programme. I went on to spend years hosting Excel courses around the US.”

When the lockdown put paid to her travel plans, Norton suddenly had more time on her hands. She realised that the power of social media could enable her to help so many more people feel “more comfortable and empowered” when using the software.

There's a simple principle underpinning Norton's approach to teaching a topic that's widely seen as prosaic: make it memorable.

“Many companies use stale training methods that are taught in a more traditional style that loses the attention of the participants,” she says. “I use the learning method espoused by Jim Kwik [the author of *Limitless: upgrade your brain, learn anything faster and unlock your exceptional life*]. He believes that information plus emotion equals memory. In essence, I create content that combines three things I love: Excel, helping people and dancing. It became this super-fun creative outlet for me that people enjoyed learning from. I think it's why my courses have been so successful. A lot of education misses out on the emotional spark that helps learners to recall information.”

When Norton describes her courses as “so successful”, she's not exaggerating. Since she uploaded her first video to TikTok (in which she showcased Excel's left/right function while dancing to Drake's *Toosie Slide*), Miss Excel has become a seven-figure business. Sales of her B2C courses alone have generated more than \$1m.

While female white-collar workers aged under 35 comprise the biggest customer base for Norton's courses, she believes that anybody, regardless of demographic, can get the most from this sort of material as long as they're open to it and confident enough in their ability to pick up new skills.

“With the right sort of teaching, anyone can learn anything,” she says. “But self-belief from the learner is critical. It's why I

work hard to empower my students and keep them engaged.”

Norton believes that creativity is crucial for any CIO seeking ways to inform colleagues in other functions about important tech-related matters that may seem arcane. The dangers of phishing, say, can be made more fathomable if they're conveyed in a way that extends beyond the standard all-staff warning email, which is likely to be forgotten quickly by many recipients. You needn't start throwing shapes on MS Teams (unless you want to, of course), but your message will have far more impact if you can make it an engaging learning experience that your target audience can relate to.

Whether you're trying to school your CEO on ransomware or the wider business on the merits of Trello, consider beforehand what approach is likely to resonate with the recipients. How did you learn about the topic? What, if anything, would you change about that experience to make it more appropriate for an audience of non-experts?

While creating a sense of energy and excitement around topics will make them instantly more appealing, keeping things simple and to the point will also help. So-called micro-learning is another increasingly popular approach that CIOs should look to tap into, according to Norton. Bite-sized training sessions – as opposed to, say, a three-hour marathon on a Friday afternoon – allow for heightened focus and better knowledge retention.

“If your classes are too long, they'll tend to drag. People will zone out,” she warns.

From a teacher's perspective, Norton recommends analysing all of the material you want to share and working out how it can be divided into chunks, before “infusing

ONLINE LEARNING IN THE UK

Share of adults using online learning materials, by age group

27%

35-44

22%

45-54

17%

55-64

46%

16-24

24%

25-34

5%

65+

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Need for speed: accelerating the journey to operational excellence

Enabling people to work quickly, and orchestrating change at pace, is the key to achieving resilience and operational excellence. But existing processes are slow and costly

The CIO agenda has shifted significantly over the last couple of years as organisations have accelerated their embrace of hybrid working and the democratisation of technology and data. The fundamental, underpinning technology required to support the critical business drive for modernisation, not to mention cost efficiencies, is cloud computing. But the transition isn't easy.

The challenges involved in migrating hundreds or even thousands of workloads to the cloud are plentiful, and difficult to overcome in the traditional enterprise way of hiring a systems integrator and throwing lots of people and existing processes at the various obstacles. Companies must get smarter at executing change without delays, risk and spiralling budgets.

That is especially the case if they want to close the worrying resilience gap exposed amidst lockdowns and exacerbating cyber threats. It is now common for boards to question the CIO on what the damage to core business services would be if a data centre or cloud provider went down. Whatever their mix of infrastructure, CIOs need to be able to show they can recover services quickly after a disaster scenario. And that's before even proving they have the systems and capabilities in place to achieve the board's competitive desire for operational excellence.

The biggest challenge of all is that while businesses reap the rewards of hybrid working and data democratisation, these ways of working have also made it harder for CIOs to have visibility across a dispersed IT estate. And visibility is key to both resilience and operational excellence.

“We refer to it as the dark matter in the enterprise,” says Ky Nichol, CEO of Cutover,

the leader in work orchestration and observability. “A consequence of democratisation is people are doing a lot of things with customer critical data without the right processes and visibility. Meanwhile, there's this need to facilitate change quickly. You can't just get in some business analysts and consultants in a few months. The business might need something done in the next five hours.”

“Visibility is key to both resilience and operational excellence”

Cutover is the only platform that provides full organisational visibility into dynamic flows of work, bringing them out of the dark matter of the enterprise to enable teams to move quickly with confidence. The solution eliminates outdated approaches like static-spreadsheets and weekend calls so teams can accomplish the work quickly and effectively. This helps enterprises better plan, orchestrate and audit the human and automated activities that drive critical events, such as technology releases, resilience testing, operational readiness and major incident recovery.

The speed of the orchestration and enhanced visibility enables organisations to change, modernise and transform at

“If your classes are too long, they'll tend to drag. People will zone out”

each piece with as much creativity and fun as possible”. This approach enables bigger topics to be broken down into more digestible sub-topics, with each matched to a creative idea.

Remember that your colleagues are only human – which means that making a connection with them is crucial, she stresses.

“In all of my courses, you will always see me on your screen,” Norton says. “It's as though you and I are having a conversation, one on one.”

For more information, visit cutover.com

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RECRUITMENT

High on tech, low on talent

Recruiting and retaining IT professionals has never been harder. CIOs need to look beyond reward packages and understand what today's candidates really want from an employer

Nick Martindale

With the great resignation well under way and the IT sector already facing significant skills shortages, recruiting and retaining staff has, arguably, never been more important. CIOs must think more deeply than ever about how they can attract the talent required to deliver the IT infrastructure and innovation that will improve their firms' bottom lines.

Salary remains the most important element of any decision on which job to accept, confirms James Hallahan, director of Hays Technology in the UK and Ireland. According to its *Hays Salary & Recruiting Trends 2022* guide, 57% of tech professionals expect to move jobs this year. The top reason for doing so, cited by 34%, was to obtain better pay and benefits. Both figures are higher than the average for all UK employees.

But Hallahan warns that CIOs shouldn't make pay their focus in attracting applicants. IT professionals also want roles with clear potential for career development.

"Your employer value proposition is the key to retaining talent, with opportunities that promise a rewarding future in the organisation," he stresses.

Shivkumar Gopalan, CIO of software company Unit4, reports that the youngest candidates tend to have different expectations about career development from those of

be competitive and, possibly, increase after a certain length of service."

IT professionals expect to be allowed to work flexibly, including a degree of remote working. Harvey Nash's *Digital Leadership Report 2021* has found that two-thirds of CIOs expect most of their team members to work two to three days a week from home.

Robert Rutherford, CEO of QuoStar, who oversees the IT consultancy's recruitment, believes that it's important to give people the chance to work flexibly or to alter their package to fit their preferred working style. Because an employee's needs and focus can fluctuate throughout their career, employers must be willing to adapt and work around these changes, he says.

But Rutherford adds that not all employees will place a high value on flexibility, which is why it's worth targeting different groups with different strategies. "It can pay to focus on offering different compensation packages – and even to split-test recruitment advertising to appeal to candidates with varying preferences," he suggests.

Company culture is another area that comes under scrutiny. This is where IT teams have a chance to develop cutting-edge propositions that will appeal to their potential recruits. Helena Nimmo, CIO of Endava, says companies can harness IT to differentiate their offering. She cites Google as an example, highlighting how it recently adapted its office environment to meet the demands of a hybrid working model by incorporating collaboration spaces and inclusive meeting rooms.

"A priority for CIOs should be to think about how to create a virtual experience that mimics the physical," Nimmo says, suggesting methods such as "intuitive connectivity capabilities that bridge the gap between rapidly advancing technology and real-world applications".

The importance of culture extends to an employer's broader values too. Issues such as sustainability and responsible business are becoming a higher priority for the newest generation of IT professionals. Mark Mamone, group CIO of digital identity firm GBG, reports that he is "increasingly seeing this on an equal footing with the financial package" among candidates.

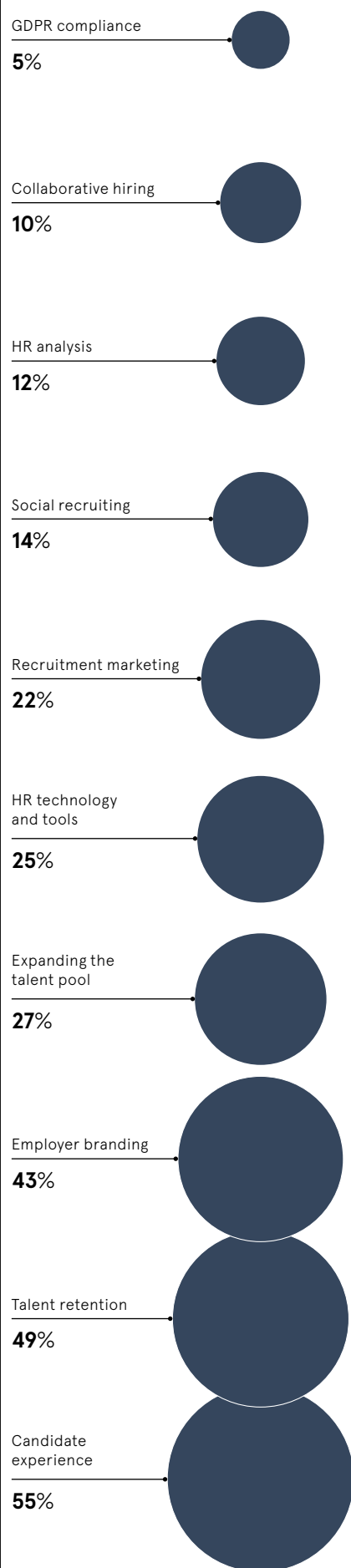
Mamone believes that CIOs need to think more about the wider world, what prospective employees care about and how the organisation can engage with them. Companies must establish robust policies on environmental and social issues, as well as sound corporate governance in areas such as diversity and inclusion, the green agenda and charitable giving. GBG gives employees time off to support local community projects, for instance.

Bennett suggests that CIOs should focus more of their efforts on keeping their existing team members, nurturing them and preparing them to assume more technical and/or senior roles within the company.

"They may lack certain skills, but these can often be taught," she says. "What they bring to the table is knowledge of the business and its clients, which should never be underestimated. The ability to demonstrate that the business tries to upskill its employees will also help to attract new people."

PERSONNEL'S PRIORITIES

Share of HR professionals citing areas they were planning to invest in / develop in 2021



CodinGame, 2021

Other options include targeting specific groups of candidates, such as returning parents and older workers, but such approaches are unlikely to be anything more than a stop-gap measure, according to Rutherford, who says: "While there has recently been another push to hire from these pools, there is not enough resource to fill the roles that CIOs are recruiting for."

The simple truth is that employers need to develop a well-considered strategy for attracting, developing and retaining people that will prove effective over the longer term and give them a competitive edge in the war for IT talent.

"This will probably take a few years to get up to speed," Rutherford warns. "It will entail approaches such as building internal academies or 'talent funnels' too, but all this will be necessary if companies are to achieve sustainable success." ●

“Your employer value proposition is the key to retaining talent, with opportunities that promise a rewarding future in the organisation”

their predecessors. "The generation entering the workforce now are digital natives, comfortable with all forms of technology," he says.

This means a career in IT is no longer just about developing specialist technical skills. Candidates want to develop a broader knowledge of how an enterprise works and of IT's role in driving a business forward.

"If CIOs want to attract these candidates, they must show that they can offer immersive experiences that enable employees to collaborate with a wide range of expert colleagues – drawn not only from IT, but from all parts of the business," Gopalan says.

The broader package is also important, notes Sarah Bennett, CIO of Mercator IT Solutions. "The basic salary needs to sit well in the market, but it needs to be topped up with a good pension, access to healthcare programmes and an all-encompassing benefit scheme, including subsidised gym membership, retail discounts and cinema tickets – all things that improve lifestyle," she says. "Holiday entitlement should also

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OPINION

'As the end of the Covid crisis approaches, many employees don't want to return to the office just to sit at a desk – they can do that at home'

The perception of IT has come a long way over the past two decades. It may have started with an image of nerds staring at their screens in the basement, but digital technology today is integral to the performance of every business function. The head of IT evolved from a service delivery manager to a multi-faceted strategic leader reflected in the CIO job title and, later, chief digital officer, chief innovation officer and chief transformation officer.

The CIO became the change agent in the C suite, combining technological expertise with project management know-how and organisational development skills. The modern CIO understands what true value looks like for their business and is able to communicate that vision through every layer of the organisation. They are responsible for building internal support and for implementing a digital culture across all business units.

The pandemic has solidified that role, but the widespread adoption of remote working has also disrupted internal lines of communication and company culture – and generally not in a good way. Offices have closed and the tools that have replaced them are task oriented. Remote working and rational workflows may suit many of us who work in IT, but the effective CIO needs to be connected with all dimensions of their enterprise.

With everyone working from home and office communication reduced to Zoom sessions, we have been missing out on essential social interactions – from chance watercooler conversations to the after-work drink with our colleagues. We have lost the venues where the informal discussions and

unplanned interactions took place, where new insights and ideas emerged and where careers were made. We need to reclaim and rebuild these so-called third places.

The concept of the third place – a communal space between work and home where people can meet on an equal footing – was introduced by urban sociologist Ray Oldenburg in his 1989 book *The Great Good Place*. Starbucks popularised the concept and it became an integral aspect of people's visions of the future of work. Web 2.0 startups dressed up their offices as third places, with the help of bean bags and ping-pong tables. Freelancers and consultants worked from their laptops at coffee shops. Management teams would meet at private clubs or hipster spots such as the Ace Hotel.

As the end of the Covid crisis approaches, many employees do not want to return to the office just to sit at a desk – they can do that at home. Organisations are trying to reimagine offices as spaces for collaborating, team-building and developing company culture, taking cues from third places such as coffee shops and hotels. Co-working spaces that were created in the Web 2.0 era had done the same, but some, like WeWork, crashed and burned before the pandemic. When Covid arrived, it put paid to many more venues. Ace Hotel's UK outpost in Shoreditch, east London, has not reopened since the first national lockdown forced it to close its doors in March 2020, for instance.

IT leaders need new locations for working with their teams, conversing with managers in the wider business and also networking with their peers.

CIOs all have similar challenges to tackle. As Alex Farr, CIO of Strictly Education, notes, he and his fellow IT leaders want to know "how we can grow our businesses and do more – faster – with less cost and risk to the business. Peer-to-peer communities mean that we can share real-world experiences with like-minded business leaders. This is invaluable."

Nicholas Woods, CIO at Manchester Airports Group, agrees. "Finding a community that you trust provides invaluable opportunities to share your experiences and exchange knowledge," he says.

"The power of a CIO network is key," adds Barbara Gottardi, former CIO at HSBC and Vanguard Europe. "We're all trying to solve very similar problems. Collaboration among peers ultimately helps the end customers."

Professionally networks, trade associations and conferences are filling the void to create new third places, complementing the redesigned offices and cool communal hangouts in the city. No matter where they manifest themselves, venues enabling conversation, community-building, professional development and continuous learning are vital for tech-driven innovation. ●



Andrew Pryor and Daniel Warburton Co-Founders, CIO Watercooler

SUSTAINABILITY

Hard drive: how tech chiefs can propel their companies to net zero

As UK businesses work towards the ambitious goals they've set themselves for carbon reduction, all functions will need to play their part – and the IT department is no exception

Emma Woollacott

Almost a third of British businesses have signed up to the United Nations' Race to Zero campaign, while all large companies registered in the UK are required to disclose their plans for achieving net-zero greenhouse gas emissions before next year.

Each firm will be expected to calculate its carbon footprint, establish long- and short-term reduction targets with a sound basis in science, allocate funds and monitor progress.

They must consider not only the operational emissions under their direct control (scopes one and two), but also the scope-three emissions that arise at each end of their value chains. Upstream scope-three emissions include those generated by suppliers. Downstream ones include those created by the consumption and disposal of its products by customers.

This is a huge change that will require strategic-level input from every member of the C suite – including the CIO.

"The CIO and their team play a crucial role in their company's carbon-reduction programme. This is especially true when that company, like ours, is a tech firm with a digital offering," says Roy Aston, group CIO at online payments provider Paysafe. "They can factor environmental considerations into their entire technology strategy, including ensuring that they are adopting a green approach with their IT infrastructure – how they build their tech, store data and recycle equipment. They have influence in so many areas."

One of the biggest environmental wins can come from shifting to a public cloud computing service. In a 2021 study commissioned by Amazon Web Services (AWS) – a major provider of cloud services – analysts at 451 Research reported that cloud servers are roughly three times more energy-efficient than the computing resources of the average European company. They also found that most businesses don't

“The CIO can ensure that environmental efforts remain front and centre in much of their company's decision-making

prioritise the sustainability of their data-centre infrastructure, including its associated energy costs.

"Switching to cloud computing reduces the electricity consumed by data centres by consolidating platforms and transferring more transactional systems to the provider," Aston says. "At Paysafe, we have moved about 70% of our workload into the

cloud and consolidated or decommissioned many of our old systems and data centres."

According to the 451 Research study, AWS's clients could potentially cut the greenhouse gas emissions of an average workload by up to 96% once the company meets its goal to be powered by 100% renewable energy, which it says it's set to do by 2025. Google has pledged to do the same before 2030, while Microsoft reckons that it will actually be carbon-negative by that time.

CIOs should also review how they work with their partners, advises Martin Riley, director of managed security services at Bridewell Consulting, a cybersecurity specialist that has been carbon-negative since October 2021.

"The right partner will show a commitment to being carbon-negative through offsetting and community-led renewable energy initiatives, enabling companies to balance out their own footprints," he says.

Establishing a sustainable supply chain means considering not only direct suppliers but every link beyond them, informing these players about best practice and providing them with sustainability training. And, says Arthur Hu, CIO of electronics manufacturer Lenovo, a code of conduct and clear targets need to be established from the start as part of a formal process.

"Make environmental, social and corporate governance considerations part of your procurement process – for example, updating your evaluation scorecards to include an ESG component," Hu advises.



51%

of digital leaders recognise that technology is crucial in reducing a firm's carbon footprint

22%

are reducing the carbon footprint of the technology itself

9%

say that their boards prioritise improving sustainability with technology

Harvey Nash Group, 2021

at Coutts, which achieved B Corp status last year. One of the advantages of seeking such certification, he says, is that the so-called B Impact Assessment tool (BIA) "gives us a clear idea of what we need to change, such as processes and frameworks, to enable us to become a more sustainable business. The output BIA scores then help us find a way to track our sustainable progress."

A global poll of CIOs by IBM late last year found that 42% of respondents expected technology to have a significant impact on sustainability over the next three years.

Hu notes that, given how technology is "embedded in almost every aspect of any organisation, the CIO can ensure that environmental efforts remain front and centre in much of their company's decision-making. We're often at the table when setting objectives and key performance indicators, so we can advocate for measuring the enterprise's climate impact as part of our performance metrics."

He adds: "The easiest wins are likely to come in areas that the CIO can control directly – internal decisions to prioritise greener technologies." ●

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How to remove network complexity for CIOs

With businesses now operating in a complex web of interdependencies with their digital supply chains, CIOs must find a way to manage their network infrastructure more efficiently

The pace of innovation is accelerating across industries as organisations race to optimise their processes and embrace new business models befitting of the digital age. On the hunt for greater agility, efficiency and speed to market, companies have gravitated to scalable technologies that help them thrive among an increasingly interconnected ecosystem of digital supply chains, partners and channels.

Automation is the most powerful means of making interdependencies more efficient – and the rise of the cloud has helped democratise access to its capabilities. In recent years, businesses have transformed how they consume infrastructure, software and platforms through an on-demand, web-based 'as-a-service' model underpinned by the cloud. Most businesses use dozens of software-as-a-service (SaaS) applications to run their business, while renting public cloud infrastructure from hyperscalers like Amazon and Microsoft.

Although these multi-cloud environments are bringing great benefits to businesses by connecting more things outside the control of their own environment, they are also adding complexity to the already interconnected ecosystem they operate within. A high-quality, agile and scalable network is the saviour, but traditional hub-and-spoke wide-area networks (WAN) are no longer fit for purpose. It is the turn of the network to embrace the cloud.

"The configuration and the structure of the enterprise network is changing," says Neil Templeton, vice-president of marketing at Console Connect. "Historically, organisations would periodically go out to a vendor with a request for proposal, implement a WAN service, have it for three or four years and then go back out for another vendor proposal to augment or change it. They were

stuck in a cycle of long contracts for fixed bandwidth and predictable traffic flows.

"Those days are gone now. It just doesn't work anymore because it doesn't suit the way businesses are operating. There's now a big push both from the enterprise, as well as from the supplier, to change the model."

“NaaS is the future of network infrastructure, enabling companies to embrace the pace of innovation in the years ahead

Just as other parts of the IT estate have embraced the as-a-service model, CIOs are now saying goodbye to inflexible networks, which are difficult to reconfigure and tied into long contracts. They are instead consuming a more efficient and agile network-as-a-service (NaaS) offering.

Leading the charge in offering this new generation of services is Console Connect, which offers a tier-one network with a fibre backbone supporting a leading global MPLS that has underpinned large enterprise networks for more than a decade. Having automated that network, Console Connect now makes it available in a simple and flexible point-and-click NaaS environment that businesses can purchase, configure,

provision and connect to through a web-based portal or API in a matter of minutes.

"The enterprise doesn't have to suffer the complexity of having to set up, configure and manage all of those interconnections, they can just plug into our network, spin up an application and get it to market very quickly. It rapidly accelerates time to market," says Templeton.

"We've already connected every major cloud provider, many SaaS providers, and lots of businesses and partners around the world. It's a vast, growing ecosystem and the automation and pay-as-you-use model drives significant cost reductions and efficiencies.

"Businesses only pay for what they use and can flex their connections up and down on-demand. Crucially, however, this is delivered over a high-quality private network. We're not talking about connecting clouds and applications over the public internet, which is great for some basic applications but you have no control over traffic routing, speed and efficiency.

"To connect the critical business cloud-based applications businesses now rely on, companies need the SLA assurances that only a high-performance private network can deliver. NaaS is the future of network infrastructure, enabling companies to embrace the pace of innovation in the years ahead."

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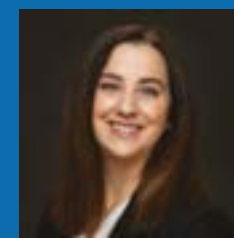
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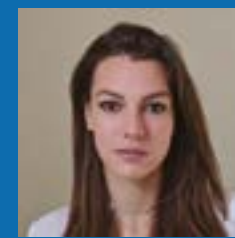
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INTERVIEW

‘There will be a time when the CIO is no longer needed’

Three UK’s **Belinda Finch** shares her principles for a successful digital transformation – and explains why the no-code movement could make the IT chief’s role as we know it redundant

Sam Forsdick

When she joined Three UK to lead its IT transformation programme, Belinda Finch was acutely aware of the scale of the challenge awaiting her. Work on the project had started before her appointment as CIO in September 2021, but members of the 130-strong IT function she

was taking on were still scattered across the business and working in silos.

“The digital team would be in one location and data reporting would be somewhere else,” Finch recalls. “The programme was split and we had IT delivery and IT operations working independently, so my main focus when I started was to create a proper end-to-end team.”

She swiftly brought the company’s IT professionals together as the newly renamed CIO team. “Previously, we’d had very different systems and processes. We were even using different suppliers across departments that were literally doing the same thing,” says Finch, who was previously CIO at Centrica. “We need to be working the same way, because we’re all doing IT. It doesn’t matter whether it’s digital or data.”

But the IT department wasn’t the only fragmented and isolated function. Three’s

digital transformation programme was being run by another team that was operating in seclusion on a separate floor of Three’s head office. Finch, who had already led the digital transformation of rival telco Vodafone, knew that the whole organisation would have to get involved to ensure that the programme would deliver maximum value.

One of Finch’s initial challenges was to recruit senior managers to her team while the company’s Covid-driven remote working policy was still in place. Interviewing people on a video link made it harder for her to “pick up on the vibe” of candidates. But, having since met all of her new recruits in person and seen how well they have acclimatised to the company’s culture, she has changed her view of remote hiring.

“It made the recruitment process faster and meant that I was able to bring my team

together more quickly than I would otherwise have done,” Finch says.

When companies decide to implement new IT infrastructure, the business case can often be an afterthought – a “classic mistake”, she says. “To transform the organisation, and for people to want to use the new systems and understand what we were trying to deliver, we needed to change the focus of this project and ensure that it would be a business-led initiative. The IT team can often get preoccupied with all the technical aspects, whereas a business-focused transformation is more concerned about the results that will be achieved.”

Having sought contributions from all functions of the organisation, she noticed an immediate change. Senior executives in departments ranging from finance and HR to sales and marketing participated in the transformation programme, making it the broader collaborative effort that she had been seeking.

“My whole strategy is to devolve as much control to the rest of the business as I possibly can. When everyone concerned in the project is a decision-maker, it’s much easier for me than trying to force change on an organisation,” Finch says. “For instance, involving a representative from the finance team, who can explain their requirements and push back if a feature isn’t needed, is far better than IT saying ‘computer says no.’”

The business-led approach requires the CIO to understand how the changes they’re proposing will improve processes across the company and enhance the customer experience. To this end, Three has gathered

consumer feedback via focus groups and surveys to inform the project’s managers.

“This means you’ll end up with something much more well-rounded, rather than installing a new ‘best of breed’ system just because Gartner has decided to include it in its *Magic Quadrant* reports,” Finch says.

The project has recently passed the half-way mark. She reports that it’s “shaping up well” now that the goals of the whole organisation are properly aligned. While Three’s main focus is on completing the transformation and settling into its new HQ in Reading, part of the company’s longer-term strategy is to make the digital team a more commercially led department.

Finch is a proponent of low- and no-code application development (see panel, below). This enables people with little or no programming knowledge to create and modify enterprise applications through more intuitive platforms. Although it’s not part of the current phase of the transformation, it is something that she’s aiming to implement at Three in due course.

Seeing no reason to keep tasks such as web development and application updates under IT’s jurisdiction, she says: “There are some things that you want to keep within your team’s control, of course, but there is a lot of stuff that doesn’t have to be handled by IT every time. Everyone is tech-savvy these days, so they can solve their own problems. The technology is not like it used to be 20 years ago, where you needed to be a deep Cobol programmer if you wanted to do anything. Most of us can learn how to use it these days, so it’s very old-fashioned to keep everything under IT’s control.”

Finch recognises that this change could have dramatic consequences for IT departments and could even put her out of a job. She foresees “a time, 10 or 15 years from now, where the CIO is no longer needed. Companies will employ multiskilled teams with enough IT knowledge to solve most of their own problems and launch their own products. IT departments will be much smaller. Their main focus will be on maintaining the systems.”

So where would this scenario leave the CIO? The job could go in one of two directions, according to Finch. Those with a commercial mindset will go on to lead the

Belinda Finch’s career path at a glance

1998-2004
Consultant at KPMG. She worked on projects for the Bank of England, fixing various technical problems associated with the millennium bug.

2004-11
Senior manager at Accenture.

2011-19
Head of transformation and online at Vodafone.

2019-20
CIO (group functions) and chief of staff at Centrica. She also chaired the company’s women’s network, serving as an advocate for female employees across the business.

2020-
CIO at Three UK, where she is overseeing the firm’s IT transformation.

multidisciplinary teams that she describes. To succeed in such a role, they will need to possess both commercial acumen and technical ability. Those lacking in the former will remain focused on technical aspects such as ensuring the stability of their company’s digital infrastructure.

“There are certain elements of the role that will always require a data science degree to really understand it, especially with the emergence of technologies such as artificial intelligence and quantum computing. These are never going to be handed over,” Finch says. “But tasks such as launching a product on a website can be handled by tech-savvy people in the commercial team. That shouldn’t require IT’s involvement.”

Although her vision for IT departments remains a distant prospect, tech teams will need to become increasingly comfortable with relinquishing control and managing the associated risks.

“A whole rulebook will need to be written to allow that to happen,” Finch says. Perhaps she will be the one to write it. ●

“There are certain elements of the role that will always require a data science degree to really understand it

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Q&A

The role of IT in the future of work

The democratisation of IT enables great agility but also brings new threats, says **Sridhar Iyengar**, managing director at Zoho/ManageEngine Europe



Q What role has technology played in transforming workforce models?

A Technology adoption has been rampant, especially in the last two years. What was optional before 2020 has now become a way of life. Everything is just a click away and remote work is not going anywhere. We’re already seeing companies embrace that as part of a hybrid model post-pandemic. From an enterprise perspective, IT teams are not working behind the scenes any more – they are now the front-runners of organisational functions. From cloud adoption to remote collaboration, AI to machine learning, the democratisation of IT will shape the future of work. By democratisation, we mean the ever increasing ease of access to technology and services. What matters now is how you unify services across business functions, automate and integrate workflows, and, most importantly, democratise data without compromising security.

Q Expanding on your last point, how has IT democratisation impacted cybersecurity?

A Cyber threats have been going up for some time, but they accelerated throughout the pandemic during which time some 83% of organisations in the UK reported more attacks, our research found. Simply put, with more democratisation comes more attacks and data breaches. It’s very difficult to make technology and data more accessible to employees without also making it more accessible to everyone else, including cybercriminals. However, there are numerous things you can do to reduce the attack surface without

compromising on user experience. They include controlling access from managed and unmanaged devices, monitoring behaviour anomalies to reduce insider attacks, enabling single sign-on, implementing multi-factor authentication and minimising user privileges and network access. Companies have to take a balanced approach. However, identifying and investing in the right technology is still a major challenge, as is remaining compliant with standards and regulations like ISO and GDPR.

Q How is ManageEngine helping companies work in both an agile and secure way?

A The most successful companies are working towards an agile IT infrastructure, where the aim is to achieve seamless service delivery with frictionless security. Integration of machine learning algorithms and AI in cybersecurity applications will also improve real-time threat detection and automated incident response. A hybrid IT approach to monitoring and management requires visibility over the IT stack including ready-made, custom and software-as-a-service applications, as well as beyond the firewall. ManageEngine’s IT operations management (ITOM) suite helps organisations gain visibility across the IT estate including network, databases, applications and storage devices. Using our hybrid tools, companies streamline workplace services, automate tasks and increase flexibility, improving employee collaboration and productivity.

Being 100% safe is a myth, but organisations can do a lot to minimise the attack vector. Deploy device security policies, implement good identity and privilege

access management solutions, and have a proactive incident response system in place. People are also incredibly important so it’s essential to train your teams. We are a big advocate in adopting a zero trust approach which protects users, devices and resources from threats and attacks, irrespective of the location. ManageEngine helps companies implement a zero trust model across the entire product stack.

Q What is the future of work from an IT perspective?

A The future of work is all about being multifunctional. It’s self organising, highly transformational and digitally dexterous. Businesses have to keep up to remain relevant. Complications in future hybrid work scenarios range from employee motivation, innovation and interactions, to ensuring security and regulatory compliance. Organisations will ultimately have to upgrade policies, procedures, processors and technologies to overcome these challenges to thrive in the future. ManageEngine helps achieve exactly that, allowing enterprises to democratise IT without compromising on security, monitoring, employee interaction and personalised experiences. We unify services across business functions and build an identity-based security framework for remote work. We will continue to strive for agility in our solutions in this rapidly changing world.

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“When everyone concerned in the project is a decision-maker, it’s much easier for me than trying to force change on an organisation

Bringing coding to the masses

Chris Wanstrath, the co-founder and former CEO of GitHub, once declared that “the future of coding is no coding at all” – and his prediction is already becoming a reality. A number of new platforms are offering people with little to no development experience the ability to design, build and launch applications, without the need for a crash course in coding.

These no-code and low-code applications are growing in popularity, as businesses seek to empower more of their workforce to undertake tasks that would traditionally have been left to a development team. Gartner has predicted that 65% of application development activity will be low code by 2024.

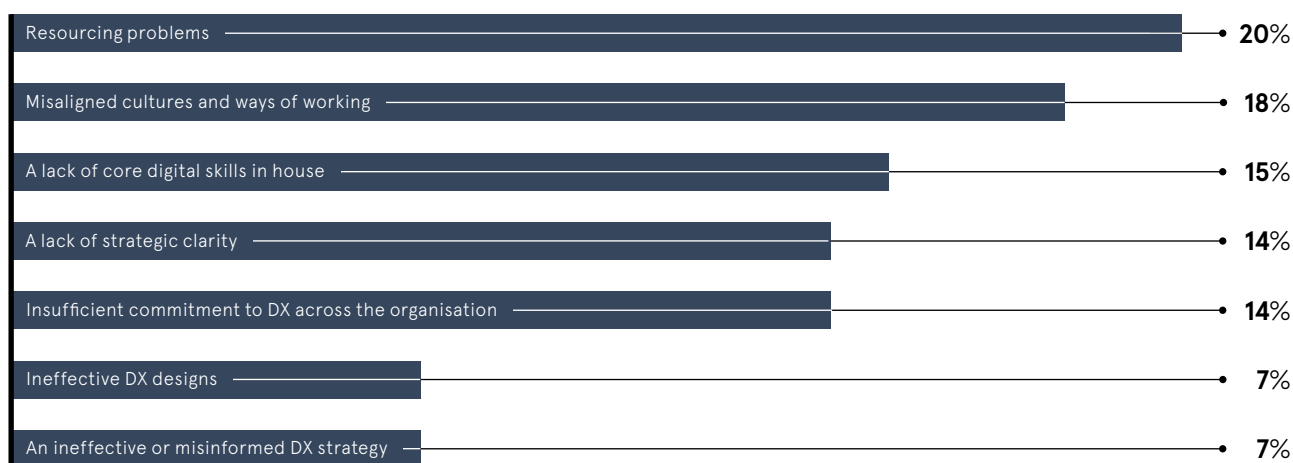
The solutions remove much of the challenge of app creation by making the process more visual, often through drag-and-drop interfaces. Low-code and no-code applications can be used to design websites, to create programmes for processing customer transactions or even to build simple automation processes and machine-learning models.

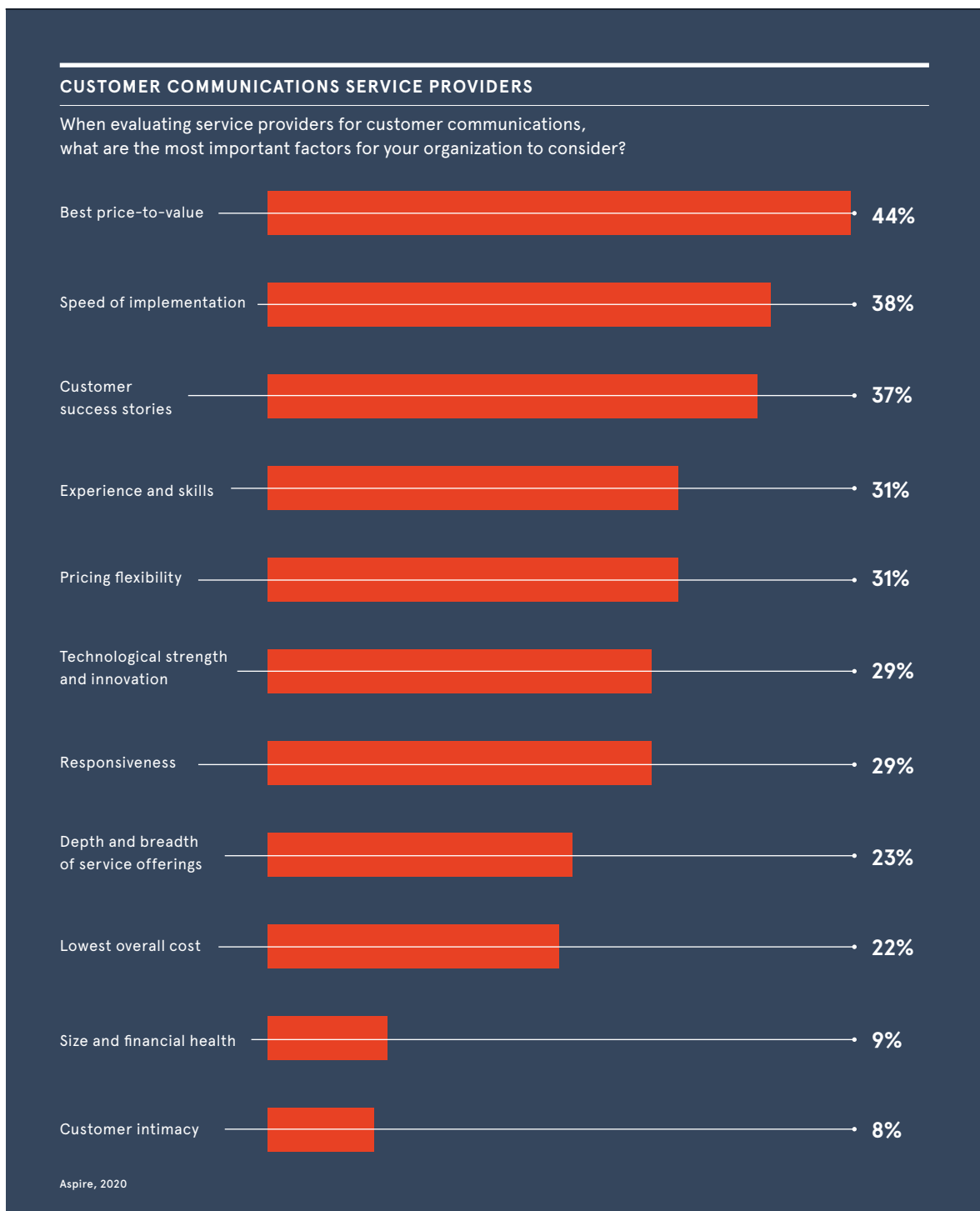
By democratising the creation aspects, businesses can develop apps that more closely fit their requirements and get them to market more quickly and cost-effectively. But, rather than replacing developers entirely, the movement promises to free them up to work on more challenging projects.

WHY DO TRANSFORMATION EFFORTS STALL?

Share of global companies citing factors that hindered their digital transformation (DX) programmes

McKinsey, 2020





Managing customer communications excellence

Why cloud-based hosted management is the way forward

In today's digital-first environment, CIOs are facing challenges from all sides. Under pressure to help their organisations deliver market-leading customer experience (CX), their businesses are nevertheless struggling to bring together disparate data sources, having to work with out-dated tech stacks and operating in the face of reduced staff and budgets.

Despite research from Precisely and Corinium Intelligence finding that 60% of executives cite the need to invest in data integration, integrity or enrichment technologies as a priority in 2021, businesses are not moving the needle on CX as much as they think. Research from analyst firm Aspire has shown that while 80% of companies believe they offer superior CX, only 8% of customers would agree. Considering that the same research found one in eight (15%) consumers would switch providers because of poor CX, businesses need to act more decisively than they do now.

That's not to say executives are entirely unaware of the challenges in front of them – and they certainly have an appetite for change. One executive quoted in a recent McKinsey report stated: "I'm more concerned about not being bold enough than being too cautious."

However, the Precisely research also reveals that nearly half of executives find building company-wide support for CX investments very challenging, even when leadership know it is a priority. Boston Consulting Group found that 70% of digital transformation projects fall short of their goals, even when leadership is aligned.

Where in-house customer communication management falls short So, if the desire is there, and the need is clear and the support unequivocal – where is it all going wrong?

"Customer communications is at the heart of delivering exceptional customer and digital experiences, but many organisations have been attempting to build and manage their own solutions which has placed a great burden on capabilities and resources," says Greg Van den Heuvel, executive vice-president and general manager at Precisely.

"Nearly three-quarters of organisations that start a legacy system modernisation project don't finish it because they lack the ability to plan comprehensively or deal with the complexity of the project on their own. Whether it's down to staff not getting on board with new systems, not upskilling enough people internally to manage the technology or a lack of understanding of exactly what tech will be most instrumental in moving the business forward, it's clear companies need help in realising their bold ambitions."

Certain innovations are coming together to help CIOs meet their businesses' CX demands, in particular the ability to build on tech stacks via APIs and a much greater use of the cloud. Infoworld calls it a "career killer to not leverage cloud computing", citing research that most CIOs have at least 20% of their applications and data moved to the cloud, with 10% to 15% scheduled to move in the next year or so, as of December 2021.

One of the key advantages of plugging into cloud-based solutions, compared to on-premise alternatives, is the ability to partner more closely with the vendor and enjoy the benefits of a hosted managed services offering. This sector is growing as a whole, and in customer communications management (CCM), it's increasingly the norm.

“A single platform like Precisely's EngageOne RapidCX ensures compliance and governance, as well as the implementation and expertise to operate on the client's behalf

"Our recent research found that 65% of the executives we spoke to are investing in new CCM technologies to improve CX. Of those, 45% are reviewing their approach to outsourcing and this is even higher in the highly regulated and communications-critical financial services sector, with 54% saying they're reviewing their outsourcing arrangements following Covid-19," Van den Heuvel explains.

Why leading companies are moving to hosted, managed solutions This move to the cloud with subscription-based, hosted managed services is not altogether surprising. While bringing CCM in-house may give the illusion of control, the issues mentioned above mean that it often risks becoming yet another unfinished, unsatisfying – and expensive – white elephant. In fact, businesses consider excessive overheads to be the greatest inhibitor to better communications and it can take nearly a year for stakeholders working with an in-house model to make even simple

changes. It typically takes up to two years to fight through a major version upgrade.

Some of the companies that have attempted it report a lack of a coherent, centralised approach to CCM. A third of executives surveyed by Aspire state that a lack of coordination between internal teams becomes the biggest obstacle to communications transformation. A further quarter cited unclear ownership of communications and inaccurate or conflicting customer data as their biggest hurdles.

"In fact, 43% of businesses expect to shift to subscription CCM by 2022," says Van den Heuvel. "A single platform like Precisely's EngageOne RapidCX ensures compliance and governance, as well as the implementation and expertise to operate on the client's behalf, saving them time and money."

Precisely can already point to a number of successful roll-outs, particularly in the tightly regulated and complex financial services industries. One financial, retirement, investment and insurance company was operating among a tangle of communications siloes and solutions. It had to deal with multiple print vendors increasing fulfilment costs, a lack of consistency, no single source of information for call centre agents and a wide range of composition tools and vendors, all of which was ultimately undermining its digital presence.

By moving its output to a single print vendor, creating enterprise-wide communication design standards and allowing non-IT resources to make changes quickly, the company transformed the internal experience of its 800 call centre operatives and 75 back-office users in as few as 11 months. By using EngageOne RapidCX's hosted managed CCM, the company now manages 10,000 templates across five call centres, five print sites and 13 million customers, all while making an annual saving of \$11.6m.

"Naturally, companies are concerned about security and compliance as well as being able to use new technologies effectively," Van den Heuvel concludes. "But with a hosted managed CCM solution like EngageOne RapidCX, we extensively workshop with staff and the CIO/CTO teams to make sure that everything isn't just comprehensively migrated to the new system, but that the organisation can make the most of its broad and effective range of CCM solutions."

For more information, visit precisely.com/engage



EMPLOYEE EXPERIENCE

Spread a little happiness

There's a demonstrable connection between employee engagement and customer satisfaction. CIOs can harness technology to make profitable links between EX and CX for their companies

Megan Tatum

You'd be hard pressed to find a CIO who wouldn't agree that improving the customer experience (CX) is integral to their role. From creating AI-driven virtual assistants that augment customer-care teams to replacing legacy tech when it's no longer serving the needs of users, CIOs work hard to ensure that omnichannel platforms work smoothly for consumers. But what about the employee experience (EX)?

According to pre-pandemic research by Salesforce, a significant proportion of CIOs didn't have EX on their to-do lists. Only 52% of IT leaders said that they prioritised it, while only 22% had a defined EX strategy. Those percentages are likely to have risen during the Covid crisis, but it is clear that, while virtually all CIOs recognise the significant impact that technology has on customer engagement, far fewer have joined the dots when it comes to its effects on employees.

That's an oversight, according to Colleen Berube, CIO at Zendesk. "There is a direct line between happy, engaged employees and satisfied customers," she says.

For instance, a study by Forrester and SAP Concur (also before the Covid crisis) revealed that companies with the most engaged employees enjoyed 81% higher customer satisfaction than average and experienced half the employee turnover – a

combination that represents a significant competitive edge.

"In the Covid era, there's another important reason to focus on EX," Berube says. "Businesses are operating in an incredibly high-demand labour market, so they need

“CIOs who equip themselves with people analytics or insights are in a unique position to drive business transformations

every advantage to attract and retain employees in a sustainable way."

In both respects, CIOs can make a key contribution, she adds. "They can have a meaningful impact, as technology factors are strong predictors of employee engagement. Their role is no longer simply about running the company's technology. Now

it's about guiding and governing choices; defining architecture and solutions; and developing the right services to connect employees, so that they can better serve their customers. This is the true end goal."

There are many ways in which CIOs can enhance EX. The wholesale migration to hybrid working, for instance, has seen firms adopting an abundance of technologies to support remote workers. There has also been a wave of digital wellbeing platforms that claim to support EX online while providing feedback on people's mental health to management teams. And then there's the changing role of HR, in which AI-powered chatbots help personnel teams to handle basic requests from employees. All of these technologies fall under the CIO's remit.

Perhaps the most overlooked way in which CIOs can bolster EX is to focus on the impressions created each time an employee engages with an internal system – a digital trail sometimes referred to as the DEX (digital employee experience).

CIOs can discern much about the mood of the workforce by analysing the DEX. They can learn of employees' frustrations with clunky tech and gauge their productivity by analysing people's output and the time they spend on digital distractions such as social media.

"An employee's digital footprint can provide an IT team with great insights into how to improve its EX strategy," observes Helena Nimmo, CIO at Endava. "Mapping employees' technology touchpoints and journeys throughout the system, measuring the time they spend on certain tasks and localising journey interruptions can all help to improve their experience and alleviate their frustrations."

She continues: "The key is to ensure that such data collection doesn't cross into surveillance territory and that it actually benefits employees. For this to happen, the wider leadership team needs to be involved to understand what the company wants to achieve and how an improved EX strategy can help. Being transparent about data collection, running smaller tests and anonymising data will be more beneficial than going big and collecting everything. This will create a more compelling EX strategy that will attract the right talent and, ultimately, improve staff satisfaction and retention."

CIOs can even go further by implementing tech aimed at measuring EX more effectively and creating new channels through which to view digital footprints.

Robert Ordever is managing director of OC Tanner Europe, a specialist provider of employee recognition programmes. He cites the example of one company whose annual staff survey found that female employees felt less appreciated than their male counterparts. There was nothing the firm could see in its data that highlighted any variance in how the contributions of men and women were acknowledged.

"Using advanced technology to analyse this data more closely, the company found a difference in the words that employees used to recognise each other's performance," he says. "It turned out that male employees were receiving recognition with stronger positive statements at a higher magnitude than female employees."

The firm then went one step further by blending data from its staff survey, recognition programme and performance management system.

"An analysis of this data revealed that female employees received less than fair performance reviews and were more likely to feel disconnected from the organisation," Ordever says. "This insight informed targeted training for leaders that was cost-effective, manageable and impactful in addressing the root causes of disengagement and feelings of exclusion."

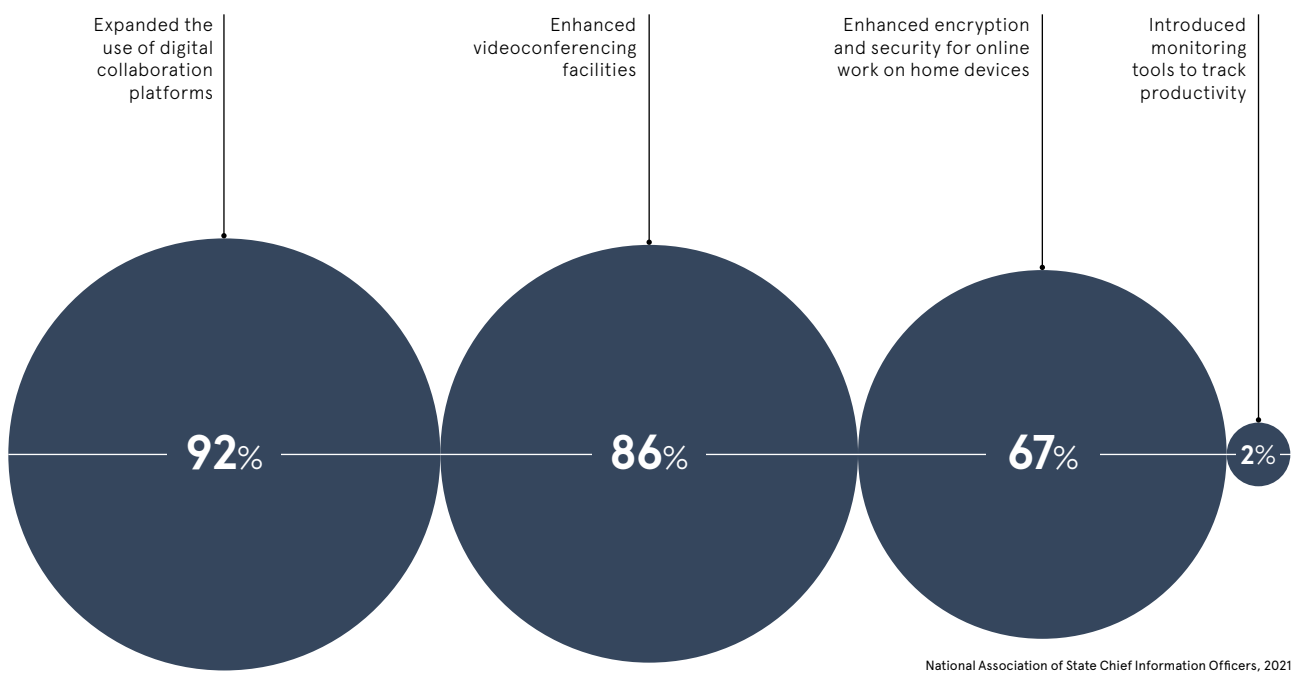
The bottom line is that more CIOs need to recognise the significant role that technology plays in employee engagement and how it can be used to underpin a winning EX strategy.

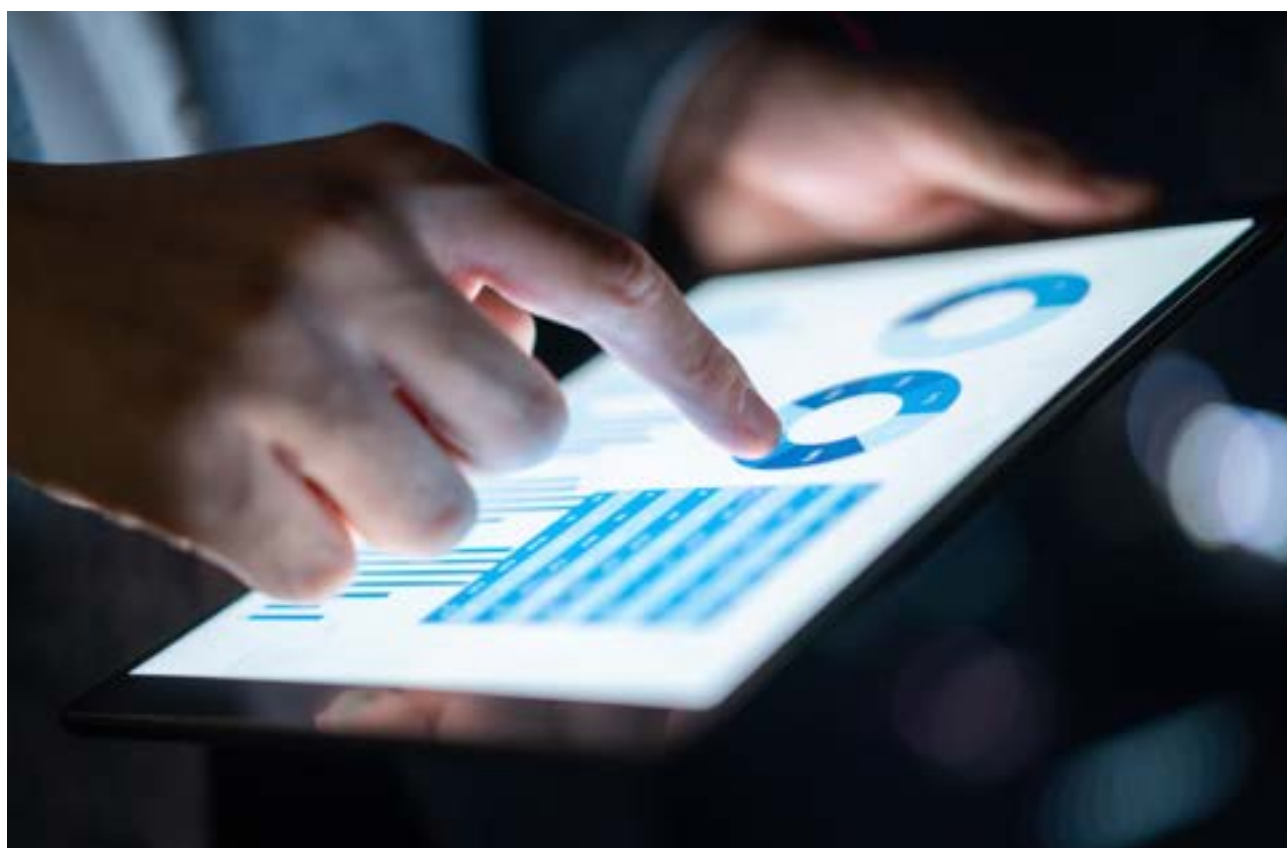
Pierre Lindmark is the founder and CEO of Winningtemp, which has created an AI-powered EX platform that gives employers an up-to-the-minute view of how their people are faring. He observes that, as long as "digital innovations continue disrupting business models and cultures, CIOs need to work more closely with HR teams to ensure their successful implementation. CIOs who equip themselves with people analytics or insights are in a unique position to drive business transformations, as they can show hard data to support EX strategies."

It's no longer a question of whether EX should be on every CIO's to-do list. It's a question of why it isn't near the top. ●

HOW TECHNOLOGY IS SHAPING THE EMPLOYEE EXPERIENCE

Share of CIOs citing significant tech interventions relating to remote working during the pandemic





TECHNOLOGY

Competitive edge: solving the 'wait and see' of latency

Web 4.0 businesses will, in theory, offer highly immersive customer experiences. The high-speed processing demands of providing these will oblige many to transcend the cloud and adopt edge computing

Ouida Taaffe

Web 2.0 brought us user-generated content and interactivity – think Twitter, Facebook, Slack and Zoom. It enabled online startup Dollar Shave Club to build global recognition in 2012 with a YouTube video that cost a mere \$4,500 (£3,300) to produce. The company rattled the previously bomb-proof incumbents in its market to such an extent that Unilever reportedly paid \$1bn to acquire it four years later.

Web 3.0 has brought us even more disruption, in the shape of technologies such as blockchain, big data and machine learning. Companies are understandably keen, therefore, to get ahead of Web 4.0. Definitions of it vary, but this iteration promises immersive and highly personalised online services, blurring the physical and the digital.

What will that look like? The metaverse is both the biggest Web 4.0 promise and the biggest threat. It's a threat to incumbents such as Facebook (now Meta), largely because of its decentralised nature. It's a promise to startups because they may be able to harness the tech in ways that could give them a competitive advantage.

All sectors are keen to get on the front foot. Microsoft recently spent \$68.7bn on video game company Activision Blizzard. JPMorgan, meanwhile, has created its own metaverse lounge – in which visitors are greeted by, of all things, a virtual tiger.

A less headline-grabbing matter is what CIOs need to do to make such technology work well.

Companies that offer augmented reality (AR) and virtual reality (VR) in the metaverse will almost certainly have to reconfigure their computing power for the experiences to feel properly immersive. Centralised cloud computing provision, however punchy, won't be enough. The reason for that is latency – the time lag on the network.

Swedish telco Ericsson has pointed out that time-critical video games, such as first-person shooters, need no worse than 30 millisecond end-to-end network latency to ensure a high-quality experience. The further away the data centre is from the end device, the greater the latency. Even on the fastest fibre links, there is a latency of 5 microseconds (0.005 milliseconds) for every 1km of cable travelled by the data, according to research by Infinera.

That is why serious gamers use expensive hardware that can do the processing then and there. The problem for companies is that consumers are unlikely to want to spend much on special hardware to access metaverse services. What to do?

Edge computing, where the processing muscle is placed closer to the data being crunched, is the next step from the cloud.

"People have been talking about the edge for two decades, but it has been limited to niche use cases," says Ishu Verma, emerging technology evangelist at Red Hat, a provider of open-source enterprise software. "Now the idea of placing computing and storage closer to the data sources is being adopted more widely across industry and consumer applications."

One important reason for this is that data systems have become much more capable, cost-effective and energy-efficient, so deploying them at the edge on a large scale is far more feasible than it was.

"In the cloud, you scale up capacity. At the edge, you scale it out to millions of

sites," says Verma, who adds that there is demand across all sectors that need low-latency services or simply want to avoid batch processing.

Some industries are already far ahead of the pack. Manufacturing companies, for example, use edge computing to construct digital twins – intelligent virtual replicas of physical infrastructure.

Rolls-Royce, for instance, can offer its clients a virtual aircraft engine in flight that responds as the physical machine does. The sensors on the engine send back data via a satellite link, although most information is collected after the plane has landed. Machine-learning models inform the digital twin and, by extension, the end goal, which is better physical engine design and maintenance.

Rolls-Royce's chief information and digital officer, Stuart Hughes, says that this simulation facility is important to the company, because some of the things it does are "really on the edge of physics". Having a virtual replica of an engine enables the testers to put it through many more scenarios than they could do physically.

The firm's longer-term aim is to have an engine that is "increasingly connected,

“In the cloud, you scale up capacity. At the edge, you scale it out to millions of sites”

contextually aware and comprehending", Hughes says.

As things stand, most firms have their main computing capacity in the cloud, although there are everyday instances of edge computing. Each ATM is a tiny data centre, for instance. And the user interface on Amazon's voice-activated virtual assistant, Alexa, doesn't rely on round-tripping every piece of data to the cloud. Some of it is analysed on the machine.

The offerings provided by Amazon Web Services (AWS) are a continuum – all the way down to the internet-of-things sensors on the users' premises. So says AWS's director of product development, George Elissaios, who adds: "Edge computing is cloud computing."

Organisations that aren't cloud hyper-scalers tend to still make a clear distinction between the cloud and the edge. The rule of thumb is that the cloud offers economies of scale, more control of processing and greater computing capacity.

"Training and developing machine-learning models happens in the cloud while inferring with real-time data happens at the edge," Verma explains.

Companies also have more than latency to consider when they look at the edge. Data sovereignty, for instance, is a thorny issue. As Meta is finding in the EU, some jurisdictions don't like to see data being moved to servers beyond their borders.

Security is another key consideration. "The approach to take is 'trust nobody',"

Verma advises. "Any data from a remote device is suspect."

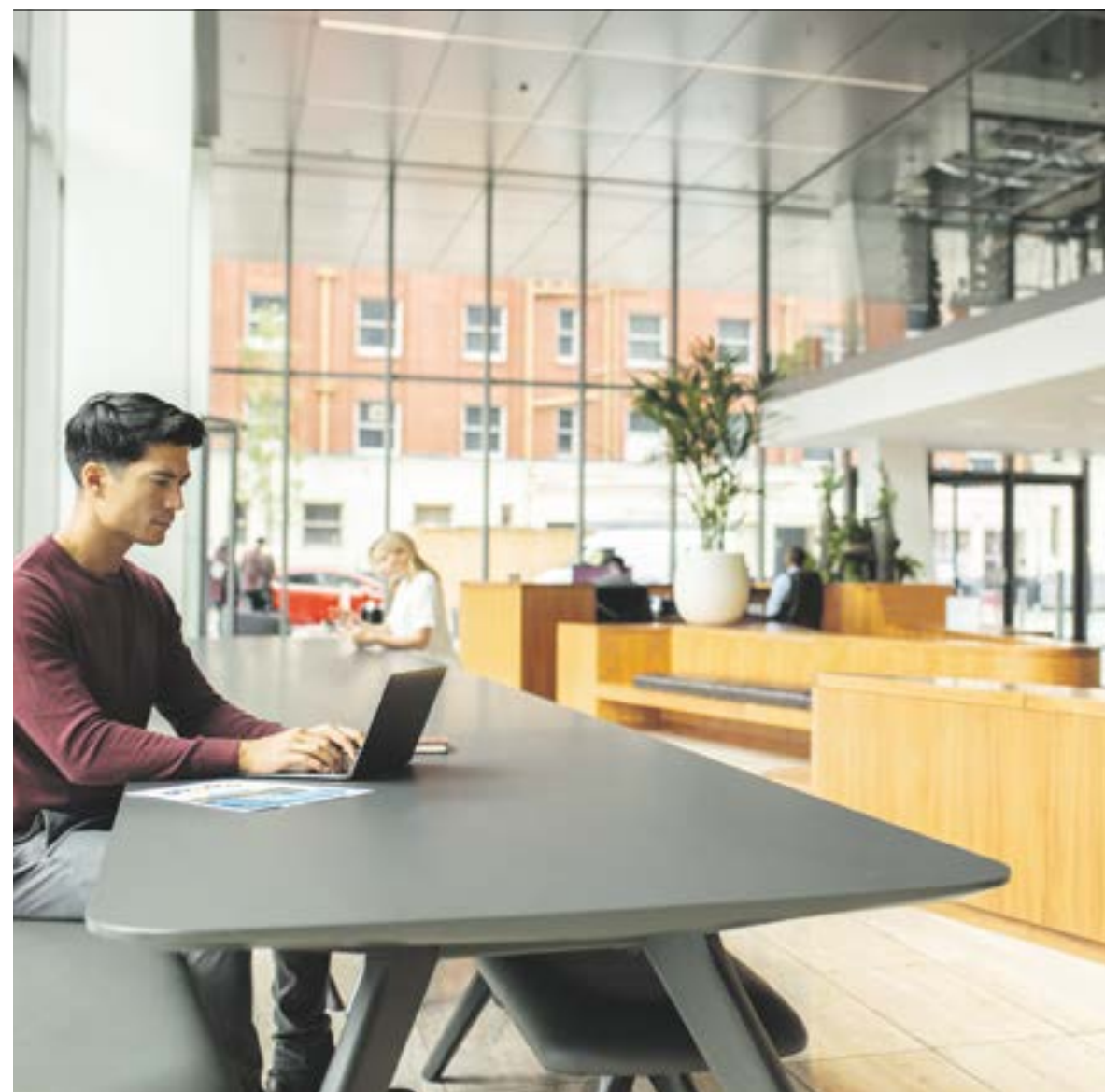
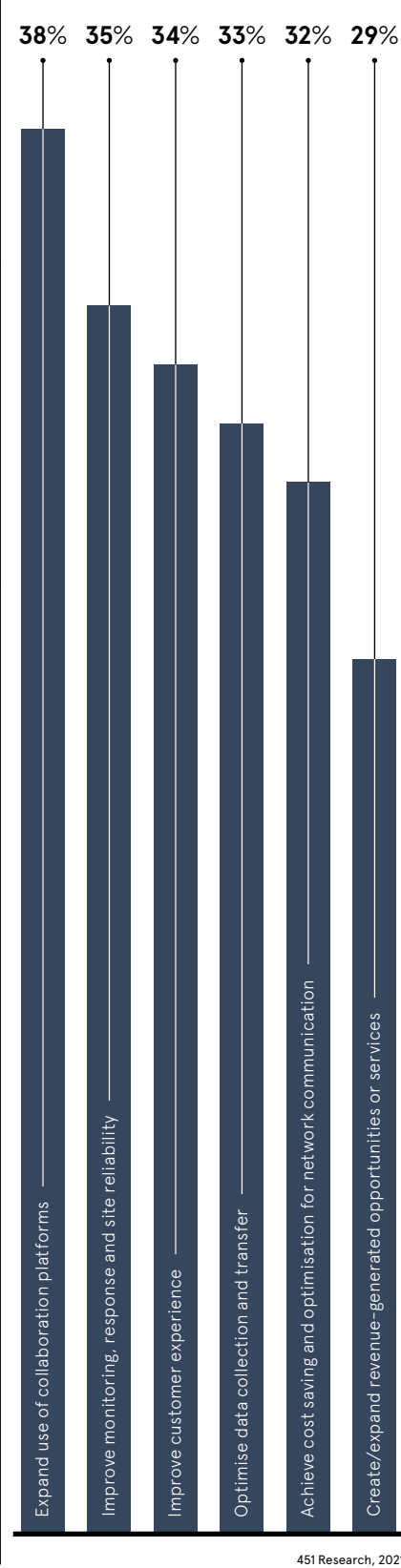
That is partly because remote devices can easily be tampered with – unlike those on the cloud or on the premises.

Will edge use displace cloud use? The consensus among experts is that it won't.

"I don't think the edge competes with the cloud," says Matt George, director of segment marketing and enterprise transformation for Equinix in EMEA. "As you move along the path [towards more real-time services], what you want is the most agile and flexible IT set-up you can have." ●

MOVING TO THE EDGE

Share of CIOs citing key benefits they expected to gain from their edge computing strategies



Making a success of hybrid working

CIOs are key to ensuring the success of hybrid working strategies, says Phil Jones MBE, managing director of Brother UK

Without technology and IT departments, it would have been impossible for many businesses – including Brother – to function properly during the pandemic. Collaboration tools like Teams and Zoom kept us connected and allowed companies to not only continue communicating, but to continue trading. In some cases, efficiency actually improved. And many employees appreciated the chance to create a better work-life balance.

Because of these discovered benefits, firms are increasingly shifting to long-term hybrid working. But what does this mean for CIOs and their teams? And how can they ensure that their company's IT equipment is fit for purpose across a distributed workforce? I have a lot of experience of this, having recently been the chief architect of Brother UK's own hybrid policy and office redesign.

First and foremost, CIOs need to know exactly what tools and equipment people require to perform well both in the office and away from it, and then deliver a seamless experience across the organisation regardless of location. That's already been a priority for many IT departments for years with senior white-collar workers already working on the move. But the rapid scaling of the number of people working remotely has put pressure on systems such as VPNs, for example, where capacity levels quickly become stretched.

Staying secure

Security is a key concern for us all in this new world of hybrid working. Employees are increasingly using their own devices, both at home and in the office, which need to be properly protected from the overwhelming number of hostile attacks now facing networks.

All the new equipment that has been purchased to support home and hybrid working has expanded the attack layer available to cybercriminals. Keeping track of the shadow solutions people are using in the home environment is key and IT teams must remain vigilant in the face of this increased threat. Keeping policies up to date and continual education is key, it seems easier to justify shortcuts at home, something to be acutely aware of.

Thinking about the entire information management environment, this vigilance should also extend to printed documents. What print authorisations do users have when working from home? What if a sensitive document printed in a home office accidentally finds its way onto a network printer as someone forgets to change the driver settings?

What happens to paper-based sensitive information in home environments? These are questions that we must be able to answer now that decentralised printing is the norm. Furthermore, they should also ensure they have the right tools in place to flag unauthorised print activity without unnecessarily restricting or disrupting people's work.

We've provided small, secure, lockable units for colleagues to put sensitive paper-based material into, for storage or recycling for example. We also have push-pull printing applications on our network connected devices in the office.

Rising costs of IT

Cost-effectiveness will also be high on the agenda for many CIOs this year, after a period in which large sums have been spent on equipping people for home and hybrid working. New laptops, printers, monitors and microphones have helped teams to transition to different ways of working.

But the drive to properly kit out home offices, coupled with the supply chain issues facing many equipment providers, has led to shortages and increased prices which means budgets are stretched. Vendors are having to deal with multiple challenges from chip and parts shortages, rising shipping costs, and people shortages in manufacturing and logistics environments. Costs are on the rise.

This means that CIOs may need to balance requests for home equipment in future, while still aiming to provide that consistent, professional experience for every employee across the organisation. Expectations are high that technology experiences should not be second rate when working away from HQ. As an example, we've seen this in sales of more advanced home-office printers being deployed under managed print estates for remote workers.

“Much of the success of hybrid working strategies comes down to engagement. CIOs and other leaders across the organisation need to be encouraged to take action often and quickly”

Equipping the office

To create a truly effective hybrid working environment, the office needs to change too. There has been a change in expectations from hybrid workers and the role/function of the office is shifting to more of a social space for people to come together.

A key principle we now have is that the office experience has to exceed the pain of a commute for our hybrid workforce. From the soft furnishings to the technology it all forms part of the organisational value proposition (OVP), which is key to attract and retain people. As your people walk through the door, the end-to-end employee experience must always be kept front of mind. I'd encourage all CIO's to be fully engaged with their people equivalents to ensure all the dots are joined up. Small frustrations soon build, particularly if technology isn't doing its bit. With such an active jobs market, it's too easy to move employers, and these inadequacies cannot be allowed.

Creating hybrid meeting environments where internal and external participants can easily connect and have a shared meeting experience has been key. We've addressed this through equipping all of our meeting rooms with MS Teams capability so colleagues can simply walk in and get going. Everything is connected with MS 365 so that the experience is quick, integrated and painless.

By observing, listening and talking to people, we identified this as a pain point. Also of issue was the noise pollution people were experiencing as a result of video calls at hotdesks. We solved this through the provision of single person acoustic pods; the modern-day internal telephone box, bookable via an app.

We've also built studios dedicated to host web-conferencing calls via MS Teams or Zoom. They're equipped with all the technology our people need when talking with customers and partners, including high-quality microphones, cameras and lighting, branded backgrounds and adjustable desks. They're designed to simply walk in and plug in via a single USB. You can be up and running in less than 30 seconds.

Hardware aside, there is also a network concern. Wandering around the office, it became apparent that our own network infrastructure needed upgrading to cope with the large number of concurrent Teams users. This wasn't seen at the service desk: it was more about getting feedback from people as they returned to the office. Dropped calls and Wi-Fi speeds were becoming a theme, so our IT people got straight onto it and upgraded the routers. Speed of response was key.

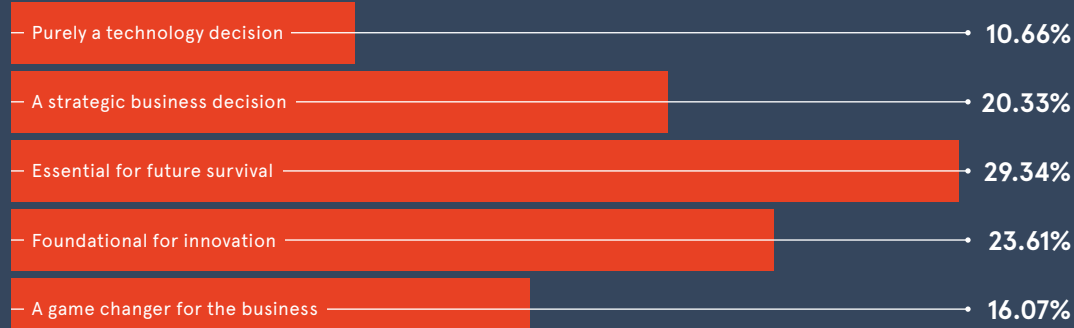
As I've found myself, much of the success of hybrid working strategies comes down to engagement. CIOs and other leaders across the organisation need to be encouraged to take action often and quickly. However, they should avoid thinking that there's a perfect solution to all of the issues that have arisen from the huge change in our work environments. All you can do is try to find the best fit for the majority of your people, and course-correct when necessary, listening for the early signals through conversations instead of waiting for tickets.

Ultimately, CIOs should now press on with the changes that matter most to their organisation, while ensuring their strategic plan for hybrid working fully covers the visibility, security and cost-effectiveness of IT equipment and new working practices. It's a lot to consider, but the time to do so is now. Because make no mistake, hybrid working is here to stay.

Find out more about the technology solutions supporting organisations to manage the security, device management and workflow challenges of hybrid working at brother.co.uk/business-solutions/hybrid-working

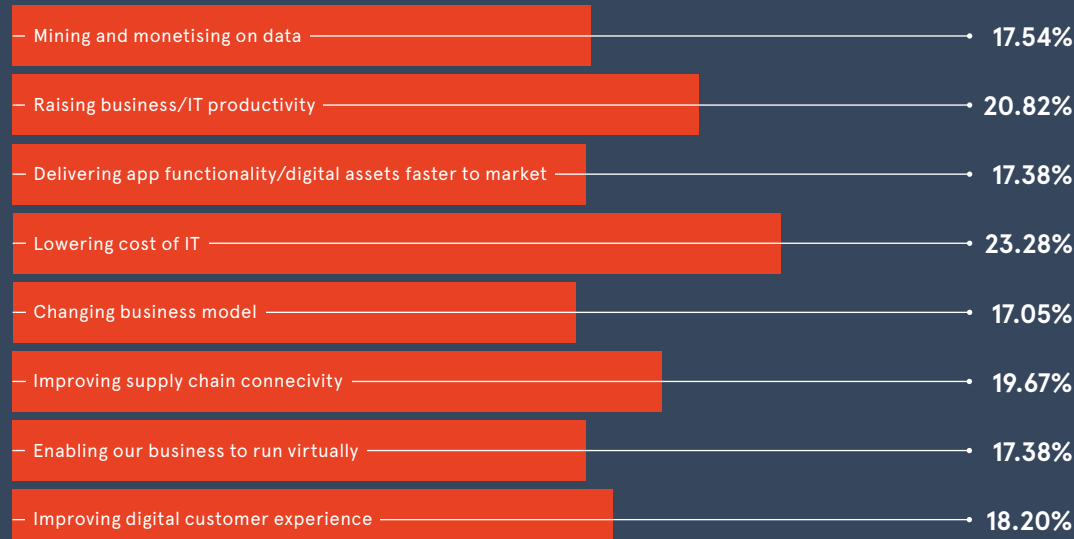


WHICH OF THE FOLLOWING BEST DESCRIBES HOW YOUR ORGANISATION'S LEADERSHIP VIEWS THE DECISION TO MOVE PUBLIC CLOUD CONSIDERING THE DISRUPTION CAUSED BY THE PANDEMIC?



IDC, Cloudearch, 2022

WHERE HAS YOUR ORGANISATION SEEN/EXPECT TO SEE THE BIGGEST VALUE GAINS BECAUSE OF THE USE OF CLOUD?



IDC, Cloudearch, 2022

Why you need to be a cloud-native enterprise

Jeze Ward, head of advisory, and **Dave Chapman**, head of strategy and product, at cloud services company Cloudearch explain the power of cloud-native ideas

What do Netflix, Spotify, Uber and Amazon all have in common? They are all cloud-native companies. For comparison, we could provide a list of companies in each of these sectors that are not cloud native, but it is unlikely you'll have heard of them.

Cloud-native companies are becoming dominant. In the future, many successful companies will be built on cloud-native principles.

In this article we want to explain why cloud-native thinking is so powerful and why your own organisation should reengineer along cloud-native lines.

What is cloud native?

First, a definition. In a nutshell, cloud native means a company is built on technologies that harness the unique properties of the cloud. But it is also about company culture. The cloud allows enterprises to play and experiment, and for teams to test their theories quickly with lower costs and overheads. Cloud-native companies build their strategy around the agility the cloud offers.

One of the key benefits is known as elastic scaling. Cloud hosts such as Amazon Web Services offer almost infinite data storage and processing. And cloud-native software is built to expand and contract like a concertina. This means that, for example, a cloud-native retail company that experiences a sales spike on Black Friday will be able to expand its service to run on more servers so no sales are lost. It can then reduce that back down as traffic falls to lower costs.

Cloud-native software is also updated in real time and there is no need to go offline to implement a code change. A 'blue/green' deployment means a new version (green) is spun-up in parallel to the existing version (blue) and activated in a millisecond. If it works, this version stays live, but if there's a glitch it can revert to the previous version. Amazon updates its code base in this way every 11 seconds, on average, with zero downtime. This means it can alter the shading on a button, introduce a new feature or tweak the layout whenever needed with minimal disruption for its users.

Using cloud-native software also gives teams control over their freedom. Traditional software is monolithic – one big lump of code – but cloud native breaks software into autonomous chunks called microservices. Each chunk runs independently and communicates with others to create a functional whole. This means teams can work autonomously on their service at their own speed. A bank, for example, can run the cash machine network independently to the mortgage operation. Both teams update their codebase as and when they wish. The idea that a cash machine team and mortgage team

need to sync their updates is obsolete. Innovation runs much faster as a result.

The power of cloud native

Cloud-native companies are free to experiment and software updates can be done or undone quickly. Netflix is a master of testing theories, regularly tweaking its user interface to test what works. Should a button be bigger or smaller? Should trailers auto-play? Should the logo sit top right or top left of the screen? The team is free to play around. Successful changes are built on, while mistakes are discarded. It's an iterative approach, with new ideas tested every day.

Compare this to the traditional approach where companies launch 'big bang' version upgrades every six months or so. This means multiple changes are activated at the same moment and bugs are a nightmare to spot – which one of the changes is causing the glitch? Mistakes are also retained until the next version upgrade. Creativity is all too often discouraged because it's seen as too time-consuming and troublesome.

“The transition to cloud native is a chance to rethink the entire enterprise. Don't waste it”

With cloud native, product teams are empowered. Take microservices. Suddenly product teams have direct control over their domain and code changes can be authorised by each team, reducing the need for company-wide coordination. When teams know they can conceive an idea and implement it with minimal outside interference it's amazing how creativity soars.

Another benefit is that the cost of failure is reduced to near zero and risk can be actively managed. A new idea can be introduced with ease, then retained or revoked. A great example is Spotify. It runs an experimentation platform to manage the constant testing of hypotheses. The user interface team recently tried a raft of new features, including providing lyrics with songs and changing how podcasts are presented. If an idea doesn't work, who cares? Failure is part

of the learning experience – necessary and encouraged.

Working with third-parties is revolutionised with cloud-native software, companies only need to plug-in a new service via an API. In banking, for example, fraud detection service Feedzai simply connects banks via a cloud API, with no software upgrades or maintenance. They encourage banks to try out Feedzai to see if it delivers results. Once again, experimentation is a key part of the philosophy.

Cloud native is thus a way of thinking – an ethos – more than a set of technologies. You can play, you can experiment. Creativity is unlocked. And teams are free to execute their own ideas.

Transitioning to cloud native

Convinced? We hope so. At Cloudearch we help enterprises of all sizes to reinvent themselves as cloud native. Above all, we help them see the potential. Our research, conducted with IDC, reveals that one in three already see the cloud as "essential for future survival" and "foundational for innovation". Momentum is building.

Our advice is to be bold. One client said they were worried about disruption. We explained constructive disruption is part of the process. The transition to cloud native is a chance to rethink the entire enterprise. Don't waste it.

Harness the energy of your people. Train your staff. Help them understand the potential of cloud-native ideas. Get them excited, not just nodding along. Empower them. Give them the authority to solve problems and they'll do so.

If you do need to hire staff, being cloud native makes recruitment easier. Talented professionals want to work with the latest tools. Being cloud native means an engineer from Amazon or Spotify can walk into your office and be familiar with the culture.

Migration has never been easier. The possibilities are greater than ever.

The companies of the future will be cloud native. We recommend you join them.

To explore what cloud native means for your enterprise, visit [Cloudearch.com](https://cloudearch.com). If you want to learn more, listen to our [Cloudbusting podcast](#), where we discuss what it means to live, work and solve business challenges as a cloud-native organisation. Available on all major podcast platforms including iTunes, Spotify and Amazon Music.

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THE METAVERSE

Hype a space: why it's time to take a reality check on the metaverse

Everyone's talking about the potential of this virtual realm, but even Meta accepts that the tech remains nascent. Is it too soon for most CIOs to get themselves immersed?

Rich McEachran

Enter the metaverse – a shared digital space that promises to change how firms market their products, pitch to clients and enable staff to collaborate. It promises to deliver efficiencies and boost productivity across the board.

Such is the buzz surrounding this tech that a poll of 7,500 office workers, conducted for Lenovo in November 2021, found that 44% would rather work in the metaverse than return to HQ. But a similar percentage doubted that their employers would have the expertise to enable that once it became feasible, while 59% said that their firms weren't investing enough in any IT advances that might improve their productivity.

The metaverse is an amorphous concept and it's also nothing new. The term was coined in 1992 by American author Neal Stephenson in his satirical cyberpunk novel *Snow Crash*. In an interview with *Vanity Fair* 25 years later, Stephenson stressed that he was simply doing his job as a sci-fi writer and "making shit up", but his book has come to be hailed, particularly in Silicon Valley, as remarkably prophetic vision.

Just before Mark Zuckerberg announced Facebook's name change to Meta in October 2021 and set out his vision for the metaverse, the company acknowledged that it would probably be somewhere between 10 and 15 years before the technology's full potential would be unleashed.

A statement co-written by the company's vice-president of global affairs, Nick Clegg, stressed that the metaverse "isn't a single product one company can build alone. Just like the internet, the metaverse exists whether Facebook is there or not. And it won't be built overnight... While that's frustrating for those of us eager to dive right in, it gives us time to ask the difficult questions about how things should be built."

Although the technology remains in its infancy, this hasn't prevented firms from forging ahead with plans to profit from it. Nike has been recruiting for a director of metaverse engineering, for instance, while luxury fashion brand Balenciaga is set to launch a metaverse business division. At the end of 2021, Disney's patent application for a "virtual world simulator" at its theme parks received approval. And Boeing has revealed that it's planning to design and build aircraft in the metaverse.

But some companies and CIOs may be getting ahead of themselves, according to Filip Martinsson, the founder and COO of Moralis Web3, which has built a toolkit for developers to create metaverse experiences.

"The metaverse remains fragmented and siloed. Right now, the focus is on developing and building the infrastructure needed to support it," he says. "In the short term, the metaverse doesn't need to be a primary point of strategic planning for CIOs. They ought to be looking to develop what they're already working on – for instance, using data to improve their productivity and/or the customer experience."

Christoph Heidler, CIO and vice-president of global transformation strategy at cloud

security firm Zscaler in EMEA, agrees. "A company should limit the attention it is paying to this space unless its business model is on a collision course with the metaverse – for instance, if it concerns cryptocurrency, gaming or retail," he says.

Metaverse builders are keen to create a safe and secure virtual environment in which all users will feel comfortable. But there are plenty of challenges for them to overcome. For example, people using virtual reality (VR) headsets can experience nausea, fatigue and a decline in spatial awareness if they spend long periods in virtual environments. There are also concerns about privacy to be addressed.

While these wrinkles are being ironed out, firms that are intent on becoming early adopters of the metaverse should be working out how they can incorporate VR and augmented reality (AR) into their day-to-day operations, Martinsson advises.

Charlie Jones is technology director at NBS, which has designed a collaboration platform for the construction industry. The company is considering how its data can be integrated into virtual environments in the most accessible way, he says, adding that many players in the sector already use VR and AR to bring their plans to life and improve clients' understanding of projects.

Beyond this, he is sceptical about the practicalities of spending time interacting in virtual worlds, given that the technology is so far from maturity. Bill Gates has predicted that most business meetings will be held in the metaverse by 2024, with workers wearing VR headsets and interacting as avatars, but Jones isn't so sure.

"For many companies, a video call is going to be as good as, or more effective than, any metaverse experience," he argues.

The metaverse's rate of adoption will be influenced by improvements in interoperability (the ability to move seamlessly among virtual environments) and the usability and

reliability of VR hardware. As the tech evolves over time, unforeseen practical applications for it will surely emerge.

"We can expect a few more years before meaningful adoption, which seems contrary to most of today's headlines," Heidler says, but he adds that companies need to keep abreast of metaverse developments and review their business models accordingly over the medium to long term.

Martinsson suggests that, once the technology has matured to a certain level, CIOs "will need to start thinking about how their

“In the short term, the metaverse doesn't need to be a primary point of strategic planning for CIOs”

firms can be present in the metaverse and what that presence will look like".

At that point, they will need to ask themselves several other questions, he adds. These include: can they create virtual experiences for their products and services? If so, what will these look like and how can their value to customers be measured? Are rival firms likely to move into the metaverse too?

"The metaverse will play a bigger and bigger role in business as the technology develops," Martinsson says. "So these are just some of the factors that companies should consider when putting together their long-term strategies." ●

HOW MUCH BETTER CAN META BE?

Attitudes toward metaverse marketing among internet users in the UK

33% don't understand what the metaverse is

22% think that brands should advertise in the metaverse

17% would like to spend some time exploring the metaverse

eMarketer, 2021

36% of respondents have no need for the metaverse in real or virtual life

13% think that brands should build more branded experiences in the metaverse



TALENT MANAGEMENT

Culture club – where IT and HR converge

Most CIOs who've led their firms through digital transformations have focused on the commercial imperatives so far, but a further challenge is beckoning: can they become cultural change agents too?

Alison Coleman

The task of building and reinforcing a company's culture has traditionally been the domain of the CEO. Business leaders will typically work with the HR function to ensure that the desired values are embodied in their firms' people management policies, processes and systems. But the CIO is becoming increasingly important in this respect too, given the seismic cultural impact of tech-enabled remote working, among other digital transformations, on employees.

With many office workers spending less time together at head office as their companies adopt hybrid working patterns, technology is becoming a bigger part of

the employee experience. A digital-first culture seems to be emerging in many cases.

Of the 500-plus CIOs polled in an international survey by Adobe and *Fortune* in April last year, 89% saw themselves as change agents who were helping to improve the culture of their organisation. To what extent are they achieving this?

Most CIOs have attained their position because they've focused the considerable technical expertise they have accumulated on strategies and systems that support the attainment of commercial, rather than cultural, goals. So it could be argued that, while CIOs are clearly agents of change, the responsibility for developing a culture

that will optimise employee engagement should fall to a senior executive whose sole focus is on people.

But Helena Nimmo, CIO at software firm Endava, argues that IT directors of companies that have embraced hybrid working are increasingly being held accountable for maintaining their organisations' cultures. This is because they are responsible for the tech that's enabling employees to work at any location and remain connected with each other, just as if they were all still sitting together in the same building.

"In the new hybrid working era, CIOs must balance the physical and the virtual by implementing technologies that improve employees' satisfaction, as well as enabling their work," she notes. "This is a chance for CIOs to reimagine the relationship between people and technology by taking a user-centric approach to the tech."

Nimmo adds that they need to consider cultural factors across the whole organisation, as employees in different functions may not necessarily view hybrid working in the same way. "To become true leaders in the digital workplace and meet the diversity of needs across their organisations, CIOs need to put themselves in all of their tech users' shoes and take on a community representative role," she stresses.

Ensuring that all employees feel well aligned with their organisation's culture is

crucial in talent retention, according to a new study published by OC Tanner, a provider of employee recognition schemes. Its research has found that, when people feel disconnected from their workplace, culture and purpose, the likelihood that they will produce great work falls by 90%. They are 11 times more likely than the average employee to suffer burnout and six times more likely to quit within three years.

The concept of hybrid working is nothing new, of course. Many companies have operated successfully for years with employees mixing home and office working without experiencing unacceptable levels of cultural disengagement. But the Covid-driven fast-tracking of some organisations' digital transformations in the pandemic has left their employees needing more support in adapting to the new tools and systems that have been thrust upon them.

There can also be a lack of cohesion between the HR and IT functions. Companies are becoming increasingly reliant on the collection and analysis of real-time data to better understand how their staff are coping with the digital transition. This trend has brought the contributions of both HR and IT to the fore. Despite this, 48% of HR leaders surveyed in 2021 by Nextthink, a specialist in employee engagement, admitted either that they didn't work well with their counterparts in the IT team or that they weren't sure whether they did or not.

Nextthink's chief people officer, Meg Donovan, believes that CIOs should work more closely with HR to collect feedback from staff, along with hard data on the performance of employees' devices, applications and networks to identify any sources of frustration.

"They can then progress towards their digital experience goals, from improving employees' perceptions of the company's technology to shifting users to a new service," she says.

The CIO has historically focused on ensuring that their organisation's technology remains fit for purpose, so that the business can feel confident that its people will always have the right tools to do their jobs properly. But the acceleration of the fourth industrial revolution during the Covid crisis is giving CIOs opportunities to help encourage knowledge-sharing, improve collaboration and cultivate a greater sense of community. They have the chance to become genuine agents of positive change.

“CIOs need to put themselves in all of their tech users' shoes and take on a community representative role**”**

89%

of CIOs see themselves as change agents who play a role in improving the culture of their organisation
Adobe, 2021

43%

of CIOs have seen a decline in IT staff engagement as a result of remote working
Harvey Nash Group, 2021

58%

of CIOs have seen a decline in employees' mental wellbeing as a result of remote working
Harvey Nash Group, 2021

Jonathan Morris, co-founder and managing partner of executive search firm TritonExec, believes that CIOs can go even further than that. They are well placed to become "evangelists" in their companies, he says, by cultivating a consumer-grade employee experience with the help of new tech that's aligned with a digital-first workplace culture.

The impact that CIOs could have on employee engagement is "tremendous, as they can drive positive cultures by bringing in tools, technologies and systems that are foundational in human-centric design," Morris says. "No employee wants to feel like they exist on an island. The CIO's role is to shape their experience."

He also sees CIOs as pivotal to the success of companies in managing their most talented people. "These high-performing employees have 'little to no tolerance for outdated tech, mindsets and processes. Attracting and retaining them means creating environments where they can thrive. It's essential to provide them with efficient systems and collaboration capabilities that don't handcuff them," Morris says. "The CIO is therefore on the hook to, at the very least, enable the kind of culture expected by their company's top talent." ●

Commercial feature

Generating ROI from cybersecurity

The threat of ransomware, in particular, is alarming boards. Now, then, is the ideal moment for CIOs and CISOs to demonstrate how greater cybersecurity investment – including in automation solutions and trusted third parties – will minimise risk, drive a cyber-aware culture, and enable innovation

Oliver Pickup

Q What does the cyber threat landscape look like in 2022, and how can CISOs and CIOs become enablers?

JH Ransomware is the most prominent cybersecurity topic at the moment. Sophos' research shows that while the number of ransomware incidents is dropping, the severity of those cases is increasing. We found 37% of organisations in the UK were hit by ransomware at least once in 2021. Of those attacks, 54% were not just hit by ransomware, but the cybercriminals successfully managed to encrypt their data.

DW The board certainly thinks ransomware is the number-one cyber threat, but there are others. We have a range of customers – from aerospace and defence sectors to medical device innovators – so we need appropriate levels of cybersecurity. However, working at the extreme end of security means we can dial it up as required, and it improves the overall

awareness and capability, which assures the board and customers.

AH We have a highly mobilised workforce, so moving to the cloud and having data quickly dragged into a secure environment massively reduces the attack surface. There should be a healthy tension between CISOs and CIOs. The value we provide to our customers – patients – must be weighed up against protecting personal information. The relationship must be strong and the conversation constant. It's more than agreeing on a framework reviewed every six months.

SG Biffa's cybersecurity is entirely in the cloud, too. It enables us to have a single view of our devices and means we can scale at will. Operating in the cloud makes it easier to have multiple backups of network data, protecting us against ransomware and other threats. But our biggest challenge is the behaviours and abilities of the end-user, so increasing education is critical.

ALM The threat landscape is constantly evolving, so you need to cover as many bases as possible – and that includes thinking holistically about your supply chain. The most crucial thing is to understand why you might be a target, who is most likely to attack you and why. It's also important to remember, especially with geopolitical tensions, that there is a risk of becoming collateral damage in an unexpected way.

GT The IBM Cost of a Data Breach 2021 report, published in December, showed ransomware is the top threat by operational impact and factored in 7.8% of global breaches last year. For UK businesses, ransomware incidents cost an average of £1.5m. It's worth noting, though, that the most common breaches are from logins with stolen passwords – 1.5% of all login credentials globally have been compromised, according to Google. But it's

simple to mitigate most of this risk just by activating multi-factor authentications on all online accounts. We have a vested interest in helping our suppliers as well as clients with cyber hygiene.

Q To better manage the evolving cyber threat landscape, outsourcing and collaborating are critical – how should these partnerships work?

JH The appetite for businesses to move to an outsourced model is increasing because there are so many things to monitor. If you buy security products from different vendors, it can be time-consuming to look across various dashboards. It makes better sense to invest in cybersecurity where it's all in one place. The return on investment is giving back your people time.

DW I have a global team spanning Asia, Europe and the United States and don't have enough cybersecurity resources, so outsource things like threat monitoring, security incident and event logging. This approach has driven innovation, as we can leverage the experience of the expert partners. Automation and artificial intelligence tools are essential – we bin 93% of suspicious emails that come into the organisation before they reach the end-user.

GT Some things are better managed in-house, but you will always need professional help. Security automation with AI and machine learning has been shown to reduce breaches and incidents and, if a breach does occur, cut costs by 80%. Also, it takes a third less time to detect and mitigate incidents with automation in place. Additionally, having zero trust architecture can reduce the cost of the breach by 35%.

AH I don't have AI experts in my team. So I look for fantastic partners who can bring cutting-edge solutions to the table. A



“A hybrid approach leads to an ROI and interest at the board level because of the reputational protection we can provide by spending X instead of Y**”**

hybrid approach leads to an ROI and interest at the board level because of the reputational protection we can provide by spending X instead of Y.

ALM When you're outsourcing, it's vital to consider nurturing a partnership, rather than just chucking a load of risk over the fence to somebody else – because you still own that risk. We are all on the same team, we have shared objectives, and anticipate risks and opportunities together.

SG Unless you've written your own antivirus software, you've always outsourced. It's just about working out the right balance. We outsource a lot, rely on controls and patching brought to us by third-party organisations, and knowledge and input from governance bodies.

Q What are the best ways CIOs and CISOs can gain greater support from the C-suite to reduce cyber risk?

SG Biffa is not a bank, so we don't need the highest levels of cybersecurity. But we are innovative, and we want to shake hands with our suppliers who can improve our operation. By joining the dots between compliance, our suppliers, and the customers, we can show Biffa is more secure than our competitors, which will gain top-level buy-in.

DW Now, when the organisation is choosing a new location for a factory, we send our head of information security, giving the business an extra layer of protection. This business-focused security operation resonates well with executives. It takes a task off their plate and provides insight into how we are thinking, which gradually helps increase security education and awareness.

AH The days when you had ivory tower IT functions that set all the rules in a command-and-control style are gone. Instead, the technology functions within organisations are massive facilitators, both for change and security. I now look to hire people who, yes, have deep technical skills but also possess strong stakeholder management and business analysis skills so that they can be solvers, not blockers.

GT Ultimately, the ROI on cybersecurity is all about cost avoidance. It's about not having your company reputation trashed because you can't keep your house secure,

and as a law firm, this is particularly important. To prove the business case, you need to measure the right things and make them understandable for decision-makers.

ALM There are interdependencies between strategy, values, and culture, all reinforced by security. When talking to decision-makers, you have to demonstrate a genuine depth of knowledge and understanding of the business and show how the security strategy fits. You won't have much time with the board or executive, so distil your messages, but this is where the conversation needs to be.

JH Persuading the board to spend money on security will be a challenge, but everyone now understands the importance of cybersecurity. Using automation technology to free up resources and reduce risk will provide an ROI. As a classic fallback option, if all else fails, you could paint an alternative picture showing the risk of not having adequate cybersecurity and suffering irreparable damage.

For more information, visit sophos.com/en-us



Panel

- SG** Stephen Graham, IT service director, Biffa
- AH** Amanda Hamilton, CIO, City and County Healthcare Group
- JH** Jonathan Hope, senior technology evangelist, Sophos
- ALM** Anna-Lisa Miller, group CISO, Spectris
- GT** Graham Thomson, CISO, Irwin Mitchell
- DW** Derek Winkill, CIO, TT Electronics

RECRUITMENT

Stocking up: retail's hunt for IT talent

The recruitment market for tech professionals is overheating as the industry's digital transformation continues apace. Can retailers obtain the skills they so sorely need without incurring huge costs?

Emily Seares

A serious skills gap has opened up in the retail industry, caused largely by firms' efforts to adopt a digital-first approach to satisfy their customers' growing appetite for e-commerce. As CIOs in retail vie with traditional tech employers for the IT professionals who can enable the sector's digital transformation, demand for talent is far outstripping the supply.

The root of the problem is the speed at which change has been thrust upon retailers. Many have been struggling to transform their operations to match the rapid uptake of e-commerce offerings by consumers since the start of the pandemic, not helped by the fact that the digital skills they need for this are also highly sought-after in other sectors.

Just over two-thirds of the 2,100 senior IT decision-makers polled by the Harvey Nash Group for its international *Digital Leadership Report 2021* said that a lack of tech skills was preventing their firms from keeping up with the pace of change. The survey also found that the sectors most likely to hire more IT professionals in 2022 were those under the greatest pressure to solve this problem. Retail topped the list, followed by transport, technology and leisure.

The intense competition for IT talent is causing pay packets to rocket, with salaries increasing by at least 30%, reports Tony Gregg, CEO of executive search specialist the Anthony Gregg Partnership.

"Those working in technology are now demanding their absolute crust," he says. "And, when businesses lose these people, they struggle to replace them. This is blowing all of the salaries right out of the water, but businesses don't have a choice."

Or do they? Is there any way that employers in retail – or, indeed, in any other sector that isn't historically tech-centric – can source the digital skills they require without breaking the bank?

Jeremy Pee, chief digital and data officer at Marks and Spencer, believes that building an internal pipeline of future IT talent could prove to be a more cost-effective solution, particularly in the medium term. He explains that M&S has already "invested heavily in a collection of apprenticeship programmes to raise the data capabilities of our colleagues."

These include a level-four programme in data analysis and a level-three course for aspiring data technicians.

"These two programmes have upskilled more than 280 colleagues from across M&S, making a tangible difference to how we think and operate," Pee says.

The retail giant also entered a partnership last year with educational tech firm



Cambridge Spark to provide a level-seven apprenticeship in data science and artificial intelligence. This has led to the creation of what he describes as retail's first data science and AI academy. The facility is supporting the studies of 10 employees, who are learning advanced techniques "in areas such as modelling, machine learning and automating business processes".

The most globally sought-after IT skills are in cybersecurity, big-data analytics

and technical architecture, according to the Harvey Nash survey. Demand for developers has seen the biggest upswing, in line with a growing emphasis on creating new products and services.

Jo Drake, CIO of e-commerce company The Hut Group (THG), reports that it has established several training programmes to meet its IT skills requirements. The firm's apprenticeship, internship and graduate schemes offer entry into tech roles ranging

from search-engine optimisation to full-stack engineering, for instance.

THG also runs "an accelerator scheme, which fast-tracks people who may not have followed the traditional computer science education routes", Drake says, adding that such initiatives are "about ensuring that young people who have the ambition, but perhaps not the digital training, can learn skills that have become crucial in our tech-enabled world".

Anna Barsby, a former CIO at Morrisons, Asda and Halfords, is the co-founder and managing partner of Tessiant, a consultancy specialising in business transformations. She believes that retailers can also bring tech talent into the fold by emphasising the great potential for career development created by the sector's digital shift.

This is an exciting time to be entering retail, as more and more businesses in the sector embark on their digital transformations, argues Barsby, stressing that the opportunities are there for ambitious tech professionals to lead high-profile projects.

"One of the reasons I love the retail industry is that it enables you to get very close to

changing things," she says. "You're front and centre, directly influencing the customer journey, making consumers' lives easier and more valued through tech."

Amy Prendergast, transformation and operations director at the Retail Trust, a charity that supports people working in the industry, agrees, observing that gen-Z job candidates in particular are seeking employers that can demonstrate "a clear sense of purpose".

She explains: "Many of today's younger generation need to believe in the mission of their organisation, with the reassurance that their job matters and benefits a greater cause. This is something that companies should use to attract and retain talent."

“ Many of today's younger generation need to believe in the mission of their organisation, with the reassurance that their job matters and benefits a greater cause

Some retailers, especially those urgently seeking tech know-how to plug specific gaps, are also working with third parties to find what they need.

One such company is children's clothing retailer Purebaby, which has been "engaging with agencies to source very specialist skills rather than doing that kind of work in house", says its CEO, Sanjay Gill. "One example is our new customer data platform. We have been working with a partner called Cheetah Digital, not only on this implementation, but also on the ongoing drive to achieve the best outcome for us and our customers."

Despite the progress that this partnership has achieved, he reports that a lack of internal e-commerce skills has been a drag on Purebaby's planned global expansion.

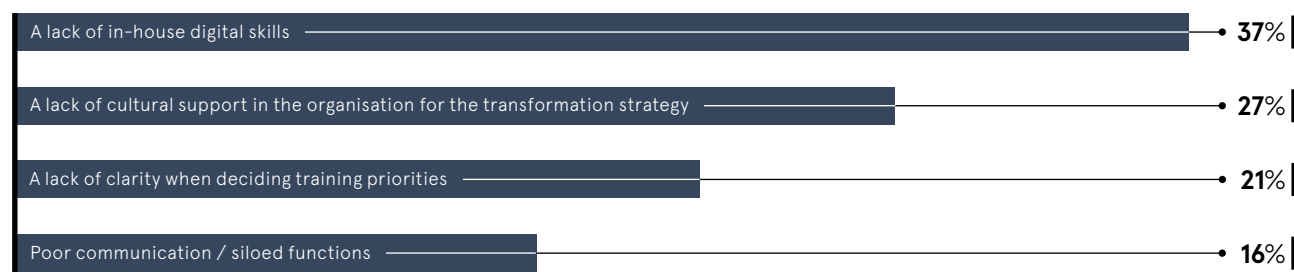
"We're continuing to rely on the agency model, but due to in-house skills challenges, we have pushed some of our project timelines back to late 2022 or 2023," Gill says.

For at least as long as their industry's digital upheaval lasts, most CIOs in retail will surely face a serious recruitment and retention challenge. But those who are prepared to adopt a range of measures – from attracting fresh talent by stressing the sector's CV-enhancing opportunities to investing in the professional development of their existing employees – will give their firms the best chance of thriving in a digital-first future. ●

RETAIL'S DIFFICULT DIGITAL TRANSFORMATION

Share of UK retailers citing the main challenges they have faced during the transformation process

Retail Week, 2019



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