

THE FUTURE CIO

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How CIOs can build on the momentum from the pandemic

The past 12 months have shown how crucial the chief information officer is; now the focus is on building seamless customer journeys and delivering growth

Sean Hargrave

The chief information officer (CIO) has previously been seen by too many companies as the person in charge of making sure the computers keep working. The pandemic has changed that.

After a year in which working from home has become the norm, the CIO and a company's IT team have been the cavalry charging over the hill to ensure businesses can operate. The task for CIOs now is to keep up that momentum and not go back to being the person who makes sure laptops can "talk" to printers.

Robert Teagle, CIO at car auction firm BCA, which also operates WeBuyAnyCar and Cinch, believes this is best achieved by harnessing the positive new light the role is seen in and aligning the department with future growth plans.

"It's been like a snowball; the shift to digital was always moving along slowly and then the pandemic meant it suddenly raced down the hill," he says. "We can't keep it going at that pace for much longer, but we do need to keep it going. We do need to help companies digitally transform, so the CIO role, and the team they lead, has to show it is absolutely crucial to growth."

Teagle talks about pace from a qualified vantage point. A year ago the split between digital and face-to-face auction sales was 70-30, in favour of auctions. Within a year, this had to shift to 100 per cent digital. When lockdown is finished, Teagle sees a clear role in keeping the digital process moving at pace by removing remaining barriers. At the moment, he has ensured the BCA part of the process is digital, the next

“The trick for CIOs is to get in front of the chief executive and see what they want to achieve to grow the business. They have to be entrepreneurial and see how they can fit in and deliver that growth

project is to make sure the paperwork on the selling and the buying side follows suit so the entire process can run more smoothly.

Offering a seamless customer experience

Removing these barriers in the customer journey is where CIOs should be looking very closely to make a difference, according to Louise Bunting, CIO at datacentre operator Yondr Group. In her experience, even when systems are digitalised, too many companies have invested in applications that are suited to a particular task, but are not integrated within the wider business. While they might work, they do so in isolation, rather than as a seamless journey for customers.

To show the true worth of the role, she believes CIOs need to stop thinking about an application for every process they need to facilitate. Instead, they need to consider how they can remove a series of internal operational steps and offer a smooth customer journey.

"We have to break down the silos created by rows of applications that each perform a specific task," she says. "CIOs need to join up the processes at their business so customers get a seamless journey. Interacting with companies has to be intuitive. True digital transformation means a great experience with as few touchpoints as possible."

To get to this position, Bunting believes CIOs need to change how they are perceived in their organisation and to do that they need to change their own attitudes first.

"We have to stop being seen as the department that says 'no' too often or 'that's too difficult'," she suggests. "We have to build trust by saying something's challenging, but we'll get it cracked if we work with the owner of the issue and the operation teams. It's a two-way process. We have to be proactive and build that trust if we're to raise the profile of the CIO."

Aligning with growth plans

For CIOs looking to retain their herostatus, the pandemic has done more than show the value of digital transformation in keeping companies operational. It has also offered up some warning signs for companies as they build for a future when lockdown rules are removed.



Those pushing for change now have examples of what happens to businesses that are not ready to trade digitally and Lyn Grobler, CIO at insurance company Howden Group, believes they should not be afraid to reference them.

"If you need an example of how important digital transformation is, you just need to think how Topshop didn't want to put the necessary investment into digital to 'do an ASOS' and then think about who ended up being in a position to buy them," she says.

Her advice is for CIOs to tap into this concern of what happens to businesses that do not commit to transformation and then work through the chief executive, wherever possible, to align their vision of growth with what digital can offer. This gets round the age-old problem of the role being defined more by whom it reports to than what it can achieve.

"If you're a CIO reporting to the chief operating officer, you'll only have conversations about operations and if you're reporting to the chief financial officer, you're only ever going to be asked to reduce costs," she says. "The trick is to get in front of the chief executive and see what they want to achieve to grow the business. You have to be entrepreneurial and see how you can proactively fit in and deliver that growth."

Going beyond a digital coat of paint

This tactic of being proactive rather than reactive, looking for ways to make a company more agile and customer journeys smoother is how Arthur Hu, CIO of tech company Lenovo, believes the role will rise in prominence.

He predicts many organisations are going to be more receptive to digital transformation proposals as markets emerge from lockdown. This is rooted, he believes, in too many businesses realising the "we still have more time, we still have more runway" attitude did not work out well when the pandemic struck.

The good news for any CIO is many C-suites will now realise their culture has to change to embrace digital because, as they have found out, it is the best way to prepare for an uncertain future. The positive developments come with a warning, though, for any executives not committed to going "all in" on fundamental change.

"You can't slap a coat of paint on something and call it transformation," he says. "The CIO has to be the integrator for customer experience; you need to use data across the whole experience to make it seamless and interactive. You also have to build an architecture that can adapt because, as we've seen this past year, huge change can happen at any time and you need to be able to adapt."

Building teams around the CIO

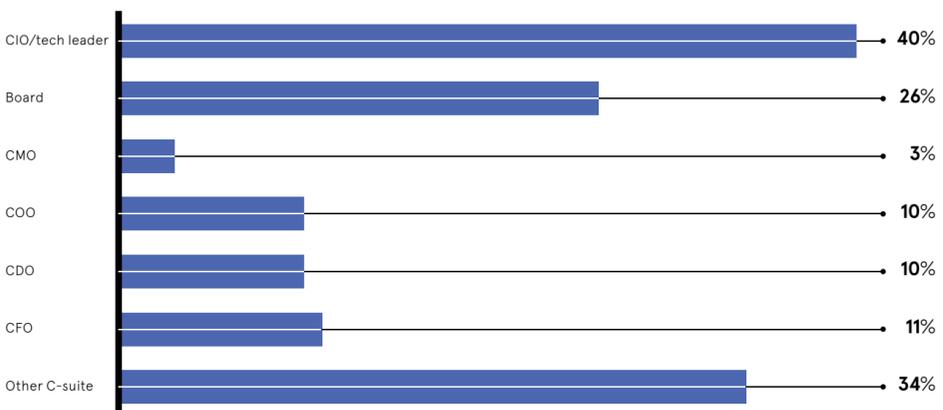
For companies that want to streamline their customer experience, the advice from BCA's Teagle is that a successful CIO needs to build the right team around them. For him, this does not mean looking to recruit solely from people already in the sector, but to bring in new ideas from other industries.

"We want to get away from a standard 'vanilla' experience to offer something with the convenience and fun of buying something on Amazon or booking a holiday online," he says. "We have retail and travel IT experts onboard because they're going to help us think differently. When you think about it, picking up a car is just like click and collect at a shop, so we're building a team with expertise in these areas."

It is clear that keeping up the momentum for the CIO is not just about technology. It will start with aligning the role with a company's growth plans, while offering seamless journeys to the customers it aims to attract. It also involves getting the right people in place who can bring new ideas to help support the CIO role and maintain its current high-profile status. ●

CEOs SEE CIOs AS KEY DRIVERS OF BUSINESS STRATEGY

% of CEOs on who will be or needs to be the key driver of business strategy over the next three to five years



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Rebuilding the foundations for an anywhere workforce

Organisations adapted rapidly to distributed working, but inevitably there were holes in their approach. Building for the future will require them to revisit security and increase visibility

A year on from when organisations were catapulted, practically overnight, into a world of distributed working, many are realising there can be no return to pre-pandemic workforce models. Workplace practices deemed normal just 12 months ago now appear archaic and nonsensical. The future of work is already here.

Research from enterprise software firm VMware, *The New Remote Work Era: Trends in the Distributed Workforce*, published in October 2020, revealed a 128 per cent increase in the proportion of UK employees who see remote working as a prerequisite rather than a perk. For Generation X workers in Europe, the Middle East and Africa, this is the view of 53 per cent. Having realised the benefits of distributed work, seven in ten employees said their company cannot return to its old ways.

Since working remotely, 73 per cent of workers said personal connection with colleagues has improved, 62 per cent felt more empowered to speak up in video-conference meetings and 60 per cent had seen their stress levels decrease. Distributed working can also help deliver environmental, social and governance goals, with 63 per cent of companies finding it easier to recruit talent from minority communities and 79 per cent disabled candidates. Three quarters of respondents agreed innovation now comes from more places within the organisation than it did before.

The research also exposed concern, however, that management teams aren't adapting sufficiently to offer workers greater choice and flexibility. Though the pandemic forced them to adapt quickly and accept remote working, many overlooked the strong culture and leadership required to really execute the workforce

model successfully over the long term.

"For organisations to truly embrace the 'work from anywhere' model, managers will have to move away from monitoring inputs to focusing on output, all from within an environment of mutual trust," says Dr Carl Benedikt Frey, director of the Future of Work Programme at Oxford University. "Striking the right balance will be key to ensure employees are motivated and while being in an environment where creativity can flourish."

Véronique Karcenty, digital workspace director at Orange Group, France, adds: "The unprecedented shift we've seen in the last year undoubtedly offers many advantages to employers and employees alike. However, we should not underestimate the required change in people management strategies to keep employees engaged and productive. While executive leadership is important for setting the tone, it's middle management that needs to constantly demonstrate trust, energise the team and build a sense of shared purpose."

The challenges don't stop at people and culture, either. More than a third of those surveyed by VMware also said IT is not equipped to manage a remote workforce. The scale of today's distributed workforce has proliferated the number of digital technologies and platforms in use, but the whole experience is fraught with challenges ranging from remote employee onboarding and visibility through to compliance, security and employee safety.

Driven by their desire to remain operational and productive, organisations are moving additional applications to the cloud and adopting more flexible bring your own device (BYOD) arrangements, which are creating new information silos.

REMOTE WORK IS NO LONGER JUST A 'NICE TO HAVE'

IT decision makers who see remote work as a prerequisite rather than a perk

Prior to the pandemic



Once businesses return to a normal working environment

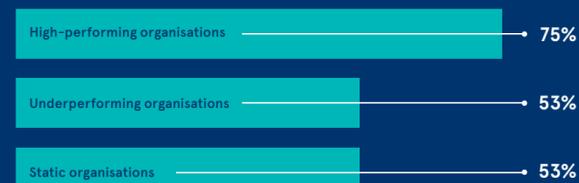


IT decision makers that agree we can't go back to the way we worked before

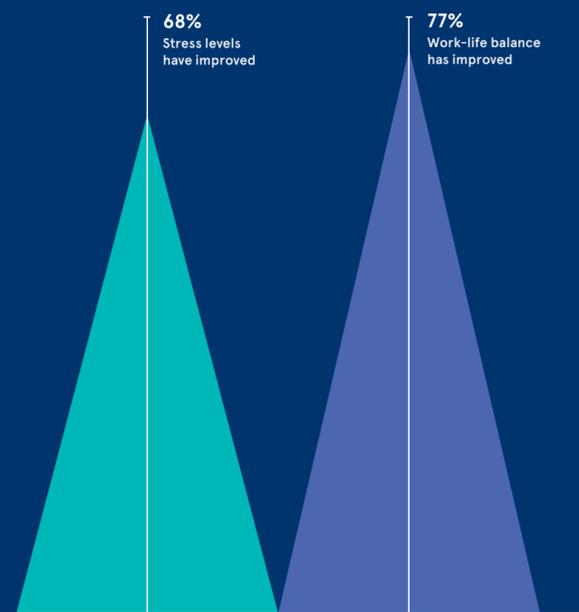


REMOTE WORK HAS BEEN LINKED TO GREATER EMPLOYEE MORALE AND HIGHER PERFORMANCE

Organisations who agree remote work will represent a competitive differentiator

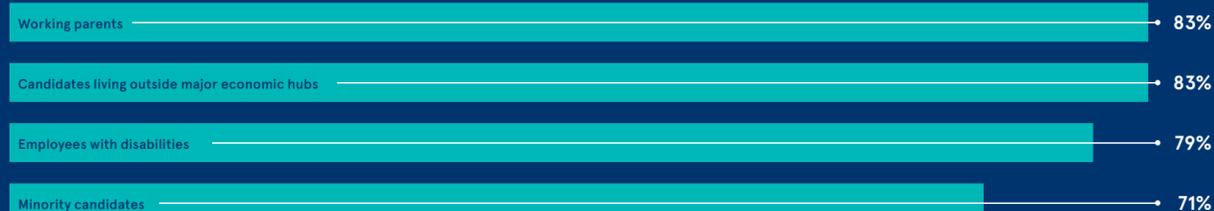


Impact of remote working on employee morale



COMPANIES WHO EMBRACE REMOTE WORK COULD REAP THE BENEFITS OF A MORE DIVERSE WORKFORCE

Demographics that can be recruited and retained more thanks to remote work



Note: All data global

Vanson Bourne on behalf of VMware and Dell 2020

“The reality is security was not being designed into the distributed working model

Every new device connected to an enterprise network represents a possible attack vector for would-be hackers. All these factors have broken down the enterprise security perimeter, amplifying the need for zero-trust security models.

"It was great companies were, by and large, able to get their people up and running quite quickly and easily when we first went into lockdown, but the reality is security was not being designed into the distributed working model," says Spencer Pitts, digital workspace chief technologist at VMware. "An enterprise network was always linked to a physical workplace. A lot of companies gave up some

security controls to adapt to remote working and when revisiting them they're finding many are just not designed to work outside the office."

While most organisations have largely been in a light-on scenario for the last 12 months, vaccination programmes are presenting a way out of the pandemic and so it's crucial companies are now thinking about their optimum workforce model in the new normal. Whatever balance of physical and virtual working they land on, a modernised application approach will be essential to continuing to deliver distributed working well in the future. The

challenge will be scaling that up and down, with minimum cost and maximum agility.

"When we think about what happens next, it's about flexibility, choice, reducing technical debt and regaining visibility, though not necessarily control," says Kyle Davies, practice lead of integrated technology architecture at IT service and solutions provider CDW. "IT has always had a fixation with control, but that's not the way tech needs to be delivered today. We need visibility for compliance and maybe a bit of control, but it shouldn't be a control-first methodology. Security is a big play in reducing technical debt and gaining visibility is the foundation."

Q&A

Put people first in the new world of work

Spencer Pitts, VMware's digital workspace chief technologist, and **Kyle Davies**, practice lead of integrated technology architecture at CDW, share their vision of IT in the world of distributed working, where people, culture and collaboration define the digital experience



Kyle Davies, Practice lead of integrated technology architecture, CDW

Spencer Pitts, Digital workspace chief technologist, VMware

Q Many companies have found productivity has risen, or at least stayed the same, during the pandemic. Will distributed working be a permanent shift?

KD There have been significant productivity benefits from distributed working, though there have been drawbacks too. In VMware's study, 59 per cent of employees said they feel more pressure to be online than ever before. We might think presenteeism has been eliminated in the traditional sense, but people still feel the need to overcompensate by attending more virtual meetings, being online more and sending emails late at night. Equally, as soon as they're allowed to get back to their usual activities, hobbies, sports and so on, they will return to the lifestyle habits they had before the pandemic, which means the extra hours of work they've been putting in, potentially, will not continue. Distributed working is here to stay, but the

future of work is more likely to balance old and new in a hybrid way.

SP In the early days of lockdown, I did unfortunately get calls from people asking "can your software show if people are in front of the machine and doing what they're supposed to?" A lot of that comes down to the fact organisations mostly pay people for their time which is rooted deep back in history. That's one of the big changes from the pandemic: people now realise we need to move more to an outcome-based way of working, measuring output and not just time. The problem was they didn't fully understand how to measure productivity from different perspectives. You need to be able to quantify digital employee experience, which basically means, can I measure if you are OK at home, or your workplace, and do you have what you need to get your job done effectively? If you can't quantify

and understand employee experience in a distributed workforce, how can you see if there are problems and make changes? Agility has to be at the heart of everything.

Q Who should be leading the charge with reimagining workforce models?

SP There are many different stakeholders, but ultimately the chief information officer (CIO) has to play a huge role and that means evolving IT as we know it. The traditional IT department's job was to provide devices with some collaboration and office productivity tools on them and then make sure users could access them on any device, within reason. But they can't just sit in that mode of providing basic services anymore, they need to be working with other stakeholders. Onboarding is now on their list, for example, and understanding if employees are happy. Originally these tasks would have sat solely with human

resources, but in a distributed workforce they rely on technology. Lines of business also now rely on digital applications more than ever to perform their duties, and the CIO's presence at board-level has been elevated because technology is so integral to running the entire business.

KD It has to start at the top. If your leaders are not going to lead by example, from a key stakeholder point of view, then your IT consumers aren't going to adopt it either. Have you engaged with your users? Do you know what processes they need to follow? Will technology save them time doing this or is it going to make their life harder? The new digital workforce experience has to be a very collaborative engagement and it has to start with the top and then filter down from there. Without proper collaboration and communication, it fails every single time. Think people, process and then finally the technology.

Q What in your view is the future of work?

KD It's a hybrid-by-design model that gives us the utmost flexibility in where we work. It allows companies to realise savings on real estate and other areas, and then reinvest capital into their people, processes and technology. Central to the model will be security, digital experience management and abstraction of the different layers of the workplace out into different services. You have to understand what your users are consuming and why, the availability and how it is all delivered remotely. Having all that as an abstraction layer is the end-goal. Change must happen without impacting the underlying experiences to users.

SP If you took a step back and removed everything about how we used to work from your memory, how would you design workplaces today? You certainly wouldn't have your people commuting into a massive office every day. I think most people would envision the office as a collaborative community, a place they visit to get the best engagement out of their precious time. You would design for a distributed working methodology with modern, secure applications and you'd make sure everybody had what they need to get their job done effectively. By not viewing work as a rigid nine-to-five, time-based concept, but rather based on outcomes, you can also extend your talent pool around the world. Companies are faced with a unique opportunity to redesign their workplaces just like this. We work with CDW to help take organisations through all the practice steps from where they are now to that ultimate nirvana.

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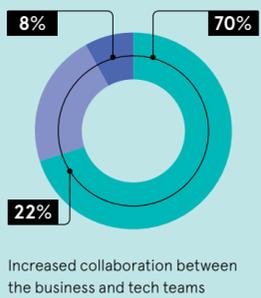
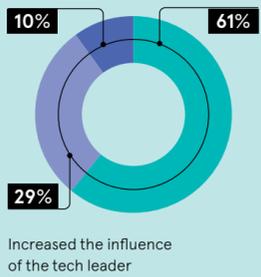
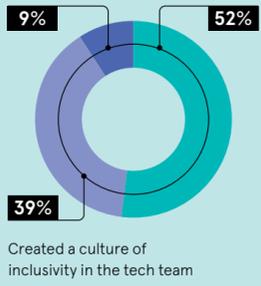
THE SKILLS OF THE FUTURE CIO

As CIOs take on a broader role across business driving strategy and transformation, the skills they and their team need are changing too. Alongside a growing requirement for knowledge of newer areas of technology such as AI and cybersecurity, CIOs also need softer skills associated with business leadership, from understanding how to influence others and foster collaboration, to creating a culture of inclusivity.

THE PANDEMIC IS PERMANENTLY CHANGING THE NATURE OF THE CIO ROLE

% extent to which CIOs agree with the following statement

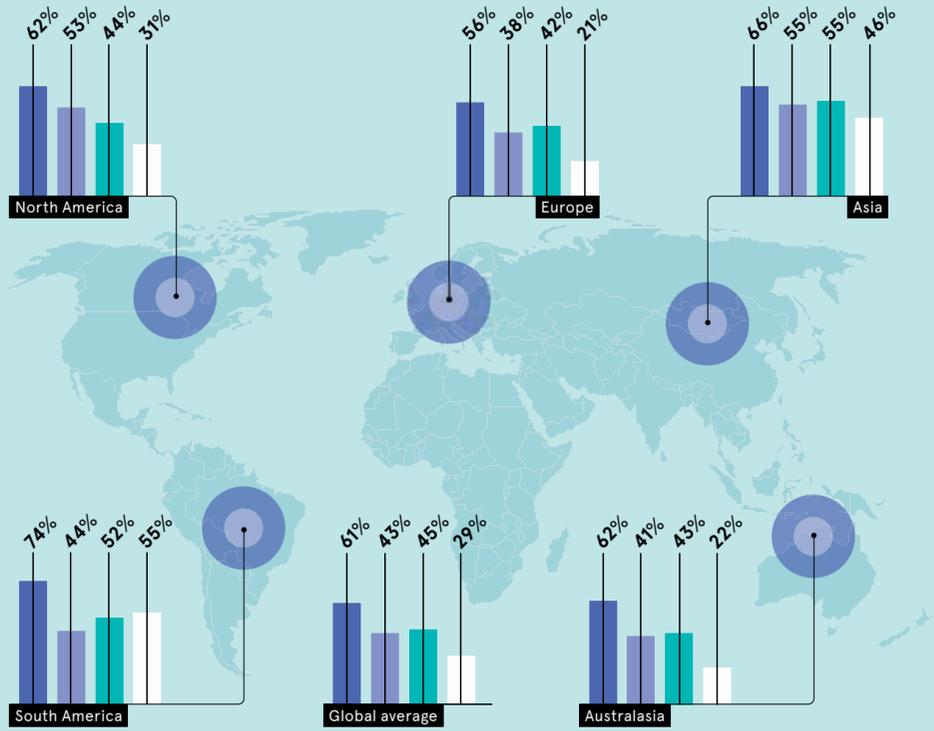
● Agree ● Neutral ● Disagree



CIOs AROUND THE WORLD

What IT leaders are expecting to change due to Covid 19

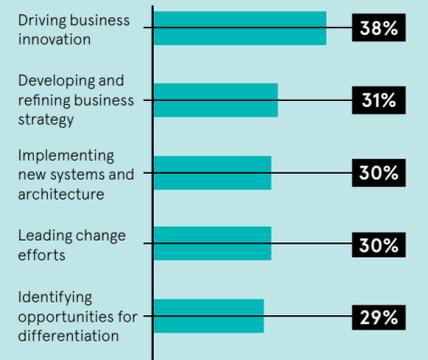
● Increased influence of the CIO ● Expecting a budget increase ● Expecting an increase in headcount ● Increased investment in business-managed IT



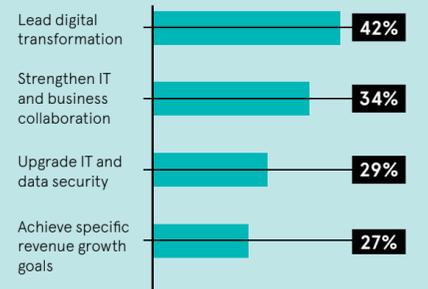
Source: Harvey Nash / KPMG 2020

BUSINESSES WANT CIOs TO TAKE A MORE STRATEGIC OUTLOOK

The activities CIOs hope to focus on in the next three years



What CEOs want CIOs to focus on

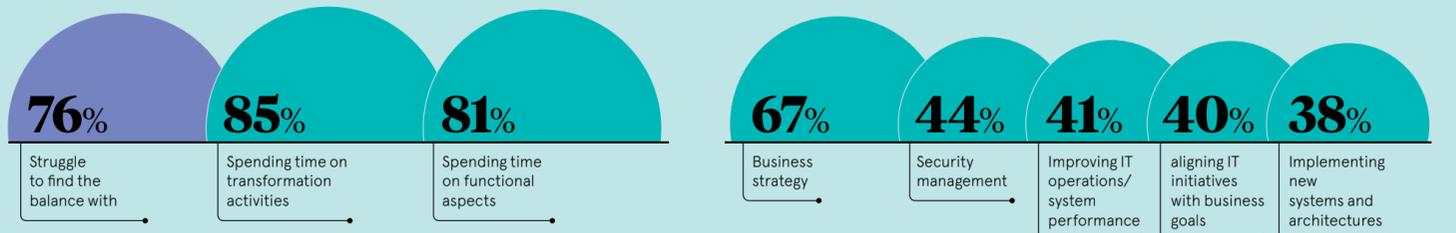


Source: IDG 2021

CIOs ARE STRUGGLING TO STRIKE THE RIGHT BALANCE BETWEEN BUSINESS INNOVATION AND OPERATIONAL EXCELLENCE

Transformation is taking precedence but there is a pressure on functional tasks

The activities CIOs are currently focusing on



Source: Harvey Nash / KPMG 2020

Source: IDG 2021

TECH TEAMS NEED MORE SKILLS AS FUNCTIONS ARE BROUGHT IN-HOUSE

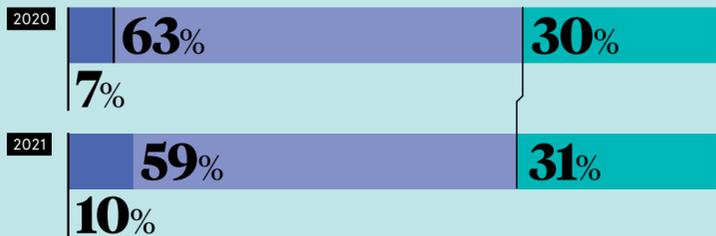
Shifts in supply due to Covid-19, % of respondents

● Decrease ● No change ● Increase

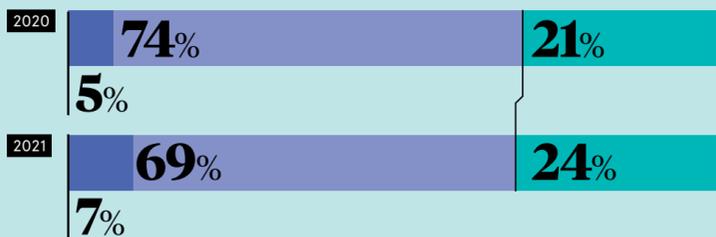
Duplication of important suppliers



Business processes carried out in-house



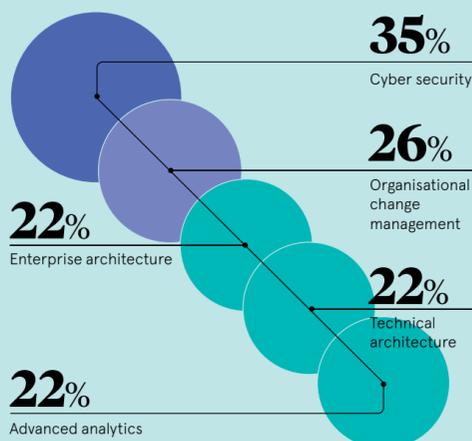
Sales/delivery functions carried out in-house



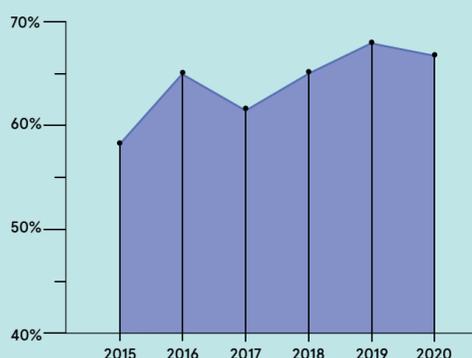
Source: Gartner 2021

THERE IS A GROWING SKILLS GAP IN THE IT TEAM

Top five skills shortages highlighted by Covid-19



Organisations where a skills shortage is holding them back

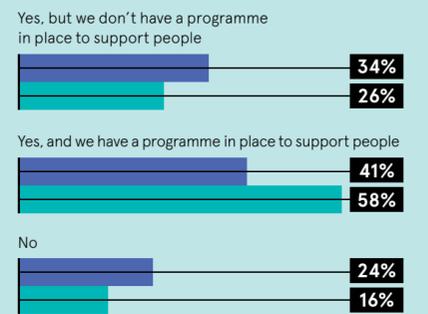


Source: Harvey Nash / KPMG 2020

CIOs ALSO NEED TO CONSIDER SOFTER SKILLS AND TAKE CARE OF THEIR TEAM

% concerned with the mental health of their team

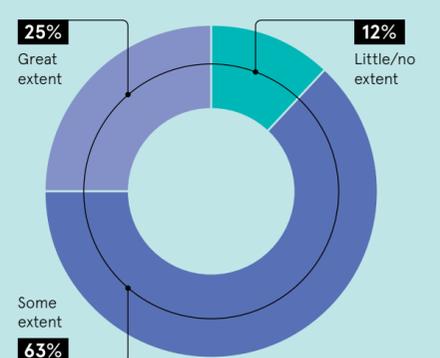
● Pre Covid ● Covid



Source: Harvey Nash / KPMG 2020

CIOs ARE RETHINKING WHAT IS IMPORTANT

The extent to which current ways of working promote a healthy and sustainable work environment



Source: Harvey Nash / KPMG 2020



Ashish Surti (AS)
EVP technology and security, Colt



Belinda Finch (BF)
CIO, Three UK



Dr Christopher Lohmann (CL)
CIO, Talanx AG / HDI



Hanna Hennig (HH)
CIO, Siemens



Major General Tom Copinger-Symes CBE (TC-S)
Director strategy and military digitisation,
UK Strategic Command



Werner Knoblich (WK)
SVP and general manager EMEA, Red Hat

ROUNDTABLE

The open path to digital transformation

Success in the digital age requires open culture, processes and technology. Experts at a virtual roundtable discuss how these interact to accelerate change. To watch the full roundtable on demand, please visit raconteur.net/topic/sponsored/redhat-transformation

Gren Manuel

Q Let's start by talking about open culture. For organisations undergoing transformation, what does an open culture really mean?

BF For me, an open culture is all about authenticity and being able to bring your true self to work. It is also very important to have authentic leaders who let people be accountable. You need a high degree of trust and to embrace failure as part of the learning and development process.

HH I'd add that it's predominantly about building on each other's ideas, ensuring people are willing to share in building a really great product. You need joint purpose, values and priorities that can guide people to really collaborate.

CL Building on that, we encourage people not only to develop code, but also to publish it, going out to the community with something of value, sharing what they have. Yes, it is about getting something, but it is also about giving, and both are important.

AS At Colt we do a lot of work building trust around communities of interest and people within structures. But I

agree inclusion and diversity are important as well; they make sure everyone has the time and purpose to contribute their ideas and participate.

TC-S There's something counterintuitive here. Sometimes the best way to work is to have an organisation with a really strong overarching identity. Provided you have that overarching theme in place, it allows everyone to be themselves within that wider purpose.

Q Have the changes to working practices over the last year made it harder to create an open culture?

BF I think it's easier because everyone's more authentic; they're at home, you see the backgrounds, kids flying in, cats on keyboards. And it breaks down barriers; we're all in the same boat and it puts you at ease, even if you're talking to the CEO. You feel you can challenge more than when you were in an office and had to knock on the big office door.

TC-S There's something interesting in there about vulnerability. When I was a kid, leaders had to be perfect, to know all the answers. Now I think leadership is more about asking questions and getting good answers from people much more junior to yourself. I think this is something we're just starting to lift the lid on.

Q What is the culture of winners in the digital space? And what is the culture of those who are losing?

WK The key thing is every culture has its reason; they are optimised for certain things. A top-down structure is optimised for efficiency, but not optimised for dealing with an uncertain kind of future.

An open organisation is much more kind of optimised for this and for speed. Also there is the principle of meritocracy of ideas where the best idea wins. It's a principle that grew up in the open source community and one we apply to our entire organisational model.

Q Which is more important, culture, process or technology?

HH Culture, absolutely. [Management writer] Peter Drucker said culture eats strategy for breakfast; this means you won't succeed unless you get culture right, regardless of how good you make your strategy and tools.

CL I agree, but also from a management point of view, it's hardest to change. We are in the insurance industry, which is becoming more digital and building a meritocracy culture. Where competence matters and not hierarchy is a key challenge.

AS But you can never have a single culture, especially in a global organisation. You have different offices, perhaps a different culture in headquarters versus business units, and various lines of business. We can align values and behaviours, and I think that then drives a set of cultural principles, which gives direction. But you have also to accept there will be different cultures within the business and then you have to play to the strengths of that as well.

WK I think the key thing is you have core values, a wide statement about what you are as a company. Obviously, this would get interpreted a little bit differently in Sweden or Russia or France; you still have a role for local cultures, different interpretations. But I think it's important to have certain clear values and a purpose everybody can get behind.

HH You have to be careful about imposing culture to a certain degree. For example, if you're acquiring a startup, you need to be careful not to absorb or overwhelm them with a large-company culture. Also you have to look at the project: is it a major infrastructure programme where the priority is safety and security? Or a digital transformation that needs speed? We have to allow for different cultures within a joint purpose.

Q Does dealing with multiple cultures create a management challenge?

AS At Colt we operate from 21 different countries, but I think you have to think not at the team level but know people as individuals, what motivates them, and understand the kind of values and behaviours that are dear to them. You can't have a cookie-cutter process saying this is your culture and this is the box you fit in.

TC-S It's also about resilience. If you have a monolithic culture, you probably appear quite strong, but you won't be very resilient. Ashish was talking earlier about multiple cultures within an overarching set of values and I think that breeds resilience, especially in times of crisis. That's something we get out of open culture as well.

Q Let's talk about open processes. Have you reached the perfect model with agile/DevOps/DevSecOps or is this a simplification?

AS From my perspective, we are still on a journey. We have half the organisation using the waterfall model [traditional linear software development], because we run a very physical business, and the other half in transition. I think there's still innovation to be done in terms of consolidation of tooling languages, how we use data, how we use artificial intelligence and machine learning to help us in these agile methodologies as well.

TC-S We absolutely need to move to agile, but I don't think waterfall is going out of business any time soon, especially for those who build big platforms

– for us that is really big ships, fast planes and some big armoured vehicles – as well as the software to go with them. You need both, but when you are using edgy, startup type processes, there is a challenge in scaling them up.

WK It's also important that in your first agile incubation teams, you have volunteers who are wanting to do something different and are motivated. It leads to higher success rates.

Q What's the best way to connect open processes to the rest of the business?

BF We are trying to set up teams led by "product owners", multi-skilled individuals who naturally know agile methodology and run multidisciplinary teams. They understand the business but also deeply understand technology, bridging the gap. One way of finding these people is our new graduate scheme that brings people into technology and trains them up in the commercial side of the business, so they can grow up in the organisation and fully understand both sides.

CL In insurance, traditionally, we were organised with the business developing new products, processes, whatever and then throwing them over to the other side that was a separate IT company. But when I joined Talanx eight months ago, I found something very interesting, the management board in charge of IT was at the same time in charge of the business and the same was true for their direct reports all the way down to the team level. When I did some meet and greets with the agile delivery units, I couldn't tell who was business and who was IT. And in the end, it didn't matter because they were fighting for a common cause.

HH It's also about providing the right tools to the people in the business so they can do it themselves, things like low code or no code. It's a democratisation. To me, IT in the future is not behind walls or a black box, but very open, providing integration at the back end.

Q Moving onto open technology, what is the connection between open culture and open processes?

HH For me, open culture, open source and open technology go hand in hand. And in the future, I believe all companies will decide to go this way because if you don't embrace this technology, you're limiting yourself from setting up a true platform business, where everyone builds on each other's ideas and enjoys network effects.

CL Whenever we buy software, we challenge a proprietary solution against open source solutions. We need to assess risks and costs, all that we have already discussed, including the cultural aspects

“ Open source not only motivates staff; it also helps drive technology forward in a way you can later consume **”**

and the impact on attracting talent. It ends in a case-by-case decision.

TC-S We're moving from a need-to-know to a need-to-share mentality; open standards are the key. We have just launched our first "bug bounty", paying ethical hackers to find vulnerabilities in our systems so we can fix them.

HH This is a marathon and not a sprint. If your competitive advantage in the past was your intellectual property, patents and so on, you will not be prepared to give that all away immediately by fully opening up.

CL It's difficult to imagine moving into open technology without an open culture. But there's another direct link between culture and open technology, and that is talent. Yes, open technology lowers costs and brings speed to market. But it also attracts the people we want to work with.

WK Developers build their CV on GitHub [an open source software repository] now. Open source not only motivates staff, though; it also helps drive technology forward in a way you can later consume. Plus, what you need to understand is open source is now the real technology innovation engine. When you think about cloud, containers, machine learning... it is all coming out of open source communities, partly because the big web 2.0 companies like Google and Facebook are all contributing to open source communities.

“ An open culture is all about authenticity and being able to bring your true self to work **”**

“ IT in the future is not behind walls or a black box, but very open, providing integration at the back end **”**

For more information please visit red.ht/transformation





TECHNOLOGY

The role of humans in automation

What if there's a power cut? It seems like a silly question, but it's a reflection of deeper issues surrounding the role human workers play in companies turning to automation

OPINION

'Companies that have enabled technology skills and ways of working across the wider organisation will sustain progress'

The future chief information officer (CIO) is a business strategist, a digital, data and technology visionary, a global thought leader, a chief customer officer and a talent master. The role is to enlighten, to delight, to share and enable through influence. This individual is no longer the human interface to the back-office function. Their job is to lead people through change as an enabler for growth.

Core to this is a demand for CIOs to develop leadership capabilities across people, processes and technology, themes that will enable them to future-proof their organisations and equip them for resilience. To build that innovative stretch across their organisation, CIOs need to address the natural fear that accompanies change. This requires a range of qualities: enhanced emotional intelligence that allows them to implement timely technical decisions while also being tactful, supportive and transparent; and a marketing mindset they can harness to ensure authentic communication and collaboration.

In many businesses this is set against a backdrop of limited budgets and headcount, user needs that are increasingly diverse, and the challenge of ever-evolving technology and cyber posture. The future CIO must be aware of, and able to connect to, opportunities that fill gaps in the market and do it at pace. Meeting and exceeding these user needs requires teams and networks that are representative of the market they serve: demographically representative, culturally diverse, inclusive and always listening.

Diversity enables innovation in thinking and delivery to enable solutions that

provide advantage tomorrow. Future CIOs must collectively address different approaches to attract, grow and retain talent, including those who are digitally excluded and lack the skills required for work. After a year where work-life balance has been a focus, levers for team health are increasingly important. Future CIOs are humble, authentic and receptive, open to collaboration and co-creation across departments, traditional boundaries and sectors.

How can this be achieved? Through thoughtful collaboration. We must continue both to uphold our responsibility to securely manage organisational and personal data, and also find ways to share information to reduce friction. These approaches will increase pace, agility and flexibility for all.

The future CIO will constantly be evaluating new technologies, threats and opportunities. These leaders will seamlessly translate this to business impact with metrics, so the right organisational decisions can be made. Organisations that have grown over the past 12 months have delivered services and products at the right time, in the right place, using the right technology. These organisations treated CIOs as experts who are listened to and trusted to create value.

There are no longer technology companies. Every company is a technology company. Companies that have enabled technology skills and ways of working across the wider organisation will sustain progress. What is needed is agile decision-making across organisation-wide multi-disciplinary teams, rethinking governance to focus on processes that matter and adapting investment approaches.

Maria Highland

Often talk of automation is met with some sideways glances and whispers of jobs being made redundant. However, if the past few years have shown us anything, it is that someone needs to be there to fix the self-checkout in the local supermarket.

Essentially, automation helps to relieve the pressure on workers during a labour shortage or at peak times, or remove the need to manually perform repetitive jobs. This results in streamlined operations and enhanced efficiency, which helps generate more profit across the entire business.

The importance of automation has grown in the face of Brexit and coronavirus, both of which promise continued disruption, labour shortages and fluctuating consumer demand. This, coupled with changing customer expectations and a shift online, means chief information officers (CIOs) need to reassess their automation offering.

According to Kofax vice president of brand and corporate marketing John Lipsey: "As organisations continue to embrace digital workflow transformation, automation becomes increasingly important. In fact, full-scale end-to-end automation has become a matter of survival in the wake of the pandemic. More and more customers demand frictionless experiences and businesses that don't provide them may not be able to survive."

Human touch

Despite mention of full-scale automation, this does not mean "no humans allowed". Automation technologies work best when used alongside humans and they should be a key factor for CIOs during the implementation process.

"When applied smartly, technology can help provide relief for human workers by facilitating repetitive jobs. This can generate leeway and the potential for more throughput," says ProGlove chief executive Andreas Koenig. "The main benefit of this is that workers can then focus on the tasks they do better than machines."

However, when it comes to implementing automation, it is crucial to know where it is going to be best placed. "CIOs need to keep in mind that automation has its limits," says Koenig. "Some processes just cannot be automated for a number of reasons, including too many product variants during many manufacturing processes."

This is the case in the e-commerce market, which was seeing double-digit growth even before the pandemic. "Increased e-commerce transactions impact the fulfilment process as they come with drastically different delivery times and formats that will need to be handled. One customer may order a toothbrush, another a TV set. These two orders cannot be delivered through the same lines," says Koenig.

"Automation comes with a substantial investment, limited applications and is time consuming in the deployment process too. It is absolutely critical to precisely identify the opportunities and benefits automation may or may not deliver. Prioritisation and knowledge of the restrictions of the technology to be deployed are also critical aspects for CIOs to consider."

"Aside from adequate talent, all this calls for thorough knowledge of the organisation and its processes, so it may make sense to build that talent internally. And even though it may sound trite, it is mandatory to provide guidance, proper change management and clear communication when introducing automation."

Getting the foundations right

For Koenig, the key technologies to look out for are "optical character recognition, intelligent character recognition, natural language processing, robotic process automation, machine learning or deep learning".

But businesses should not panic if they haven't thought about some of these technologies because the needs of each business will vary across industries. CIOs need to be mindful that there is not a tick-box list of automation technologies they need to have and, as Koenig points out, there is no silver bullet or a one-size-fits-all approach.

A major benefit of automation is the level of scalability it offers, therefore starting with the basics can help solidify a good foundation for further investment, as well as gradually introducing the workforce to new ways of operating.

"At the end of the day, organisational success depends on the support of the workforce. Support requires trust and trust is built on transparency or the democratisation of workflows to support workers," says Koenig.

"It is paramount to identify the potential of the technology you are considering. Technology must help to design better workflows and provide relief for tedious,

“Technology must help to design better workflows and provide relief from tedious, repetitive or mundane jobs. It will need to serve human needs, so any decision to automate needs to be driven by data

repetitive or mundane jobs. In short, it will need to serve human needs, so any decision to automate needs to be driven by and rely on valuable data."

First comes data, then comes automation

If businesses are going to start somewhere, they should start with their data, says Koenig. "Businesses, even though they need to be compliant with privacy regulations, definitely need to work more with the data they capture. Data refinement is a key concern here. It is critical to invest in technology that goes beyond simply collecting information by contextualising it so you can deduct actionable insights," he says.

At the core of automation technologies lies a vast amount of data, collected by internet of things devices. How well you can process all the data gathered will govern the quality of business insights that are generated.

According to Kofax and Qlik's white paper *Using data for insights is still critical for business operations*: "As the world evolves and more operations continue to be digitalised, business insights from data continue to be one of the fastest and most effective ways to derive value, from short-term actions to long-term investments." Once the data has been captured, "complexity and errors can

be removed from this resource-intensive, manual process through automation".

Further benefits can be derived by leveraging automation to combine "business data with data from other disparate sources and channels - customer data, customer feedback, operational data and processing data - and provide simpler, smarter ways to visualise business intelligence". But the real trick, according to Kofax and Qlik, "is taking all the data acquired through intelligent automation and turning it into actionable information".

The white paper continues: "Most businesses have become adept at collecting lots of data. However, finding the most efficient and effective means of understanding and democratising the data, and using it to make informed business decisions, is more difficult for organisations."

Creating more transparency around the availability of data and making it more accessible can help solve this. "Organisations and users need self-service, interactive web-based dashboards that provide process and business insight, without the need to involve IT to build new reports or adjust database queries. It's key to create custom dashboards or modify existing ones, or to filter and aggregate data for displaying content in a variety of views," it says.

Powerful trio

COVID-19 has accelerated the use of automation within procurement and supply chains due to its potential for improved cost efficiency and productivity, according to GEP's 2021 Supply Chain and Procurement Outlook Report. Automation will help streamline processes and allow smarter collaboration in core procurement and supply chain activities.

"Automation boosts output and affords employees more time to focus on strategic work, allowing companies to do more with less," the report says. "Platforms with built-in forecasting and supply network capabilities will leverage artificial intelligence (AI), machine learning and robotic process automation to reduce their reliance on individual spreadsheets and boost shared, real-time data and demand models."

In another white paper, Artificial Intelligence and its impact on procurement and supply chain, GEP says: "Applying machine learning to the discovery of patterns in supply chain data - the painpoints and most crucial factors for smooth, successful management of a network - can be revolutionary."

"As the data is interrogated under constraint-based modelling, the machine can extract the most influential criteria that impact inventory, demand, production planning, risk and logistics management, and supply chain optimisation."

Many of the insights generated may not have been previously understood or even known due to the sheer volume of data available. Access to such insights enables smarter planning decisions and introduces new levels of network agility and responsiveness, helping businesses stay ahead of the curve.

Is AI a cure-all?

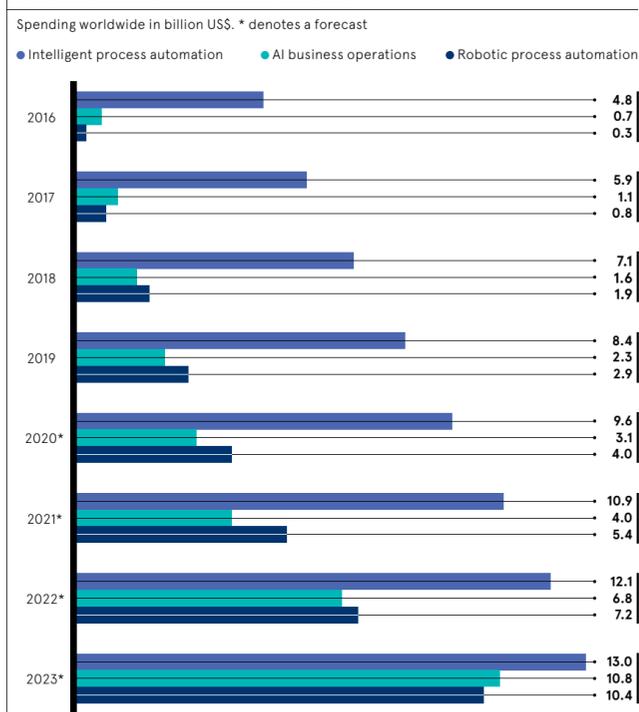
However, the GEP 2021 outlook report also emphasises that automation is not a panacea: "It must be coupled with human insight into category demand and the impact of a lingering recession, and continue to manage fluctuations in safety for employees and partner suppliers."

"In atypical situations, though, algorithms alone can fall short. Early on in the pandemic when customers were suddenly requesting toilet paper instead of Lego, Amazon's algorithms were perplexed. The situation demonstrates that bulk ordering and extreme demand surges need human intervention to revise fulfilment and inventory replenishment."

"Businesses that combine human adaptability with machine-learning models will better withstand the shock of unforeseen disruptions. Algorithms still need a daily real-world context."

Likewise, when it comes to implementing AI, it helps to start small and specific. GEP suggests CIOs look to target specific problems. This allows teams to build confidence and by taking the time to understand where the biggest value can be extracted, and then delivering a shorter project with well-defined objectives, this acts as a good testing ground before expanding the AI reach. ●

INVESTMENT IN AUTOMATION IS SOARING



HFS Research 2020



Roxane Heaton
Director, Government Digital Service
Advisory Board member
Digital Leaders



TRANSFORMATION

Finding genuine value in digital transformation

Major technology projects all too frequently result in disappointment, so how can chief information officers ensure they avoid the common pitfalls and deliver clear business benefits?

James Lawrence

The pace of digital transformation in almost every organisation has accelerated hugely over the past 12 months, largely driven by the coronavirus pandemic. But as the shock waves subside, the continuing large-scale transfer of operations and services to digital will only be considered truly successful if it delivers lasting and demonstrable business benefits.

More than ever, therefore, chief executives are looking at their chief information officers (CIOs) to ensure technology-driven projects do not fall into the trap of becoming costly box-ticking exercises that fail to deliver on their promise.

"The pandemic really shone a light on the critical nature of technology and how it enables every single business process," says Jots Sehmbi, director of innovation and technology, CIO and chief technology

officer at the University of Essex. As the pandemic first struck, a year ago, Sehmbi was faced with the challenge of moving the operations of the entire university, comprising some 13,000 students and 2,000 employees, online in under three weeks. "But we were able to do it and with very little interruption," she says.

The success of this kind of rapid shift puts into sharp relief the fundamental requirement for every transformation project to ensure from the outset it is solving a genuine problem, says Wendy Clark, chief digital information officer at NHS Blood and Transplant. It is essential to get basics like this right and that, she argues, means focusing on "human-centred design".

"There has to be a real need, from the people who use a service, to want to use a service that's digital," she says. "There are so many examples

of services that organisations have tried to push out over the years which, until the need was actually there, people didn't take up."

A powerful illustration of this in the healthcare sector is remote consultations with GPs, says Clark, who was executive director of product development at NHS Digital until moving to her current role just over a year ago. "Many doctors didn't want it and quite a lot of patients didn't want it, so it didn't take off at first," she says.

Over the past year, catalysed by the pandemic and the need for social distancing, this digital service has gone mainstream. "Under most circumstances, can you imagine doing it any other way now?" she asks.

Understanding the painpoints

The lesson here is there is a real risk of falling into the trap of "digital transformation for the

sake of digital transformation", says Sehmbi, who also sits on several external advisory boards. "A lot of the time people don't come to CIOs with business problems," she says. "They come with the question, 'what's the shiny new technology we should be using so we stay up to date?' But really it's about understanding the challenge you're trying to resolve."

She explains this in the context of a real-world scenario. "I may be told, 'I've seen a marketing artificial intelligence system that will give us better intelligence about our customers'. That might sound great, but I will ask, 'So is customer insight a current problem for you?' It's about shifting the conversation to understand the painpoint we're actually trying to resolve."

To move the dial in this direction, it is also important for IT leaders to become great explainers to the business, says Patrick Knight, who was group CIO at builders' merchants Travis Perkins until January this year and has previously held similar roles at TUI, the University of Nottingham and Rentokil Initial.

"The thing that differentiates success and failure comes down to the story," he says. "You must understand the whole business and you must be able to relate what you're attempting to do in a way that can be best received by other people in the business."

An essential point to be aware of, he says, is technology is just a tool. "But businesses are in the business of making money, so you must be able to describe what you're doing in those terms. Technology is the least part and the duller part of what I do. For me, it's about identifying problems or opportunities where they exist. And the answer may be technology or it may not," says Knight.

The role of the transformational CIO

A further major component of success is the specific role played by the CIO, particularly when it comes to balancing day-to-day demands against bigger game-changing projects. "CIOs have a never-ending work-book full of legacy challenges and other projects to deploy and roll out," says Clark. "Trying to free up time to be focused on the future can be hard."

The best way to tackle this challenge, she says, is to understand no transformational IT leader can go it alone. "The key is building the right team around you that can put the right amount of focus into the various elements of the role," she says. "What's more, connecting the transformational aspects and the day-to-day aspects is not completely separate, the two are inextricably linked."

Taking a different approach to vendor engagement and risk management can help, argues Christine Ashton, who has held IT leadership roles at Thomson Reuters, Transport for London and oil and gas multinational BG Group now Shell, and is currently a consultant with large organisations on digital strategy. This is particularly the case now that IT is increasingly delivered "as a service" via the cloud, she points out.

"We have to convert digital transformation into an ecosystem that sits around a company, with the CIO at the top, and then

COVID-19 HAS SPED UP DIGITAL TRANSFORMATION NEEDS

% of IT leaders

Permanently sped up digital transformation

47%

Implemented artificial intelligence and machine learnings

24%

Undertook a large-scale software-as-a-service implementation

23%

Harvey Nash/KPMG 2020

create very different relationships with providers," she says. "It should no longer be, 'I buy your software and I take the risk of putting it in', but rather, 'I use your processes to make a contribution to my business, therefore you, as the supplier, must own the risk that those processes will work'."

Ashton believes that operating in this way can shift relationships, both with vendors and an organisation's internal and external stakeholders, beyond simple partnerships. Instead, they can become the key to unlocking enormous value by moving the stakes from mere digital transformation to business model transformation. "Businesses were very quick to have the CIO on speed dial during the pandemic," she says. "CIOs shouldn't lose that, but we should be talking about something much richer going forwards."

This means playing an active and "invasive" role in the organisation, while defining the CIO's contribution in business terms, rather than purely transactional ones. "It's about being truly bold with the business and with customers," Ashton concludes. "And the CIOs who do that will fly." ●

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COLLABORATION

CIO and CHRO: The new power couple

As workforces become more remote, chief information officers and human resources teams must collaborate

Chris Stokel Walker

The future of the workplace has never looked more uncertain. More than one in three of us now work exclusively from home, according to the Office for National Statistics, and the idea that remote working isn't feasible, which some employers used as an excuse to keep staff in the office, has disappeared. Work is changing and with it, work policies and IT practices need to as well.

In the early days of the coronavirus pandemic, employee IT policies and human resources rules went out the window as businesses moved onto a war footing. Workers were sent home and asked to make do and mend with whatever IT equipment they could find, while employees felt on call at all hours, struggling to juggle work priorities and family life. That wasn't feasible, nor was it safe, for businesses and individuals in the long run.

"As distributed workforces become commonplace for many businesses, security teams must work to bring security practices up to speed with the new working policies," says Ian Pitt, chief information officer (CIO) at LogMeIn. "The past year alone has given hackers so many newsworthy events to take advantage of, which has seen ransomware and phishing attacks go through the roof."

While workers sitting in a physical office among their peers can ask for advice if they receive a suspicious email, when they're sat home alone it can be easier to be caught out. The haphazard technology practices installed in the early days of the pandemic made that more complicated, as a single device could be used for work during the day and to keep the family entertained at night.

Rethinking HR

A wholesale employee re-education programme to make people aware of the risks of working from home is vital. This requires strong relationships between the CIO and chief human resources officer (CHRO).

"It's not necessarily in my mind a distinct handoff between one team and the other in this new future of work," says Jacky Cohen, vice president of people and culture at Topia. "We both have shared goals: the CIO wants to have the right technology in place for security and data protection, but also they want to enhance the employee experience. That makes IT's job easier."

Managing distributed workforces is a challenge, says Yvonne Wassenaar, chief executive of automation firm Puppet. "The extremes are much easier, what becomes hard is when there's a blend," she says. While the first wave of the pandemic brought chief marketing officers and CIOs together in an attempt to keep the business promoted and on an even keel, this "new normal" phase requires chief people officers, or HR, and CIOs work together to shore up businesses' working practices and their cyberdefences.

"There's a real pull to bring CIOs and chief people officers together to rethink what's possible with the advent of technology," says Wassenaar.

Cohen is seeing stronger connections built between IT and HR departments in businesses. "I would hope there is already some sort of established foundation," she says. "If there's not, it's just like building any relationship internally: you need to



“There's a real pull to bring CIOs and chief people officers together to rethink what's possible with the advent of technology

establish your shared goal and you need to build trust, and some of that takes time. The foundation of any relationship is understanding each other's business and understanding your motivations."

"That is because the office and ways of working are changing significantly. Workplaces are likely to act more as social hubs that people dip in and out of. That requires technology and HR to more carefully dovetail together in pursuit of the shared goal of business prosperity and making workplaces welcoming, even if they're accessed remotely."

"The experience of the pandemic has shown us we don't need to be at a traditional workplace environment to do our best work," says Jon Grainger, CIO at law firm Slater and Gordon.

Onboarding new staff

A major challenge that requires HR staff and IT staff to work together is the way in which new arrivals to businesses are brought on board during the pandemic. One of the benefits of the new way of working is it allows companies to be braver in who and how they hire. "It opens up a more diverse pool of talent where location is no longer the prerequisite to opportunities," says Grainger. But ensuring recruits feel part of the team is difficult.

"That begins right at the start of the employee life cycle. How do you onboard colleagues and develop a culture with employees? How do you make sure they have the right facilities and right access to equipment, having potentially not met another person in their business face to face? This gives up lots of different challenges as well," says Charlie Knox, director of product and solutions at "people solutions" firm SD Worx.

One of the main aggravators of employee disengagement is poor IT: If people feel they aren't technologically supported to do their job, they quickly decide to stop engaging with the work they're set. For that reason, IT and HR need to not just co-exist, but to build upon each other's work, to improve the employee experience.

This does not mean micromanaging employees, though; it's vital to give them support, but not to be overbearing. Instead, trusting workers, while giving them the information they need to keep themselves and the organisation safe while working online, is important.

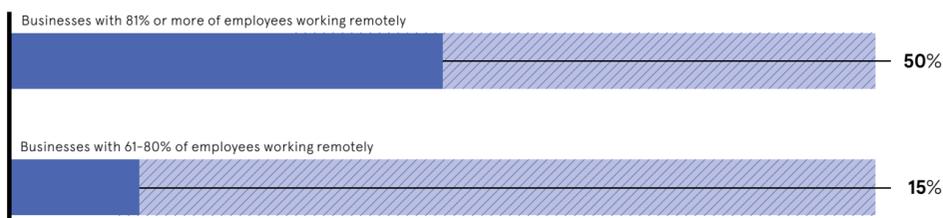
SD Worx had to increase the proportion of its IT systems available online 24/7, says Knox. "We're increasingly seeing systems move into cloud technology," he says. But with this, organisations are seeing massive shifts in the way they work. HR and CIOs need to collaborate to ensure employees feel well supported in tackling new processes. "As an organisation, we rolled out to all our employees an improved security awareness training," Knox explains.

"It starts with awareness and then you start to implement controls, both from a technical perspective to help you with data leakage, making sure you can monitor and configure your systems from moving out of your safe boundaries, and prevent things from moving onto USB sticks."

Successful collaboration between CIOs and HR is essential in the long run and, apart from numerous other business benefits, will avoid IT chaos. ●

INCREASED WORKING FROM HOME MEANS HR AND IT NEED TO WORK MORE CLOSELY TOGETHER

Remote workers during the pandemic



30%

of employees worked remotely part of the time pre-pandemic

41%

of employees are likely to work remotely part of the time post-pandemic

Gartner 2020

THE STATE OF CYBER INCIDENT RESPONSE

Triage, skills and bandwidth challenges



PRIMARY IMPROVEMENT AREAS



51% who work in corporate counsel want to improve notification readiness, compared to...

44% of IT/information security respondents

With privacy regulations getting stricter worldwide, being ready to notify in the event of a privacy breach is crucial to minimise regulatory and reputational damage

AUTOMATION SEEN AS PART OF SOLUTION, WITH ITS OWN OBSTACLES

Plans to automate more incident response processes in the next 12 months



Organisation plans to automate more of its incident response in the next 12 months



Kroll, Red Canary, VMware Carbon Black 2020

For most, cyber incident response remains a challenge

With most organisations receiving more than 100 threat alerts every day and a reduction of endpoint visibility due to the shift to remote work, the ability to quickly detect and confidently respond to cyberthreats has become a difficult challenge for organisations to undertake on their own

In 2015, Adrian Leppard, then City of London police commissioner, made a striking statement: cybercrime had eclipsed the drugs trade in value to organised crime and the police did not have enough resources to tackle it. It's not often a police commissioner's comments make it into the business pages of newspapers, but it was clear organisations of all sizes shared his concerns and, unlike with the drugs trade, they were all potential targets.

Since then, the proliferation of organised crime and get-rich-quick merchants on the internet has accelerated even further, amplified by a global pandemic that has seen fraudsters prying on people working from home. According to Kroll, the corporate investigations and risk consulting firm, national lockdowns have caused ransomware to overtake business email compromise as the principal attack affecting companies.

"Part of this is because there is no business as usual and it is huge money that can be made relatively easily without fear of detection or being caught," says Andrew Beckett, managing director and Europe, Middle East and Africa leader for Kroll's cyber risk practice. "IT estates are now distributed and it's harder to monitor for companies that didn't have strong monitoring in place beforehand. A lot of organisations are using out-of-date, unpatched VPNs and you're not sitting next to a colleague who can just do a quick sanity check for you. 'Does this look right to you?' 'Do you think I should do this?' You don't have that option anymore."

"The pandemic highlighted the flaws in existing incident response processes, as well as the lack of effective endpoint and network monitoring solutions. Companies were caught on the back foot by an unprecedented situation and it has brought to the fore the lack of basic controls, and the lack of process to put it right, because many organisations have struggled for budget to sort this out in a meaningful way through the COVID crisis."

A recent study, conducted by Kroll, VMware Carbon Black and Red Canary among 500 security and legal leaders, found 93 per cent of large organisations have suffered at least one incident that led to a compromise of data over the past 12 months. And when a cyberattack occurs, 92 per cent said they are not completely confident in their ability to identify the root cause.

Security leaders indicate more security issues are likely, with two-thirds

believing their organisation is vulnerable to a cyberattack that could disrupt business or lead to a data breach. Yet their ability to strengthen security faces numerous internal headwinds. Nearly half of respondents said they are not conducting regular security readiness exercises with leadership and that security is actually viewed as a business impediment.

“The attacker has to get lucky once, we have to be right 100 per cent of the time

The research also exposed some discrepancies between infosec teams and corporate counsel, with 52 per cent of the latter saying their organisation lacks readiness to notify in the event of a security breach, compared with 43 per cent of the respondents overall.

"It was not really a surprise to us that 54 per cent of security leaders said their organisation was spending too much time investigating the little incidents and couldn't deal with the big ones," notes Beckett. "What is interesting is seeing the different areas security staff and general counsel worry about. Corporate counsel worries about attribution: who was behind the attack? But much fewer people in security share that concern as they know the difficulties and costs involved in identifying perpetrators."

"It is also interesting to see contrasting views on what is in place already. Over half of corporate counsel were fairly satisfied they had the right to audit their third-party vendors. Yet fewer than 40 per cent of security leaders thought it was in place or felt they had the right to check compliance and security standards being applied by third parties."

Crucially, 55 per cent of organisations said they need to improve the time taken to contain and remediate threats, with the same number wanting to increase automation of the incident response process, yet half lack in-house expertise or technology to do so.

To support this growing need, Kroll has moved from managed detection and response to enhanced detection

and response, and now to next-generation detection and response. Applying enhanced learning to the tooling deployed improves and accelerates the detection of indicators of compromise (IOCs) and the ability to link two or more areas that have been detected on the system quickly builds the bigger picture.

"The ability to quickly detect and then isolate an attack as a way of then getting it off your system is the biggest thing companies are working on at the moment to minimise business interruption," says Beckett. "Our Kroll Responder service deploys endpoint agents to monitor networks and the endpoint. You quickly spot those IOCs or abnormal activities. We then have a team of shift-working analysts working 24/7 to detect those suspicious activities and do the initial triage, backed up by our global team of incident investigation and triage practitioners who analyse and determine what is going on."

Three quarters of organisations already use third parties as part of their incident response process, according to Kroll's study, and it's clear partners will play a key role in providing the economies of scale required for effective monitoring and response. "Third-party partners facilitate the speed and the augmentation of in-house services that companies need, while dedicated monitoring technology gives the second and third-line support expertise to respond around the clock when a major cyberattack takes place," says Beckett.

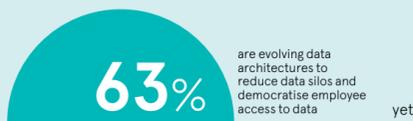
"The attacker has to get lucky once, we have to be right 100 per cent of the time. There is an arms race in terms of the exploitation of new technology between the attackers and defenders. Attackers are using enhanced learning, artificial intelligence and quantum computing to either generate the next-level attack or bypass security. On the defenders' side, we have to quickly identify those tools and techniques in use. We are looking for the zero-day vulnerabilities to identify and patch them before the attacker develops an exploit. Use of our own enhanced learning and artificial intelligence helps us to do that."

For more information please visit kroll.com/cyber

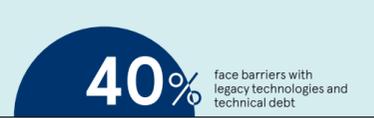
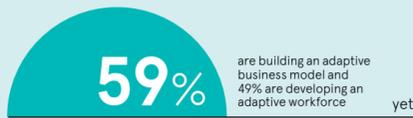


EMPLOYEE EXPERIENCE IS A NEW PRIORITY TO BUILD BUSINESS RESILIENCE

WHAT ARE THE KEY ACTIONS YOUR ORGANISATION IS TAKING TO ACCELERATE YOUR RESPONSE TO BUSINESS AND MARKET CHANGES?



WHAT ARE YOUR ORGANISATION'S GREATEST BARRIERS TO BECOMING AN ADAPTIVE ENTERPRISE?



A commissioned study conducted by Forrester Consulting on behalf of Elastic, February 2021.
Base: 1,000 global IT leaders and decision makers.

CIOs lead on employee experience in a distributed workforce

Heavy reliance on technology to maintain productivity during the coronavirus pandemic has elevated the role of chief information officers, who must now reimagine employee experience for a hybrid world

With the rollout of vaccines and easing coronavirus-related restrictions worldwide, company leadership teams are now looking to the future. Chief information officers (CIOs) are working to reset strategy and rebuild organisational resilience for a post-pandemic age.

For over a year, legions of employees worldwide have been working from home on a full-time basis, thanks in large part to the heroic efforts of IT teams to equip them with the tools, data and support needed to stay productive.

A study by Cardiff and Southampton universities suggests home working in the future is likely to boost rather than reduce productivity. The broadly positive results of the world's largest-ever experiment in remote working raise interesting questions about what the future workplace will look like, but it's evident that enabling remote working will be an ongoing focus for the CIO and their team.

The need for companies to accelerate their response to market changes is a top business priority, according to 1,000 global IT leaders surveyed by Forrester Consulting for a study commissioned by Elastic. Accelerating their shift to digital business and improving customer and employee experience was also in the top five priorities.

More than half the IT leaders surveyed said enabling employees to work flexibly and remotely will improve the adaptiveness of the business. To become more adaptive, 63 per cent said they are evolving their data architectures to reduce data silos and democratise employee access to data. And 60 per cent are actively investing in employee experience to improve the productivity and performance of a distributed workforce.

"Building a resilient organisation that can adapt flexibly and pivot quickly is all about people," says Kim Huffman, vice president of global IT at Elastic, whose solutions for enterprise search, observability and security are built on a single technology stack to enable users to instantly find actionable insights from any type of data in real time and at scale.

"Workforces became distributed almost overnight, which changed the needs of employees and put a lot of pressure on CIOs to ensure employees could continue to collaborate, connect and engage. Many CIOs still had on-premises systems and datacentres, so it rapidly accelerated the move to cloud infrastructure and platforms."

CIOs also had to change their security posture. Millions of people who worked in offices were now remote, so CIOs had to change how they manage their fleet and protect their data. A lot of this ties into the employee experience and

their need to have unfettered access to company systems and information, regardless of where they decide to work, enabling them to play a satisfying, productive role as part of a resilient distributed workforce. Providing all this in a secure, productive and effective manner has been very important for CIOs.

It's not just at the CIO level either, but an entire mindset shift. "I call it the adaptive enterprise," says Huffman, "which means gearing up our organisations and the people within them to be as effective and productive as possible. The fastest way to pivot to business and market changes is for IT leaders to make sure employee experience is at the core of the IT strategy and that means giving them the appropriate data and technology tools to work productively."

With a growing number of organisations keen to be more agile and flexible, Elastic has been working closely with customers to support them through the journey of adapting their employee experiences to remote, distributed working.

The company's solutions provide CIOs with a set of easy-to-use, powerful applications to give their employees a consumer-like search experience to help manage,

“We have a seat at the table and are uniquely positioned now to work with the business and drive the change required to embrace the new world of work”

secure and monitor infrastructure and make data and documents findable.

The Elastic Workplace Search product, in particular, is a one-stop shop solution for the virtual workplace, boosting productivity by enabling users to unify all their content platforms, including Google Drive, Confluence, Slack and Salesforce, into one personalised search experience. And, in response to the growing cyberthreats faced by organisations during the pandemic, Elastic took decisive action to integrate its end-point protection and security features into its free Basic tier.

57%
of IT leaders believe that enabling employees to work flexibly and remotely will improve the adaptiveness of the business

Yet just

13%
are personally goalled on providing the right technology to improve company-wide employee experience

A commissioned study conducted by Forrester Consulting on behalf of Elastic, February 2021.
Base: 1,000 global IT leaders and decision makers.

"Elastic is focused on everything related to searching data," says Huffman. "Search is foundational to a wide variety of experiences, including employee collaboration, which is what makes Workplace Search so valuable.

"Organisations have an abundance of content sources and applications, and looking for information and content can be like finding a needle in a haystack at times. Workplace Search is an effortless, low-cost way to boost employees' productivity and experience by unifying all the content platforms they use, making access to data and information as fast as possible. We have released features in our products that enable organisations to do more at a lower cost, which our research shows many CIOs are having to manage."

Having spent the better part of a year reacting to market changes, CIOs will soon resume a more proactive posture as they take a driving seat in reimagining employee experience for the hybrid ways of working that will emerge post-pandemic. To do that effectively, CIOs should lean into the relationships they've built with other leadership team members, such as heads of human resources. Truly mastering employee experience in a hybrid world will depend on having shared accountability across the executive team.

"CIOs' position has been elevated; we have a seat at the table and are uniquely positioned now to work with the business and drive the change required to embrace the new world of work," Huffman concludes. "We are going to start hearing less about complex digital transformations and more about digital business models where automation and data-driven strategies are employed to drive rapid time-to-value and increased agility to the business."

For more information please visit elastic.co



INTERVIEW

From order taker to partner

In her eight years at Canon Europe, chief information officer **Caroline Serfass** has transformed the role of the IT function. She tells of challenges during the pandemic, what CIOs should be strategising and why a trusted relationship with other senior executives is so important

Jonathan Weinberg

Never before has a year seen businesses globally face such an increased reliance on their IT to keep operations going. But for Caroline Serfass, senior vice president and chief information officer (CIO) at Canon Europe, the experience has brought professional satisfaction, alongside the many challenges.

"Initially the challenge was to make sure we could function. I'm proud that in a couple of weeks, we were able to have the whole company function, all our employees, in quite a productive way. People were very grateful for that," she says. "Then gradually we moved into changing the way we interacted with partners and with customers.

"With all the downsides in the past 12 months, there has been an exciting part for IT departments in the digitalisation of everything, how we work with each other internally and how we drive all of that. We've just leaptfrogged several years."

Serfass joined Canon Europe as CIO in 2013 and is based at its Stockley Park HQ in West London. Having studied engineering in her home country of France, she worked as a software engineer in Brazil, at a medical devices company, and spent many years at pharmaceutical giant Eli Lilly, eventually becoming CIO Europe.

Now at the heart of Canon Europe's digital transformation, she recalls the early days: "I got immersed fairly quickly in quite a major ERP [enterprise resource planning] consolidation initiative, which is actually still going on. It's a long journey, we're consolidating many different platforms and simplifying the company.

"At the same time, there was also quite a big transformation into digital, some of the more customer-facing side of things, and that also started to establish our e-commerce presence."

A quick look at her LinkedIn profile sees Serfass praised for "clear vision" and a "bravery to tackle change", something she and so many of her CIO peers are in the thick of now.

"As a CIO, you have to be in tune with your company and follow the priorities. The

journey is never done. You have to continue to be sharp and suddenly, when you're a big company like us, standardisation is important because it allows you to be faster to evolve and adapt," she says.

Focus on the customer

Serfass acknowledges the CIO role is changing industry-wide into one that is more customer facing. "The history of IT has been very internally focused," she says. "We still have to do that because the whole company relies on technology to run its operations and there's more and more pressure on compliance, data privacy and security. But at the same time, the whole customer agenda is more and more digital. We are picking that up as well.

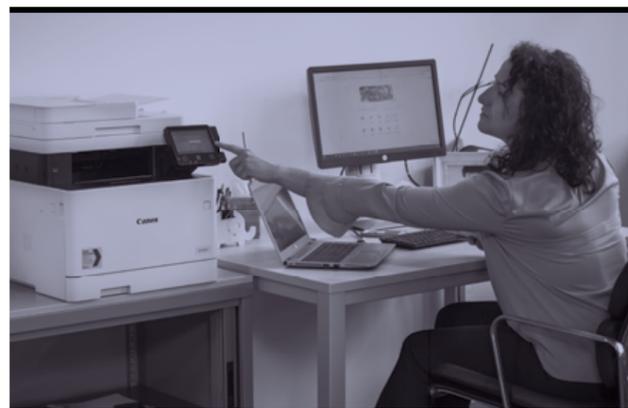
"In the back-end, you have your big ERP, this massive complexity you need to manage to make sure the whole end-to-end works well together, that you are compliant and secure. On the front-end, it's much more about the customer, designing an architecture that is very data driven and can quickly adapt to changes and introduce new capabilities.

"The role of the CIO and IT is crucial in the transformation of companies, especially when it comes to customers. It's always a partnership between the IT function and the business units or marketing or other functions.

"We don't decide what the customer strategy is. But I am part of deciding where we make investments, how we make them, how we drive capabilities. The role is only becoming broader now.

"In the past, we had to build everything ourselves; we don't need to do that anymore. Like the move to the cloud; we don't need to build the infrastructure, it's all there.

"You need to go to Microsoft, you need to go to Oracle, you need to go to SAP. Then you need to make sure it actually works together and it's cost effective. It becomes more of an orchestration role. If I project myself into the future, that is where I think the function is going."



Being a female CIO

Caroline Serfass became the first woman on Canon Europe's senior leadership team when she joined the company, but the number of female chief information officers (CIOs) and other senior executives industry-wide remains very low.

"It will gradually evolve with society and with companies taking a stronger stand for diversity," she says. "It's a company responsibility to make sure processes are such that those possibilities are there.

"But it's also broader, starting with girls and which topics they choose and why they choose them. You have very few women who study technology or engineering."

As a woman in such a male-dominated industry, Serfass realised early on to "just be yourself and it's

OK to be different style wise". She has never felt people treat her less seriously as a female CIO.

"I think that position comes with a certain respect," she adds. "I think you need to maybe accept and adjust to the fact you're just surrounded by a less diverse set of people. I interact mostly with men. That creates dynamics in itself, which you need to adjust yourself to."

Respect and the breaking down of geeky stereotypes has also started to come, finally, due to the pandemic's impact and because so many people have needed their IT function's help. But Serfass is not sure this will last.

She says: "Time will tell, some stereotypes will always take with some people. You have to jump some generations before some of that goes away and everyone becomes a bit more digitally savvy, then it becomes normal."



Working with the CFO and CEO

Serfass's view is the CIO must "make it all work together in a secure, compliant and cost-effective way", working with other areas of the C-suite.

She says: "It has to be a partnership, right? The chief financial officer, in an ideal world, wants the same as the CIO or the chief executive, for the company to be successful. Of course, the CFO will be putting a lot of pressure on cost-savings. That's normal, because technology is quite expensive and, as an IT function and as a CIO, we have a duty to deliver the services or the tools always at the best cost possible.

"But a good CFO will know how far they can go to challenge because in the end it's all about the value that is given to the company by the tools and the technologies we have, from the capabilities we're able to provide."

Trust with the chief executive is fundamental, too. "You have to understand what the CEO's priorities are so the IT function is absolutely in tune with that," she says.

"For the CEO, it's mainly about positioning the function in a strategic way, supporting its importance and then also supporting prioritisation and governance."

One way this works at Canon is via an IT investment committee, chaired by the chief executive and with Serfass as CIO there too, along with the CFO. Whichever business unit or function wants to spend money must present and justify the business case.

She says: "I don't run a profit and loss, the business units do. Everything I spend gets allocated in a transparent way. We explain what they pay for, the services they pay for, in a language they understand.

"We work with them to actually try and get rid of some of the things they are paying for, which we would say are not that useful."

Being a partner

It is this kind of collaboration that has led Serfass to change mindsets around how the CIO and IT function perform, moving her 400 Europe, Middle East and Africa IT employees from what she describes as "order taker to more of a partner".

It is a model other CIOs may do well to follow. She says: "The conversation should be what people need to do and what their priorities are. Then the role of IT is to decide what's the best technology to do that, in line with, maybe, what we already have. Sometimes

CANON EUROPE AT A GLANCE

1957
Established

120
Markets where it operates

\$8bn
Sales in 2019

13,300
People employed



A commissioned study conducted by Forrester Consulting on behalf of Elastic, February 2021.
Base: 1,000 global IT leaders and decision makers.



“As a CIO, it's that blend of liking technology, understanding it and then really realising it's not only about that; it's really about the business agenda and how you work with people

reusing technology, or not using technology at all, might be the right answer.”

Managing external partners is also becoming more crucial for all CIOs and Serfass advises: “You have to set the expectations with your suppliers, you have to establish a partnership. You don't want too many of them, you want a few, and then really make sure they are your extended ecosystem and they understand your objectives.

“You have to keep them sharp and make sure they give you the best people. IT is a people business, it's a skills business, so it's a constant effort to make it all work.”

And sometimes you have to take tough decisions and say “no”, not least to prevent people from doing their own thing with technology or powering on with a pet project, says Serfass.

“That makes you someone who's not always liked, but saying no is part of it. What you say no to defines your strategy, as well as what you say yes to,” she adds.

Serfass feels the future CIO must realise their job “is not done when you've delivered technology”. “It needs to be fit for purpose, people need to use it, you always need to make it better. And it needs to help the bottom line and the end-customer,” she says.

“As a CIO, it's that blend of liking technology, understanding it and then really realising it's not only about that; it's really about the business agenda and how you work with people, how you define your strategy and help them be successful.”

The future CIO

Looking ahead, Serfass sees CIOs having to adapt fast. She says: “The world has changed with the pandemic and you have a lot more criminality online. It is a real threat for big enterprises and compliance and data privacy.

“But at the same time, because so much now relies on technology, and the digital side, also the customer-facing side, there's a challenge of governance.”

It is why she believes the next five years will see CIOs become more transformative, good at stakeholder management, prioritising and partnering, building trust and being able to communicate so people understand.

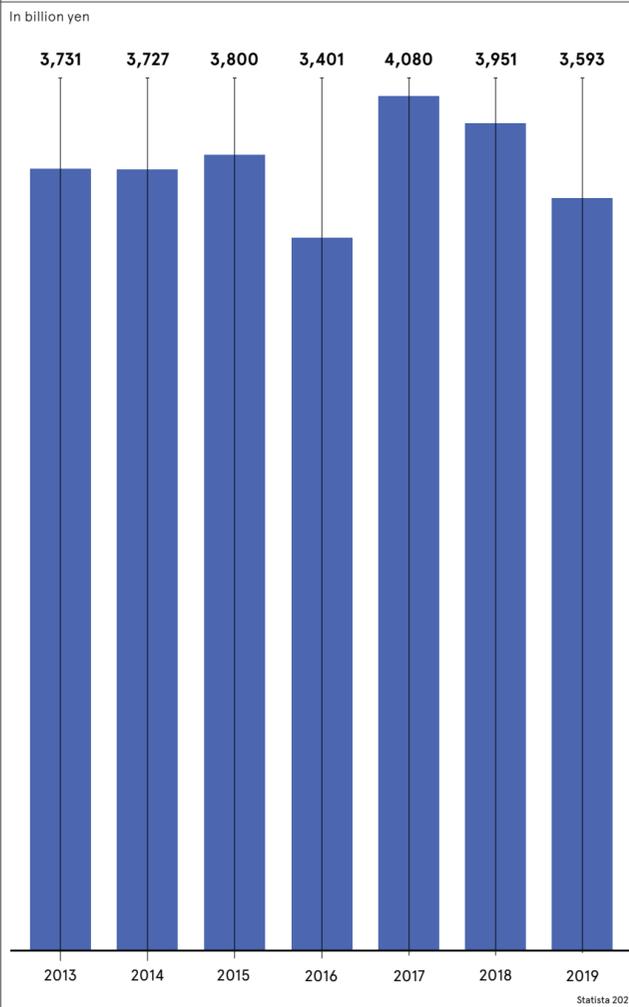
Serfass strongly believes it is not about “technology for the sake of technology”. She explains: “You still want people who understand technology, but it's a style that's more business focused and being part of driving the business agenda, the end-to-end transformation.

“It's really all about adapting and transforming. That's what most companies nowadays expect, versus a style that is more back-office focused, pure technology, or being a pure service provider.”

With analytics and artificial intelligence key to powering digital transformation, both on the business-to-consumer and



CANON NET SALES WORLDWIDE



business-to-business sides, Serfass adds: “People now have it as part of their strategy to be more data driven. We have established an analytics competence centre that really will help enable all of that, with some of the modern technologies like data lakes.

“It is how we work together between the IT function, the tools and the technologies, and the people who understand data, and then jointly create something that's valuable for the company.”

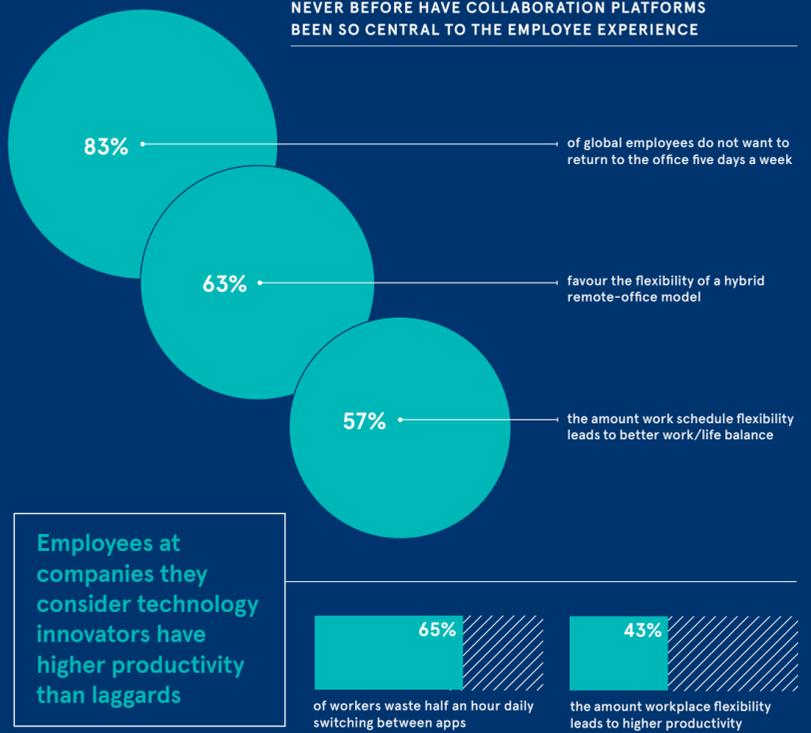
Acknowledging such great technological change will bring job losses, but Serfass

says: “I don't think suddenly there will be no work left, that is a fantasy. But it will be different types of roles, different skills that will be required. This is not a big bang.”

Citing the evolution between standard infrastructure and cloud, she adds: “There are some jobs you just don't need any more, but you do that gradually. You have to have these things on the radar and you have to educate yourself about it. And then you have to try it in one area and see, and you learn and you adjust and you scale.”

THE DATA IS CLEAR: THE 'AGE OF THE OFFICE' IS OVER

NEVER BEFORE HAVE COLLABORATION PLATFORMS BEEN SO CENTRAL TO THE EMPLOYEE EXPERIENCE



Employees at companies they consider technology innovators have higher productivity than laggards

SLACK BY THE NUMBERS



CIO role shifts in hybrid work world

Throughout the coronavirus pandemic, technology has helped enable increasingly connected and productive remote work. Chief information officers now need to drive deeper cultural and technological transformation for effective hybrid work and powerful business growth

At the start of the pandemic, with all office staff suddenly needing to work from home, chief information officers (CIOs) had to quickly transform core technology and security. A year on, having witnessed strong growth in output and innovation opportunities, CIOs must now redefine the experience for employees, customers and partners, enabling effective collaboration, new revenue streams and profitable growth.

A more flexible, hybrid work world is emerging, where employees increasingly choose their preferred mix of home and office time. While traditional workspaces are expected to remain part of the business picture, “in many cases, the old nine-to-five office culture and mentality is over”, says Johann Butting, vice president for Europe, Middle East and Africa at Slack, the messaging app for business that organises conversations into channels for team efficiency and synchronisation.

He adds: “People like the flexibility they've been given in the past 12 months to manage work around childcare and other priorities in the home. Presenteeism is slowly eroding in favour of flexible and efficient work.”

CIOs empowering hybrid work

Employees have expressed strong support for hybrid work and fewer than 12 per cent of knowledge workers want to return full-time to the office post-pandemic. This is according to research by the Future Forum, a consortium that includes Slack, Boston Consulting Group, Stanford University and *Fortune* magazine.

On the other hand, a complete focus on fully remote-based work is not that popular and nearly three quarters of people want the easier sense of belonging from at least some office interaction.

Establishment of hybrid work is only possible with the C-suite's enablement of a nuanced approach to culture, technology and operations. CIOs will need to strike a careful balance of technology and its influence on work styles, unlocking effective hybrid work for existing staff and helping attract future talent.

In terms of systems, leaders will be tasked with ensuring more advanced collaboration technology is in place, particularly given the growing email burden for staff. “With remote work, organisations are finding the traditional email inbox has become an information vacuum, getting ever more complex and excluding important stakeholders,” Butting notes.

Simultaneously, CIOs face the pressing need to shape new technology-based cultures that enable people to use systems well. They will focus on how to protect efficiency: some 64 per

cent of workers who feel aligned to and motivated by core company values are still frustrated operationally, wasting half an hour daily switching between apps, according to research by Slack. CIOs must consider how to cut the time lost searching for information or trying to understand new platforms, providing the resources and training necessary.

With the right culture and technology in place, technology leaders can drive out manual processes, automate efficiencies and design effective workflows. “The role of the CIO will increasingly be about helping to level up the workforce from a tech perspective and enable it to be truly efficient and supported,” says Butting.

“CIOs will need to listen carefully to the changing needs of employees, who want to be happy in the job and able to achieve team results no matter where they work

As part of the focus on culture and tech, a major effort must be made around employee wellbeing. Remote staff are commonly impacted by solitude, while being expected to be logged on for longer hours. “There is no doubt employee wellbeing must be front of mind in these technology-based changes. There must be policies around how collaboration platforms are used for work as well as to communicate with individuals to help support their wellbeing,” he says.

Asynchronous work, in which people across time zones can easily collaborate and share experiences, will also become crucial. “CIOs will need to listen carefully to the changing needs of employees, who want to be happy in the job and able to achieve team results no matter where they work,” says Butting.

In practice

Technology heads at more than 750,000 businesses have already introduced Slack as their “digital headquarters” across offices and homes, increasing productivity and growth. Slack is

enabling them to build a culture of hybrid, asynchronous work, leaving behind the nine-to-five, and replacing complex email thread burdens and siloed productivity with live chat, borderless workflow creation and seamless automation. As a result, they are making projects more efficient, removing manual and complex processes, improving satisfaction and productivity, and strengthening documentation.

Companies are also using the powerful Slack Connect feature to communicate consistently with external partners and clients. As they reimagine customer journeys and related processes, and find new revenue streams for post-pandemic times, the walls between sales, marketing and customer service are dissolving. Across markets, businesses are relying on specialist partners to deliver memorable and engaging experiences to secure sales and deliver long-term growth.

HM Revenue & Customs recently used Slack to help design, implement and deliver a number of digital services that allowed more than 12 million affected businesses and citizens to apply for financial support during the pandemic. Communicating in Slack channels, more than 2,000 people across 60 teams, mostly working from home, were able to collaborate at record speed. This helped HMRC deliver a project that would usually take several months in less than five weeks.

Meanwhile, Gymshark, the fitness community and apparel brand with more than 16 million social media followers, uses Slack to replace siloed email inboxes with collaborative, internal communications, hosting 95 per cent of the company's communications. And the telecoms giant Vodafone has integrated the tool into everyday operations for technology and architecture teams, moving from localised messaging and email threads, to intuitive workflow and knowledge sharing.

The hybrid work world is here to stay. CIOs have a clear responsibility to empower employees with the collaboration tools and related work culture that enable productive, positive and efficient work in all environments.

Learn how to transform your organisation into a more connected, inclusive and flexible workplace of the future by registering for Slack Frontiers, taking place virtually this October





DATA

Why CIOs should be thinking about clean rooms

A “clean room” in which two businesses can share data will help both gain new insights, but could raise serious legal and security questions

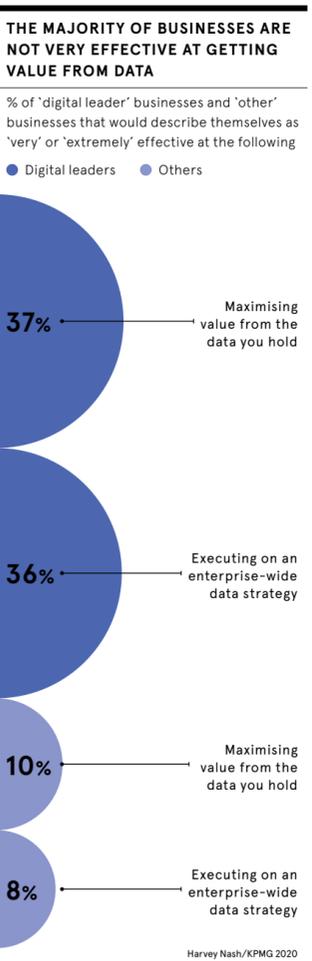
Sean Hargrave

If there is one area of IT that chief information officers (CIOs) will need to master this year, it is so-called clean rooms. These have been used for some time, most notably in digital marketing. The likes of Facebook, Google and Amazon have offered them to some of their largest advertisers in the past few years, but their use was relatively limited, in part due to cost. This is going to change in the year ahead as companies adjust digital marketing plans to cope with the loss of third-party tracking cookies. Businesses realise they need to be more reliant on their own first-party data, but they also need to be able to combine data insights to understand an industry better and improve their marketing performance. Sharing personally identifiable information with another business would mean breaking the General Data Protection Regulation (GDPR), unless the consumer has expressly given permission for their details to be shared. So the race is on to develop a means of allowing two parties to interrogate

one another's data without revealing personal information. Use of clean rooms is likely to be led by advertisers and publishers. Brands have databases of customers and their target audience, while media companies have information on who visits their sites. Combine the two and, without revealing identities, a site would be able to confirm the type of people reached by a campaign and compare it with the brand's desired audience. A case in point comes from the Financial Times, which is actively investigating how it could use clean rooms to build a deeper relationship with brands that goes further than advertising, but would not require personal data to be shared beyond the organisation. Anthony Hitchings, digital advertising operations director at FT.com, says it is early days, but that the company is investigating clean rooms as a means to discover if someone who saw an advert, read a sponsored article or registered for an event fits within an advertiser's target audience list. “We want to build deeper relationships

with partner brands with an offering that includes partner content, webinars, roundtables and events,” he explains. “It will be interesting to understand how the technology progresses and whether clean rooms can be explained to users in such a way that they understand and consent to. Our approach is typically conservative when it comes to user privacy. For that reason, we are digging deeply to understand the technology and implications.” Clean rooms are also likely to gain traction towards the end of the year by helping to get the events industry back up on its feet, according to Chris Sainsbury, founder and managing director of digital marketing agency UX Connections. He is investigating the technology as a means to enable event operators to work with publishers to reach their target audience. Whether it is a new conference with no database to work from or an established event whose data needs refreshing, clean rooms will enable an events business to know where it can find its target market.

“We're working with a new luxury yachting event that has a very specific, affluent target audience, but has no database,” he says. “We're going to be looking at whether a clean room will allow us to ensure we only work with yachting publishers and perhaps other event organisers who have access to that audience. Without this technology sitting between companies, it's going to be hard for companies without a pre-existing list of contacts to build up a new event.” It is likely the publishing, advertising and events industries will lead the way on clean rooms in 2021 because digital marketing has traditionally relied on third-party data. When walls are erected around first-party data, publishers will need to find a way to show advertisers they are opening up their desired audience. However, in the longer term, any businesses that could benefit from comparing data with others are likely to join the trend towards clean rooms. Mike Reid, chief technology officer of Clir Renewables, explains the technology he is developing is starting to allow energy companies to benchmark their performance so they can learn from one another. “Renewable energy companies need to know if their installations are producing as much energy as they should be and when maintenance is likely to be due so they can plan ahead,” he says. “They are reluctant to share data directly, but by pooling it they can find out if, say, a turbine isn't producing the industry average for wind conditions, perhaps because a sensor is faulty and it isn't being directed into the wind properly. The companies are also able to see the mechanical performance of similar turbines so they can get a good idea when maintenance is going to be required.” If this trend is ringing security alarm bells for CIOs, it is for good reason. There are potential legal problems but, according to data privacy lawyer and partner at Linklaters, Georgina Kon, the key is in the technology. There are several options, but she believes the best way to avoid GDPR infringements is to allow computer databases to interrogate one another, possibly by artificial intelligence, but only take away “high-level” learnings that do not reveal any identifiable information. She also cautions that CIOs need to think beyond privacy laws to ensure clean rooms are only built with reputable partners. “Our clients will look much more widely than just the GDPR,” she explains. “They will also be



“There's the issue of how clean the clean room can actually be and who you let in

thinking about issues such as control of the underlying data, confidentiality and professional secrecy.” This need to protect data beyond GDPR and ensure both sets of data are legally compiled and strongly protected is going to be vital, according to Andrew Barratt, managing director of data security business Coalfire. He is actively investigating building clean rooms for clients, but advises businesses to proceed with caution. “Put two sets of data in the same place and you have a potential treasure trove for an intruder to plunder,” he warns. “Then there's the issue of how clean the clean room can actually be. There may not be a problem with your own database. The real issue is who you're going to let into a clean room. You just don't know where someone else has got their data from. It's a little like having a sparkling kitchen floor you let someone else walk on without knowing whether or not their boots are muddy.”

It's not a fair game

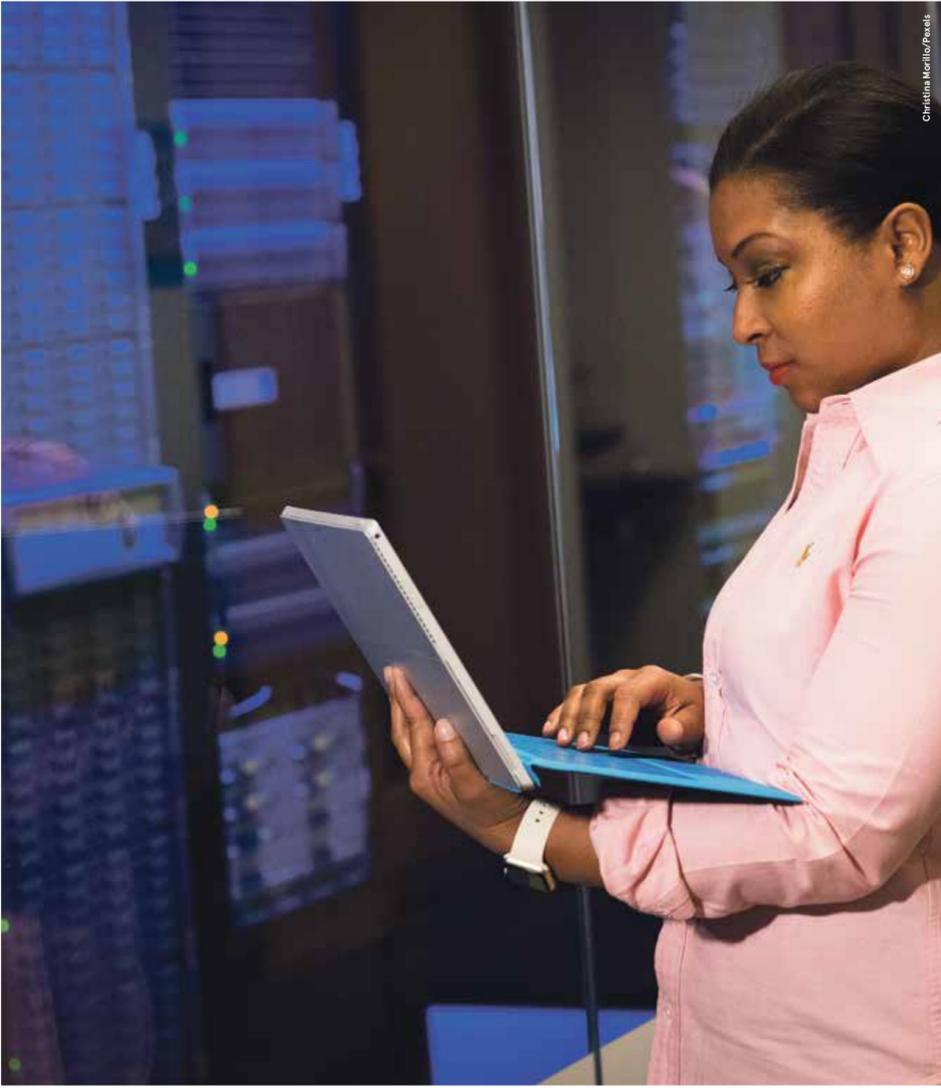
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DIVERSITY

Getting more Black women into IT roles

Race and gender bias, as well as a lack of representation, are among the obstacles Black women face when pursuing a career in IT

Christine Horton

Women, and in particular Black women, are hugely under-represented in the IT industry. Research from the British Computer Society (BCS) shows Black women account for just 0.7 per cent of IT roles, 2.5 times below the level of other professions.

Black British Business Awards released a report with J.P. Morgan in January that identifies “the gross failings of businesses to collectively address and act upon racial disparity in the workplace”.

Afiya Chohollo, director of technical programme management at digital identity firm Onfido, says: “For companies with big pockets and all the ideas to solve the world’s big challenges, it’s not an acceptable excuse to not have Black people and women in your teams, particularly in major cities like London. It’s lazy and negligent and bad for the bottom line.”

“Important, life-impacting applications should not be built by teams that do not represent society.”

One of the key issues is the absence of Black female leaders in the IT sector, which then discourages Black women from pursuing a career in the industry.

“Role models are important. It is always affirming to see someone like you when you walk into a room because dealing with micro-aggressions is more challenging than anything,” says Chohollo.

Dinah Cobbinah is the first Black female partner in KPMG UK’s history. She recognises there are few women in similar positions.

“There aren’t many Black women in senior roles, let alone within IT. But when you start to funnel down in terms of ratios of women in IT roles, there are even fewer Black women within that,” she says.

“If organisations are serious about turning the dial and increasing opportunities

for under-represented groups, things need to be done differently. Change cannot happen overnight, but we all need to build a sustainable pipeline of talent, rethink how and where we source talent, provide the career path and have visible role models. You need to see it to be it.”

The problem starts with recruitment, says Chinonso Izugbokwe, managing director of Get2Talent, a recruitment agency committed to promoting and driving diversity in the hiring process.

Izugbokwe believes racism and gender recruitment stereotypes remain a significant barrier to Black women’s career entry into IT. However, it is also difficult to identify and prevent.

“Recruitment processes and practices can be designed to reduce the role of gender recruitment discrimination, such as making the recruitment process gender neutral, promoting female candidates in their selection or anonymising CVs. The hiring managers and talent acquisition team alike can avoid the negative outcomes associated with gender recruitment stereotypes,” he says.

Izugbokwe adds that lack of recruitment guidance promoting career progression opportunities poses another problem. This puts off Black female candidates as they cannot see future opportunities for development.

There are, however, several initiatives currently underway to encourage more Black women into tech. Coding Black Females has joined forces with the BCS to offer 50 women membership of the BCS. At the same time, Niyu Enterprise and Coding Black Females have partnered to put on a six-month Coding Bootcamp programme for UK Black women aged over 18 who are unemployed or employed with a salary of less than £25,000.

HOST, the Home of Skills & Technology at MediaCityUK, has just launched Skills

“Important, life-impacting applications should not be built by teams that do not represent society

City in Salford. Offering technology bootcamp academies, it says it is committed to fast-tracking 450 technology career starts for women and the Black, Asian and minority ethnic community in the North.

Additionally, the TechUPWomen training programme recently took 100 women from the Midlands and North of England from under-represented communities, with degrees or experience in any subject area, and retrained them in technology. It then gave them the opportunity to interview with a company for an internship, apprenticeship or job.

“There are lots of great initiatives helping to not only upskill women in tech, but also work to change the narrative and dispel industry myths,” says Dr Rashada Harry, enterprise account manager at Amazon Web Services, and founder of Your Future, Your Ambition, which encourages young people to pursue careers in science, technology, engineering and maths.

“This work is critical as organisations and leaders recognise the importance that culturally diverse perspectives bring to businesses, especially in fostering innovation on behalf of customers and ultimately advancing the wider industry.”

The IT skills gap continues to cause problems for organisations, especially with the pandemic forcing organisations to accelerate their cloud migrations faster and digitalise their business processes. But there is now an opportunity for organisations to fill that skills gap, while diversifying their workforce.

Organisations must start by examining how accessible their employment practices are and what barriers to entry exist to candidates of all genders and ethnicities.

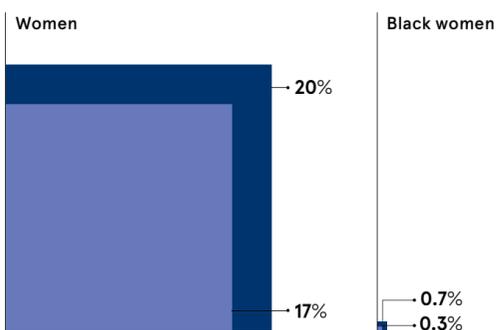
“Being a woman comes with its fair share of challenges, often facing gender discrimination and bias in the workplace,” says Izugbokwe at Get2Talent. “But, if you are a woman of colour, these gender-based challenges are often compounded by obstacles of racism, making it even harder for Black professionals to navigate their way to the top.”

“Organisations need to evaluate their work performance strategy to see if they have barriers in place stopping Black women from reaching roles that are more senior.”

BLACK WOMEN ARE UNDER-REPRESENTED IN IT ROLES

% of each demographic in the specialist IT workforce

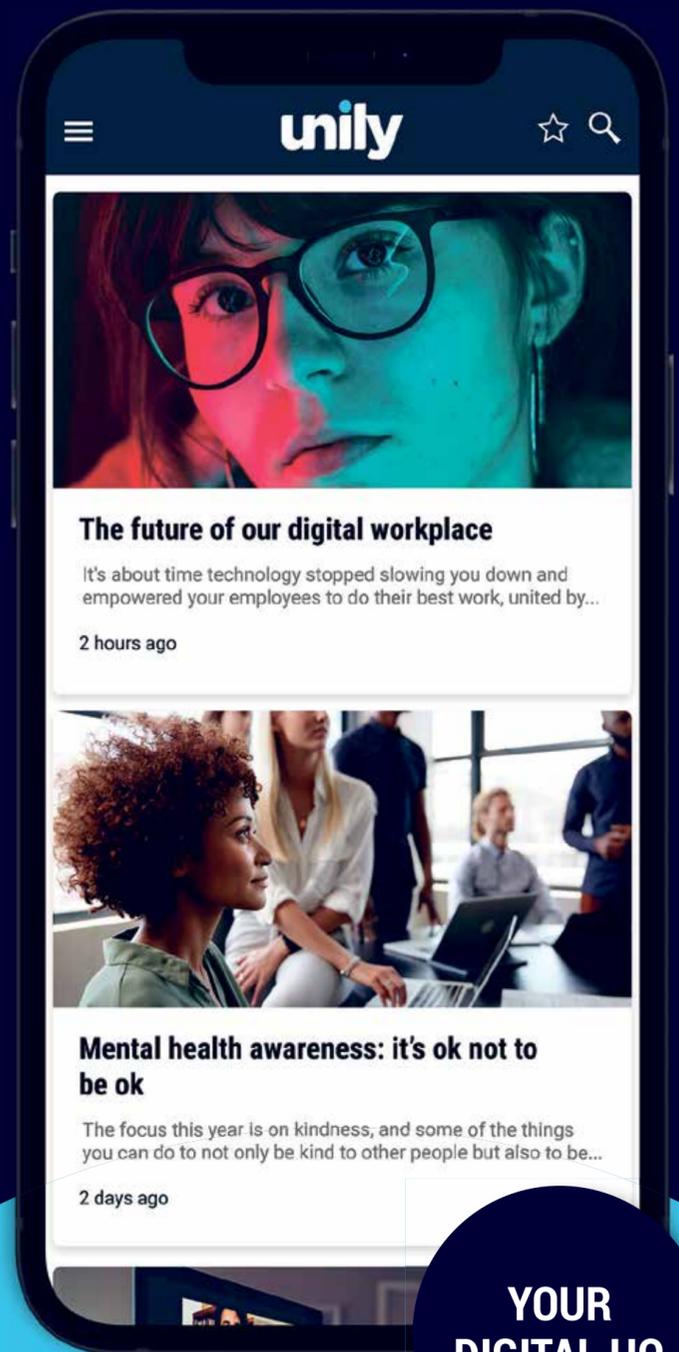
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STRATEGY

Five priorities for CIOs

Trends accelerated by the coronavirus crisis present challenges and opportunities; dealing with both has increased the workload for chief information officers

Oliver Pickup



Regulatory compliance and security

The entry might have been number one in the charts for the past few years, but the mass jump to working away from the office catalysed by lockdown has meant chief information officers (CIOs) must be on top of data management, security and compliance.

"The shift towards remote work and digital operations has meant the information security posture of many businesses, faced with an increasing amount of threats, has had to improve," says Federico Baldo, CIO at Eurotech, a multinational company supplying internet of things solutions.

"Security starts at the top of an organisation and, while chief executives do not need to be security experts,

they do benefit from an accurate understanding of the relevance of security to their organisation. And for many smaller businesses, in particular, it is the CIO's job to lead the internal security programmes."

Caroline Carruthers, chief executive of data strategists Carruthers and Jackson and former chief data officer at Network Rail, says a mindset transformation is required. "My biggest piece of advice for CIOs when it comes to regulatory compliance is they need to stop thinking about security and privacy as a tick-box exercise," she says. "It's essential they see this as a positive opportunity rather than a hurdle to overcome."

There are enormous advantages for the organisations that get compliance right, she insists, from increased customer trust to more secure intellectual property.

Modernise IT infrastructure and systems

COVID has tested the robustness of supply chains, business models and information technology systems alike. In many cases, it exposed worrying vulnerabilities.

"After the immediate response to the pandemic, it allowed the time to look at IT systems and assess whether they remained fit for purpose," says Jean-Sébastien Pelland, deputy managing director of Eland Cables, a global supplier of cables and cable accessories.

"Businesses constantly evolve, requiring IT systems to adapt rather than making wholesale changes, simply due to the pace and perhaps uncertainty of the new avenues. Now is the time to make sure the systems match the business as it stands today."

This chimes with Sharon Mandell, CIO of Juniper Networks, a multinational cybersecurity company. "As we 'cloudify' and 'SaaSify' our entire product line, Juniper also needs to update its IT architecture. We need one that's more nimble, that brings new capabilities and that's more user aware to enable the experience our customers and partners desire throughout their journey with us," she says.

Like many organisations, Juniper has pivoted its offering, in part because



of the pandemic fallout. "Modernising IT is a priority now as many of our systems were built around a business model that delivered hardware, with embedded software only, and traditional technical support and services," adds Mandell.



Ensure real-time visibility of critical data

"The world we're living in is moving faster than ever and organisations relying on data even one week old are behind the curve," warns data strategist Carruthers. "The nature and speed of change in 2021 will make real-time visibility of critical data the single biggest factor in winning new business across almost all industries this year."

She advises that "CIOs need to make sure they have insight into what is going on in their industries in real time" to make accurate predictions.

Rich Murr, CIO at Epicor, a global provider of enterprise resource planning software for the manufacturing, distribution, retail and service industries, agrees. He calls actionable data "the holy grail" of IT. "And sometimes it's seemingly just as difficult to obtain," he says. "The challenge is less about systems and more about the business processes that produce and consume the data."

"CIOs need to educate their business peers, not to sit back and expect clean data to appear magically in their systems, but instead to take strong ownership and execute the hard business process improvement work necessary to create actionable data."



Engage and educate the workforce

On Murr's point of driving education and training, so employees can use all IT systems capabilities and have a good handle on data management, this is another important CIO task. "IT needs to work for the worker," says Tim Christensen, chief technology officer at workforce communications platform SocialChorus.

Football Association CIO Craig Donald says: "Facilitating tech literacy will be central to my role in boosting enjoyment and attainment as the football community comes back to life in 2021. Particularly in non-tech

organisations, CIOs shouldn't just go in there being the mystical gurus of technology. Get a dialogue going and show how tech can directly impact relationships."

Educating staff is particularly challenging for Jo Drake, CIO of The Hut Group, the retail and property company that in September attracted the largest initial public offering on the London Stock Exchange since 2013. "As part of a global business that is expanding at a rapid rate, it's important to have the best team possible and the right talent to grow with us," she says, pointing to several schemes that attract and nurture tech talent.

Make full use of cloud computing

Eurotech CIO Baldo urges businesses to "go full-on cloud". He says: "If the business gross margin is not sensitive to slightly higher costs, there are many more advanced and integrated security capabilities that smaller businesses can leverage through the use of cloud services from AWS, Azure, Google or IBM than could be achieved on-premise, within the same budget." It is the CIO's responsibility to manage the move to the cloud and beyond.

Dr Anjali Subburaj, chief architect of digital commerce at multinational manufacturer Mars, believes businesses can move up a level in this area. "Adoption of cloud computing allows IT teams to focus exclusively on driving business outcomes via their endeavours instead of grappling with IT infrastructure issues," she says.

Once the cloud is embraced, more tech opportunities become accessible. "CIOs should also be prioritising the introduction of an artificial intelligence-embedded approach," Subburaj adds. "This will improve the accuracy and relevancy of outputs, such as supply and demand, and personalised product recommendations to consumers." ●



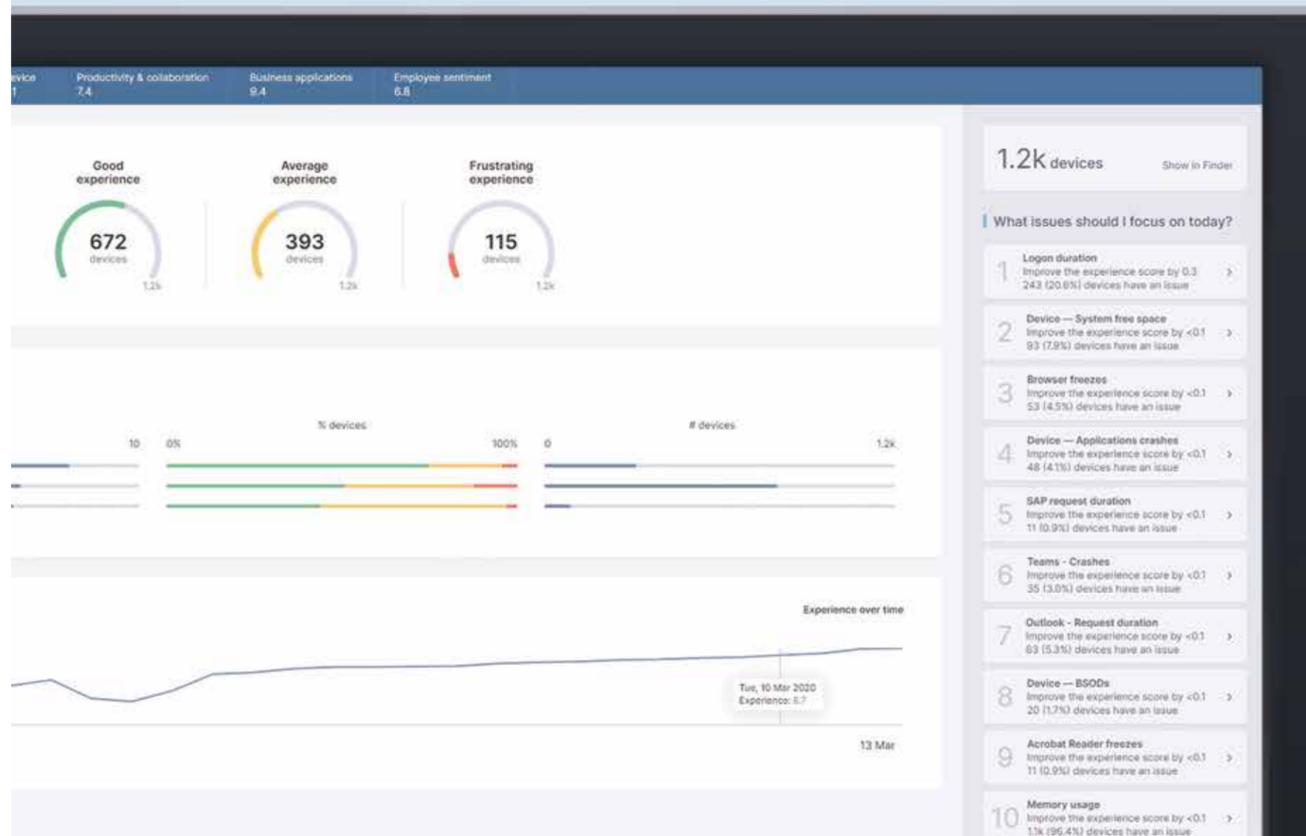
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