DIGITAL TRANSFORMATION

ORGANISATIONAL BEHAVIOUR

How the rise of AI is putting flat management to the test

Will hi-tech firms adopt more hierarchical, authoritarian structures to ensure that their staff will keep working in the best interests of the business rather than protecting their jobs against automation?

Ouida Taaffe

Hi-tech companies have been among the most enthusiastic adopters of ultra-flat management models such as holacracy, whereby fluid teams decide what work must be done, who will do it and even how they'll be rewarded.

The underlying idea of this approach is that a conventional hierarchy would only stifle the output of highly educated tech workers, who have an intrinsic interest in their occupation and are perfectly able to self-manage. They aren't doing menial work; they've been hired for their creative problem-solving skills. It would be impossible for a management team lacking their technical knowledge to understand every aspect of the complex work they do. Indeed, many such professionals would probably resent being subjected to top-down management.

But what happens to that intrinsic interest when automation requires them to start designing away a significant proportion of their work? ChatGPT has hit the headlines because its responses can seem sentient, for instance. The technology has learnt to perform some tasks that, until now, only people could do.

But this quantum leap in artificial intelligence is not necessarily the biggest star in the automation show. For instance, AI-assisted robots have made a breakthrough in what was previously a 'bottleneck skill' – that is, something machines couldn't do. The first few generations of robots, such as those on production lines, performed only programmed tasks in completely predictable environments. But the latest ones can handle objects of varying dimensions in unpredictable orientations with ease.

A study published by the OECD in December 2022 estimates that, on average, "occupations at highest risk of automation account for about 28% of employment" in its member nations. Its research report states that "only" 18% to 27% of the abilities required by high-skilled occupations are "highly automatable". But this still suggests that a significant percentage of what some highly skilled people currently do will one day be done by a machine.

Could that create any tensions in firms that place a high value on self-management? And might they need to change their approach as the march of automation continues?

The most innovative companies are unlikely to grab back the reins, according to Michael Y Lee, assistant professor of organisational behaviour at the Insead business school. These firms typically seek out the most talented people and make the most of that talent, so a flat, decentralised approach will normally suit their requirements, he argues.

"Research shows that the more hierarchical a firm is, the less innovative it will be. Decentralised firms, by contrast, tend to miss fewer of the good left-field ideas," Lee says.

A decentralised approach does have its risks, of course. Such organisations tend to be harder to lead and, while they offer a conducive environment for ideation, that's likely to produce more bad ideas than average as well as more good ones.

"As tech firms automate their processes, there's still a human element that needs steadfast management," stresses Ralph Dangelmaier, global CEO of payments company BlueSnap. "Managers have a responsibility to educate their teams as to why this enhances, rather than replaces, people's jobs."

The self-management model has the potential to benefit any business. For instance, a landmark 1949 study published by the Tavistock Institute of Human Relations revealed how a group of miners in Yorkshire had boosted the productivity of their colliery by changing the way they worked. And, some 40 years later, US firm C&S Wholesale Grocers also showed how letting a group work out how best to meet certain targets could greatly improve outcomes.

"If you shift decision-making down, you get more responsiveness at the local level and the edges," Lee says.

"The flipside is that a self-organised firm may take longer to mobilise support for a major shift."

And a "major shift" is exactly what big tech firms are going through. But the huge number of redundancies across the sector in recent months may not be as damaging to morale within these companies as outsiders might imagine.

"Decentralised organisations tend to have stronger cultures," Lee says. "Their people probably buy into the argument that only the strongest performers should be on board, so they may accept layoffs."

He points out that there are, in any case, two types of self-management. One is more libertarian, placing the greatest value on autonomy and freedom. The other is more cohesive and community-based, valuing citizenship and reciprocity. And, while firms in the latter category tend to be more reluctant to cut jobs, it's not true that a big round of layoffs will necessarily turn those remaining in the business against automation.

Dangelmaier argues that automation offers benefits that staff will embrace, especially where it removes arduous tasks. "In the accounts-receivable process, 25% of employees have reported an increase in morale under a management style based on automation. Increasing automation does not necessarily conflict with team goals. Instead, it uplifts teams."

Lee agrees: "The shift towards automation could make self-management more compelling. It should remove low-knowledge work and leave high-level tasks to humans. That will raise the bar of what it takes to be employed."

This in turn would leave management teams having to deal with organisations full of experts. Such companies would move even further away from a hierarchy, according to Lee. He suggests that this will require business leaders to focus on getting people with specialised expertise to cooperate effectively.

"It's never just one person who creates an innovative product. An effective, collaborative team is where the magic happens," Lee says "How you design the team, choose the right people and create direction is what matters. The design part tends to be neglected in management training."

Warning that the natural place for all of us to be is in a hierarchy, he adds: "Self-management is a bit like the road to enlightenment. There is no destination. It's a continuous process of gaining greater capacity, flexibility and skill."

JOB SATISFACTION AND SECURITY AMONG DIGITAL WORKERS

Share of digital workers worldwide reporting high satisfaction and security, by skill level

● High satisfaction   ● High security

Skill level	High satisfaction	High security
Advanced skills	72%	72%
Intermediate skills	48%	53%
Basic skills	43%	48%

Amazon Web Services, 2022

fizkes via iStock

ChatGPT – AI assistant or robotic replacement?

The chatbot's arrival has caused a stir in several sectors. But is it a true technological breakthrough – and is it coming for your job?

Georgina Fuller

Hardly a day goes by without ChatGPT hitting the headlines. Most of the coverage has focused on the sheer power of this controversial new chatbot and its potential to change the world of work. Is all the hype justified?

ChatGPT was released by OpenAI at the end of November 2022, but it's already making its presence felt in the workplace. That's the view of David Holland, founder, CEO and chief strategist of Exela, a specialist in business process automation. He thinks that, although the technology is far from fully developed, it is proving a transformative tool for certain businesses, especially those in the customer service sector.

"It's already enabling faster communication between customers and employees, saving everybody time," Holland reports.

In a tweet in December, OpenAI's CEO, Sam Altman, offered a strong caveat: "ChatGPT is incredibly limited, but good enough at some things to create a misleading impression of greatness. It's a mistake to be relying on it for anything important right now. It's a preview of progress; we have lots of work to do on robustness and truthfulness."

Despite such clear warnings about its potential to generate inaccurate or unoriginal content, some professional writers have embraced the tool with enthusiasm and are using it daily. One of them is Catherine Gladwyn, an author who also specialises in coaching women seeking to become virtual office assistants.

She has been using ChatGPT to help her write blog updates, social media posts, press pitches and other marketing materials.

"It has enabled me to grab people's attention without having to learn a new skill," Gladwyn says.

She adds that she was recently asked to add some "colour" to her copy for a website she was working with. "I asked ChatGPT to make the text less formal – and it did. I've also asked it to write some copy aimed at certain demographic groups. If it could read things I've written before and emulate my tone of voice, that would be a total game-changer."

Andrew Hall, chief commercial officer at digital outsourcing firm Quantanite, believes that ChatGPT's greatest potential in business lies in its power as a conversational tool.

"This alone has the ability to reshape the future of work," he argues. "The only question is how long it will take people to get used to the idea of generative systems."

In certain departments, such as contact centres, ChatGPT could be integrated with other applications and services, Hall suggests. "It will provide even more personalised and detailed answers without any delays and, ultimately, deliver far better customer service."

James Bore, a consultant specialising in cybersecurity, reports that further significant advances in this field are already being made. But he also stresses the fact that ChatGPT is primarily a language model that "doesn't perform any analysis, so there is no verification of data. It should therefore not be treated as a source of truth."

The fact that more than a third of the world's population still don't have web access is also problematic, according to Holland.

"AI can only work with the data that's available to it. For it to truly offer a more accurate and valued service, the internet itself must become more accessible," he says. "If the data it holds doesn't embrace a wider representation of humanity, the system becomes biased, so any trust in it will be eroded quickly."
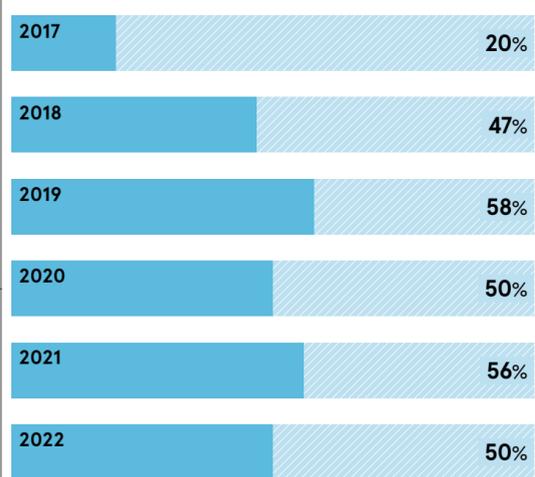
While ChatGPT may be able to perform basic tasks, such as answering questions about company policy, it will be a while before it can handle more complex work, Holland adds.

How concerned should people be that ChatGPT or something like it could replace certain occupations?

Jonathan Stewart, consultant at the Simplicity Specialist consultancy, says that the technology has a long way to go before it has the power to put a large number of jobs at risk.

"Ultimately, this is nothing more than a very clever computer that

> ## The main concern will be about validity. How can a user ensure that the results produced by ChatGPT, even from controlled data, are valid?

THE BUSINESS USE OF ARTIFICIAL INTELLIGENCE GLOBALLY HAS PLATEAUED AT ABOUT HALF OF COMPANIES IN RECENT YEARS

Share of firms reporting the use of AI by at least one function or business unit

Year	Share
2017	20%
2018	47%
2019	58%
2020	50%
2021	56%
2022	50%

McKinsey, 2022

A brief history of artificial intelligence

The origins of artificial intelligence, like so many things, can be found in Greek mythology. The inventor Daedalus was said to be the first mortal to create 'living statues' in bronze that could show emotion and speak.

Although it was in 1950 that Alan Turing devised his famous imitation game to test a machine's ability to display human-like intelligence, the term AI was coined by a group of US computer scientists convened by mathematician John McCarthy in 1955.

In 1961, prolific inventor George Devol created Unimate, the first industrial robot. Its first job was to transport and weld hot die-castings at a General Motors assembly line, relieving the workers of two dangerous tasks.

The first chatbot was invented by Joseph Wiezenbaum in 1966 in the Computer Science and Artificial Intelligence Laboratory at the Massachusetts Institute of Technology. Named Eliza, it provided programmed responses to users.

The creation of the Artificial Linguistic Internet Computer Entity (Alice) by Richard Wallace in 1995 provided the next big breakthrough in this field. Alice was strengthened by natural language processing,

a program that applies algorithmic pattern-matching rules to conversations.

The development of intelligent workplace computers has gathered pace since then. In 2014, a restaurant in Ningbo, China, replaced human waiters with robotic ones. The machines, which cost about £6,000 apiece, can take orders, move heavy items around and even talk to customers.

In 2020, we were introduced to a revolutionary tool called generative pre-trained transformer 3 (GPT-3) a linguistic model based on deep learning technology. But workforce chatbots weren't just becoming more intelligent; they were also becoming more human. Last year, HomeServe USA Corporation, a provider of domestic repair services, introduced an AI-powered virtual agent called Charlie – a 42-year-old biracial mother of two from Ohio who likes jazz. Charlie answers 11,400 calls a day and will even offer advice to her human colleagues.

OpenAI's ChatGPT has caused a sensation since its release in November 2022 because of the seemingly high standard of its responses. This powerful chatbot, which has already been downloaded more than 100 million times, has transformative potential.

predicts what to say next," he says. "No matter how advanced it might get – even if we can use it to enhance our ability to think critically and develop ideas – it won't replace us."

Michael Manoochehri is a former Google engineer and manager who's now CTO of Switchboard, a software developer that he co-founded in 2014. He also believes it's unlikely that the rise of ChatGPT will lead to large-scale redundancies – quite the reverse, in fact.

"I see no reason to believe that this will drastically affect the workforce," Manoochehri says. "I foresee that ChatGPT, and tools like it, will end up creating more employment opportunities for people, even those in non-technical jobs."

Perhaps more worrying are the ethical considerations surrounding generative AI, according to Stewart.

"I am cautious about how this is going to be used and, potentially, abused by others," he says. "A tool

that follows our instructions without question could lead to the wider dissemination of misinformation or, even worse, disinformation."

Manoochehri agrees. "Concerns about ChatGPT's biases and use of intellectual property are real and require scrutiny. As for the many practical applications of the technology with custom training data, the main concern will be about validity," he says. "How can a user ensure that the results produced, even from controlled data, are valid? ChatGPT users will need to develop and practise a whole set of techniques to ensure that the results it provides are trustworthy."

So maybe we need to embrace this quantum leap in AI and treat it as a tool that will enhance, rather than replace, our own efforts. But that's not to say that we can't enjoy experimenting with ChatGPT while it's still a novelty. Maybe I could even have used it to write this article. ●

> The public sector is dogged by a combination of financial and cultural constraints, which have historically frustrated ambitious digital transformation efforts

Mired in the shires

Several problems are impeding the digital transformation of council services nationwide. Barriers to innovation include legal constraints, skills shortages, fiscal limitations and deeply embedded legacy tech

Jonathan Weinberg

In town and county halls across the land, local and regional leaders are grappling with a conundrum. Few of them doubt the power of digital technology to make council services more accessible and cost-efficient, but several limiting factors are combining to hinder progress.

Amit Shanker is an expert in data analytics who has worked for bluechip companies including HSBC, Microsoft and real-estate giant JLL. In January, he joined the London Borough of Newham as deputy CEO and chief digital officer, having led a business transformation project at the Financial Conduct Authority.

He points out that local authorities have a long list of stakeholders to keep happy, from their employees and the communities they serve to central government and the media. They must also satisfy a whole set of legal and procedural requirements. Businesses, meanwhile, can usually focus on satisfying their customers and shareholders.

"Statutory obligations mandate that a public body continues to discharge its services even while redesigning these as part of a digital transformation," Shanker points out. "With councils under increased fiscal pressure after central funding reductions, they're being expected to do more with less. Value for money must be demonstrated."

Many people working on transformation projects in the public sector agree that, while there's no shortage of ambition, they are often hampered by so-called software lock-in. While businesses are prepared to pay a premium for these, Shanker suggests that the public sector tends to hire people on temporary contracts for such work, which often proves to be a false economy.

Working in a newly created role, Shanker has already identified some quick wins, such as straightforward ways to make certain systems more user-friendly for staff. His medium-term plan is to modernise the tech stack and, in the longer run, he envisages making extensive use of the internet of things and digital twins.

He acknowledges that there is much work to do to build a smarter Newham. Public-private partnerships will be required in certain areas to achieve this outcome.

"Unlike businesses, public sector organisations undertaking digital transformations would benefit from an ROI horizon of five, 10, or 15 years, which provides a more convincing impetus to invest up front," Shanker says.

A key factor that's frustrating councils' plans is that the digital skills they need are in great demand and therefore don't come cheap.

what kind of vehicle will be required to remove the load. It helps the council to manage its resources so that rubbish appearing to contain hazardous materials is prioritised.

Quoted in an AWS blog post, Sarah Talbot, leader of the council's emerging technologies team, said she thought that the project's success had changed attitudes among the wider workforce.

"They can see the value of the work – and that our focus and drivers are around helping with real issues in tangible new ways," Talbot explained.

Nonetheless, the digital transformation of the nation's public services has generally been "patchy" to date. So says Simon McNair, head of the UK public sector business of Iron Mountain, an S&P 500 constituent specialising in enterprise information management systems. His company has been working with numerous local authorities in England and Scotland, including Birmingham City Council and the City of Edinburgh Council.

"Digital transformation in public bodies is often behind where it is in private organisations," McNair says, although he adds that the gap is not always as wide as people might imagine.

McNair believes that local authorities should focus their resources on digital transformation where the cost-saving potential or the opportunity to improve the user experience is greatest.

"The public sector is dogged by a combination of financial and cultural constraints, which have historically frustrated ambitious digital transformation efforts," he says. "These include the challenge of legacy paper, which is costly to review and then digitise or destroy."

Adam Walther is head of digital and transformation work at Woking Borough Council, which has been under "significant financial strain". The fact that money is tight is even more reason for the authority to digitally transform itself, given the

cost-efficiencies that could accrue from doing so, he argues.

Walther estimates that only 10% of local government organisations are being truly innovative in this respect. The software lock-in problem is stifling creativity, which is forcing "services to be designed around legislation at best – and archaic software provision at worst".

The pooling of resources across the sector could help to mitigate this and other problems. It's something that the Department for Levelling Up, Housing and Communities is attempting to coordinate, according to Walther.

"We're still duplicating the same processes 350 times for each council, whereas centralised digital teams working on behalf of the whole sector could radically reduce cost and improve delivery," he says.

The transformation parameters are much the same for aspects such as waste collection and the provision of public leisure facilities, but they couldn't be more different when it comes to the council services that cover highly sensitive areas including social care and housing, Walther observes. Investment and implementation here are subject to tighter regulatory constraints, while the needs of vulnerable service users must take priority.
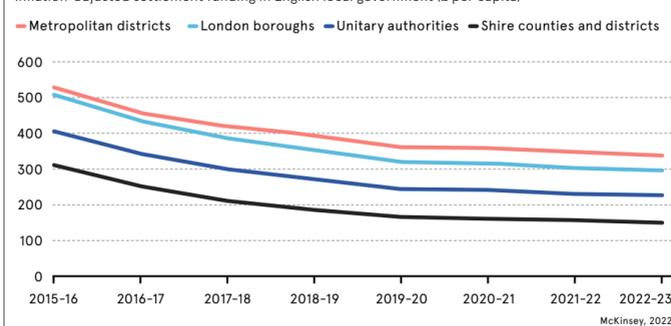
"A common mistake is to view such people as 'customers', which implies choice on their part," he says. "If you don't have the means to pay privately for social care, say, the council is your only option. You are therefore a user, not a customer."

This forces local authorities to pull in "contradictory directions" on digital transformation, argues Walther, who believes that their outsourcing of complex services to third parties "has mostly failed".

Looking ahead, Walther believes that local authorities should prioritise providing "excellent services that are online by default". But he adds: "We're having to be more open and honest about finances and service delivery than ever before." ●

DIFFERENT AUTHORITIES ATTRACT DIFFERENT LEVELS OF CENTRAL FUNDING

Inflation-adjusted settlement funding in English local government (£ per capita)

— Metropolitan districts — London boroughs — Unitary authorities — Shire counties and districts

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
600								
500								
400								
300								
200								
100								
0								

McKinsey, 2022

'Socially conscious organisations must not be left behind'

Grace Boyling explains how 180 Degrees Consulting is helping charities with limited resources to digitally transform themselves

The march of globalisation has made digital transformation a key strategic priority for many enterprises. It allows them to install the latest technology and adopt innovative, future-proof working methods. This not only enables them to carve out new business opportunities; it also boosts their engagement with customers and clients. Ultimately, the exercise is about creating a more reliable and productive working environment through improved connectivity and seamless workflows.

But transforming an organisation – introducing new tech, altering deeply embedded processes and challenging the norms of decision-making – is difficult. It requires specialist skills that even multinational corporations sometimes lack. This is precisely why firms turn to external consultants for help.

Although businesses may be able to afford big corporate consultancy fees, it's an unfortunate reality that charities and other not-for-profit organisations are priced out of this market, almost without exception. We at 180 Degrees Consulting believe that cost should not prevent such enterprises from accessing the skills and services they require to advance their causes.

Our enterprise is the world's largest university-based consultancy firm that caters specifically to the needs of not-for-profit organisations. We provide affordable high-quality consultancy services aimed at enabling socially conscious enterprises to reach their full potential and maximise their impact.

Third sector organisations have become increasingly interested in digitally transforming their operations. Our firm has helped to make that possible for those that would not otherwise have had access to the requisite support.

One success story is that of Seaside Scavenge, a not-for-profit organisation that aims to clear up Australian waterways and promote education about environmental sustainability. With the assistance of 180 Degrees Consulting, the charity moved from paper-based operations to a fully digitalised model, working to integrate its databases in a new online format using a bot created by our consultants. As a result, Seaside Scavenge reduced the time spent on certain key tasks by more than 70%.

This is an example of an organisation using new technology as a means for transformation. But it's important to remember that skills are also a significant component of a digital transformation. For third sector organisations, many of which rely on volunteer workers, the lack of in-house transformational skills is often magnified. We at 180 Degrees Consulting can help them fill those gaps.

We recently assisted Teach for India (TFI), an organisation working towards educational equity among the most disadvantaged children in India. TFI had a fixed marketing strategy that focused mainly on YouTube and Facebook, targeting a certain demographic of users. We undertook a data-based assessment of the organisation's strategy across its digital platforms and directed a complete redesign to help it enhance its reach and cater to new audiences. We provided the expertise needed to overhaul TFI's social media presence and expand it to platforms with a younger user base, such as TikTok and Instagram.

Digital transformation can play a critical role in boosting the performance and impact of organisations. Not-for-profit and socially conscious organisations must not be left behind in the quest for greater efficiency – and cost should not stand in the way of their transformational aspirations. With the aid of consulting services such as ours, not-for-profit organisations and social enterprises can leave all else aside and focus on what's most important: maximising their impact and helping people in need. ●

Grace Boyling
Global PR specialist,
180 Degrees Consulting

How innovation can transform public services

The public sector needs to empower bottom-up innovation and engage with a wider range of suppliers to deliver on its digital ambition

The government recognises the importance of digitally transforming public services. In the Transforming for a Digital Future strategy, for example, there is plenty of desire to deliver better citizen experiences and upskill civil servants. But ambition is one thing; results are another.

The UN E-Government Development Index, which assesses the digital maturity of UN member states, found that between 2016 and 2022 the UK declined from first to 11th place. Yet since 2016, the UK has also ranked within the top five countries in the Global Innovation Index. In other words, there is a disconnect between the wealth of innovation available in the UK and its impact within public services.

PUBLIC exists to forge those connections, working with government to translate policy into product by improving digital strategy, crowding-in startup innovation and building user-centred solutions. "Combining best practice digital delivery, alongside a culture of innovation that incorporates a wider array of suppliers, is critical if the government is to take the next step toward better digital services," says Ryan Shea, managing director at PUBLIC.

It's an urgent task. According to a survey conducted by the Global Government Forum, only 42% of civil servants believe that their department has the tools, resources and skills necessary to use technology to transform public services. As departments are asked to do more with less, adopting new tactics to scale digital initiatives offers the best way to secure value for money.

Empowering change agents across the organisation

The cultural status quo prevents transformative ideas and digital initiatives from scaling to make a real impact on services. But change is possible.

"Staff need to feel empowered to act in a more entrepreneurial way," says Shea. "This is something leaders can support by creating work environments that encourage and reward creative problem solving, and providing good ideas with the runway to develop into impactful solutions."

Some government departments have made significant progress toward this culture of innovation. The Ministry of Defence (MoD), for example, is embedding innovation skills in performance expectations and using a new skills framework to encourage bottom-up innovation.

Last year, PUBLIC was commissioned to run an innovation and leadership programme called the Percy Hobart Fellowship. Participants from defence organisations learnt how to exploit new technologies, accelerate transformation around citizens' needs and apply startup methodologies to create lasting impact. The programme also included secondment into a digital startup to provide those taking part with hands-on experience.

Participants developed their own digital concepts for improving key tasks in the military and have gone on to become leaders of large-scale digital programmes. This has effectively saved the MoD money by reducing the amount it might otherwise have spent on contractors, while also

demonstrating how it can cultivate its talent pool to sustain and improve public services.

Leveraging an ecosystem to deliver value

Along with an 'intrapreneurial' culture inside government, a healthy supplier market is important for driving competition and cost efficiency in government supply chains. Shea believes the government should broaden the list of suppliers it works with, so that smaller firms can play a bigger role in delivering innovative technologies.

"Government has begun to adopt agile working, but digital services are held back by linear procurement. Service owners and commercial teams that engage with the ecosystem of startups, innovators and businesses stand to learn more about where emerging technology can generate value within services," he says.

Shea advises commercial teams to adopt agile and iterative procurement, replacing long and complex tender documentation with demos, prototyping and testing to make their procurement approaches more agile and user-driven.

Challenge-based programmes are another underused commercial tool. "This is a very powerful model for engaging with suppliers," says Shea. "Rather than starting with the thing you want to buy, you start with the problem you want to solve and open that up to a much wider range of solutions."

Ultimately, by treating the wider innovation ecosystem as a strategic asset to support and draw upon, the government stands to improve every aspect of public service delivery.

For more information visit public.io

PUBLIC

Binning the bells and whistles: is 2023 the year of people-first digital transformation?

When it comes to digital transformation strategies, businesses often get wrapped up in big-budget initiatives. But getting it right can mean paring back and putting people first

There are some insights that cannot be discovered by studying sales spreadsheets and consumer data. Sitting on the sofa of an elderly carer, TPXimpact's digital transformation team were getting familiar with how and when users logged on to the website of one of the UK's leading health support charities.

The carer revealed that, because of a dependent partner with constant care needs, they could only access the site to seek help late at night, sitting in the dark, so they didn't wake their loved ones. This point was reaffirmed by other users, who often found elements of the site difficult to navigate quickly in the finite free time they had to gain advice.

While designers on the project were capable of applying video, animation and interactive maps, this particular project required a minimalist, streamlined approach. The criteria were simple but critical: the site must be easy to read and navigate, it mustn't incorporate large files that take time to load, and extensive questionnaires were off the table.

In these scenarios, CMOs and CTOs must collaborate with each other and end users. Otherwise, they risk creating shiny digital expositions that deliver on style but leave substance wanting – something that is wasteful and anti-value during a cost-of-living crisis, says Rebecca Hull, managing director of digital experience at TPXimpact.

A similar people-first approach bore fruit during a digital transformation project for a global development charity, which was struggling to bring in donations during the economic crisis, Hull explains. "We needed to understand why users didn't donate more often. They said: you don't ask us." The site did ask, but the 'donate' button was obscured by an image on the home page.

During a Christmas period where the choice between eating and heating became a stark reality for millions of Britons, charities felt the squeeze at what is usually a peak time for fundraising. TPXimpact helped the charity increase their regular givers and exceed their fundraising targets with a clear, cost-effective strategy. The solution was to make their digital assets work as hard as possible through incremental, rapid changes to combat the harsh economic downturn.

"Not all clients have big budgets, yet a lot of our success happens by moving organisations with little digital maturity onto the next stage through careful steps," she says. "Very often, you cannot do that with a 'big bang' approach."

Why reverse engineering works

For organisations that serve varied user groups and attract millions of online visitors each year, creating clear website design is especially important. Working together on a digital transformation project, TPXimpact helped a major British film and television organisation distil its huge offering into three distinct user journeys: cinema fans eager to catch a show at the IMAX, film geeks keen to study the back catalogue of their favourite film icons, and directors filling out funding applications in the hopes of creating the next Oscar winner.

They then worked to entirely re-configure their website, decluttering content to leave a simpler and clearer interaction.

But that's not just good website design, says Jen Byrne, TPXimpact's managing director of consulting: "In order to create and enable new digital user journeys, you don't just reorganise a website; you start rewiring the whole organisation. You re-navigate that whole process to align those key customer journeys and how services are offered."

Successful digital transformation isn't about dictating to front-line staff or dragging users along with change. Winning strategies mean proper time spent talking to and testing with users and understanding their preferences. It's also vital to allow digital staff to work alongside key workers. TPXimpact did just that when creating new digital visions for Essex County Council and the UK government's Department for Levelling Up, Housing and Communities.

Critically, staff don't want to know they are on a digital maturity journey, and likewise, businesses don't want digital transformation teams to disappear for six weeks and come back with a shiny new product and website, says Byrne.

"We believe in blended teams. You'd walk into a government building and not know who was from TPXimpact and who were civil servants." She continues: "Successful transformation is about culture shift such as reversing waterfall management, where everything comes from the top and trickles down. You have to observe, listen and swap skills."

Embracing AI-enabled transformations

TPXimpact's managing director of data and insights, Andy Ball, previously worked alongside Rotherham United football club. He saw how sharing data seamlessly when transferring targets could help them punch above their financial weight in a fiercely competitive Championship division.

"Often, people are very protective of the data and think if they share it, they might lose power. But actually, sharing data is the power. You're creating a truly transparent bigger picture. You only find success when you share that same vision, one that all departments and users can buy into," says Ball. Applied correctly, transparent, all-access data can transform a public entity, giving it a refreshed social purpose in a changing world.

When Durham County Council wanted to provide access to resources from across the organisation, including records from their library, historic photographs and registry data, Ball's team placed algorithms over the top of the materials to help organise the large bank of content, capturing the richness of the Northeast past and present.

Historic documents could then be linked back to local records and notices, which could then be tied to future documents. Using an advanced cataloguing algorithm enabled the council to surface content that was previously hard to find and collect it in one place to create a more accessible and interactive journey of discovery.

In this instance, AI and technology became a core component of a service's entire purpose. But there is no use applying AI if you don't have the reporting systems to manage it, according to Ball. "Do you know where you are as a company at this place in time? How are staff performing, and who is able to use the new AI and who isn't? Without understanding the wider systems in your company, technology will never work successfully. When you can trust the data and the system, then you can start accelerating," he says.

During economic change, both public and private sectors say users are at the heart of their digital transformations. Still, any changes must be reverse-engineered so the public stays with us. Hull concludes: "The whole world is speeding up, and the internet has amplified this massively. Organisations have realised that if they push as much online as possible, it speeds things up – but can those who are not so digitally literate stay with you?"

For more information, visit tpximpact.com

> "Organisations have realised that if they push as much online as possible, it speeds things up – but can those who are not so digitally literate stay with you?

TPXimpact

Gap analysis: how to conduct a skills audit

While many firms know that they lack digital skills, they need to pinpoint where those deficits exist if they're to solve the problem

> You could spend millions of pounds giving everyone training in Python, but how many people in your organisation actually need to know Python?

Rachel Muller-Heyndyk

It's widely accepted that strong digital skills power successful digital transformations. Although there have been countless reports warning that businesses in the UK are struggling to recruit and retain such skills, it's also becoming clear that many firms don't even know which ones they are most sorely lacking.

A digital skills audit may be a sensible first step for any enterprise, regardless of its size or sector, in ensuring an effective digital transformation. Those that take it are more likely to avoid making costly mistakes further down the line. The exercise could also give them some valuable insights about themselves.

Hiten Sheth is director of research and advisory, HR technology and transformation, at Gartner. He recommends that organisations prioritise finding the skills gaps in their workforce. That starts with developing a thorough understanding of the expertise they do have.

"Organisations must start identifying the skills they have and which ones are missing," says Sheth, who adds that a few factors are making such action advisable. "The macroeconomic changes that we've seen as the pandemic has progressed, along with problems in the supply chain and the high number of people leaving their jobs, have all highlighted the need to find the right talent with the right skills to drive businesses forward."

Even in the most seemingly advanced teams, a digital skills audit will help businesses to gain a full understanding of what they're up against. If you don't have the essential infrastructure in place, it's all too easy to fall behind.

Fay Bordbar, digital skills lead at accounting firm Mazars in the UK, stresses that audits are the key to working out how tuned in your employees are to the fast-changing world of digital tech.

"People don't know that they don't know," she says. "Technology is evolving so quickly. You might think that you've trained everyone on Excel, say, but it could turn out that Microsoft has added new functionality that no one knew about. It's key to develop a framework to plug the gaps and support the personal development of your team."

Traditionally, it's been down to individuals to assess the skills requirements of their teams. Sheth suggests that a more collaborative approach can prompt a firm to think about skills in a more sustainable way. This should help to ensure that its transformation efforts align with the overall needs of the business. Bringing together senior specialists in corporate strategy, talent acquisition, and diversity and inclusion

With such considerations in mind, Mazars has established a partnership with Microsoft's Enterprise Skills Initiative to enable upskilling in Excel, PowerPoint and Outlook, as well as more advanced programs. This can be used in conjunction with the Skills Framework for the Information Age (SFIA), which provides a common global language for digital competency. As the technology and benchmarks for digital skills change continually, the framework is updated regularly by the SFIA Foundation.

It's important to remember that digital skills won't – and shouldn't – look the same for everyone. It's obvious that the combination of skills needed for marketing probably won't be the same for finance, for instance. Gaining an understanding of each profession and the specific digital skills it requires is therefore vital.

A blanket approach to upskilling could prove wasteful, as Bordbar points out. "You could spend millions of pounds giving everyone training in Python," she says, "but how many people in your organisation actually need to know Python?

should mean that any digital skills shortfalls are addressed cohesively. Drawing on the data from these stakeholders can help the business to work out how to close the gaps it has identified. But such collaboration in the auditing process should not only take place at a senior level. Involving employees at all levels should provide deeper insights into what is needed.

Mazars, for instance, has been working on how to deliver training consistently across its various regional operations. The business is looking into offering subtitles and multiple language options, according to Bordbar.

"It's exciting because it allows us to think about how we can remove barriers to digital upskilling," she says. "By modernising our process, we can make it all more available."

The next thing a firm should do is identify and nominate so-called skills disseminators in the workforce. These are employees who can train and coach others in their teams. They don't necessarily have to be the most technically able, but they do require the right interpersonal skills to act as mentors.

Sheth points out that Gartner has found that its skills disseminators help to fulfil a few different needs within audits. When people on the front line deliver digital skills training, there's a stronger feeling of investment in that process. It also means that disseminators can alert the management team to areas in need of improvement.

"It helps everyone in the workforce to see digital audits as something motivational rather than an additional task," he says.

At this stage, it might be clear that auditing is an ongoing process. While it would make sense for a firm to formally assess its digital skills once a year, a workplace culture that prizes consistent feedback and training is just as valuable. In that way, auditing the skills of your people by understanding exactly where they are now may prove far more helpful than predicting what they need in an uncertain future. ●

LEARNING AND DEVELOPMENT IN AID OF TRANSFORMATIONS

Four popular training programmes worldwide, by the proportion of companies providing them for employees in 2022

42% Leading through change

41% Large-scale upskilling or reskilling

30% Digital fluency or transformation

25% Data analysis

Ross Tomei via iStock

Silver linings playbook

The cloud sector's explosive growth phase seems to be over at last. The market's increasing maturity could well be good for customers

Simon Brooke

Between 2009 and 2019 the public cloud computing market grew into a multi-billion-dollar industry. Spending on public cloud infrastructure services is on track to exceed £125bn worldwide, according to research consultancy Statista. But revenue growth in Amazon Web Services (AWS) has been on a downward trend in recent months, while growth in Microsoft's Azure – a star performer for the firm for many years – fell to 35% in Q3 2022 from 50% a year earlier.

The strategy of building cloud capacity and waiting for clients to buy it has been on the decline for some while, according to industry analyst Dean McCarron, president of Mercury Research. In October 2022, he told Reuters: "The 'build more' happened in 2021 and we've been coasting down since then."

But this deceleration has to be put into perspective. The cloud sector's growth has been phenomenal, with companies large and small benefiting from the lower cost and greater flexibility offered by its services. Research published by Eurostat indicates that 41% of all enterprises in the EU used the cloud in 2021, mostly for email and file storage.

Pandemic-induced trends such as the proliferation of remote and hybrid working and the increased digitisation of retail and other services drove many companies towards greater cloud adoption. It's inevitable that such rapid growth should level off at some point. Now that cloud adoption is maturing, business leaders are starting to understand more about its benefits – and its limitations – based on their experience of the technology.

Although the cloud is promoted as an opportunity for cost reduction, some users have discovered that
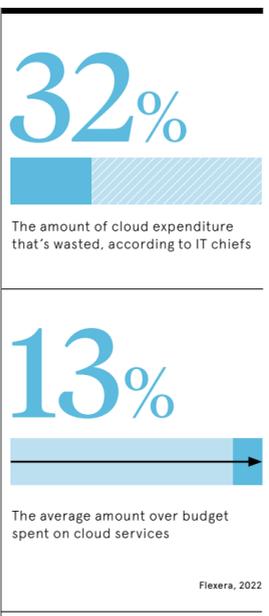
In this period of economic uncertainty, they are also re-examining their spending on cloud services.

"Just as we saw customers accelerate their digital spend during the pandemic, we are now seeing them optimise that spend," said Satya Nadella, Microsoft's chairman and CEO, when the firm presented its December 2022 quarterly results.

In 2022, Aptum, a provider of hybrid multi-cloud managed services, surveyed 400 senior IT managers in the UK and North America about their cloud usage. It found that, while 60% of respondents on average hosted their applications in the cloud, 23% were planning to move some of them back to a data centre in the future.

the savings are not as substantial and immediate as they had hoped.

"We've seen some companies taking a U-turn on cloud after reaching significant scale, realising that the cost doesn't make sense once it hits a certain level of consumption."

So says Matt Barker, president of cloud-native solutions at Venafi, a cybersecurity specialist. He adds: "At that point, which will vary for different companies, the economics start to break and there's a realisation that they can save money by moving applications back. This is being made possible by having a team that can understand how cloud-native technology can be applied on premises."

Companies have generally been relaxed about cloud costs when the going has been good. But their view

has changed as the economic conditions have deteriorated.

Some have also discovered that the cloud has its technical limitations, reports Jags Ramnarayan, chief product officer at cloud database firm MariaDB Corporation. He notes that common databases in the cloud, such as MySQL, are not built for horizontal scaling. They don't take advantage of a range of useful storage options either.

"A new wave of distributed, cloud-native data management software is emerging to address these challenges," Ramnarayan says. "One example is the second-generation databases that run on multiple public clouds while also supporting on-premises workloads."

Like almost any maturing market, the cloud sector is becoming more competitive but also more diverse, specialised and sophisticated. The hyperscalers – as cloud providers such as AWS, Microsoft and Google, among others, have become known – are being challenged by niche providers, according to Ramnarayan.

"Another differentiating feature of these second-generation cloud databases is their ability to deliver innovation, due to expertise and focus, that hyperscaler clouds cannot," he says. "Although the first-generation databases from the hyperscalers did meet core infrastructure needs, the second generation provide smarter solutions with optimised features that reduce overall costs."
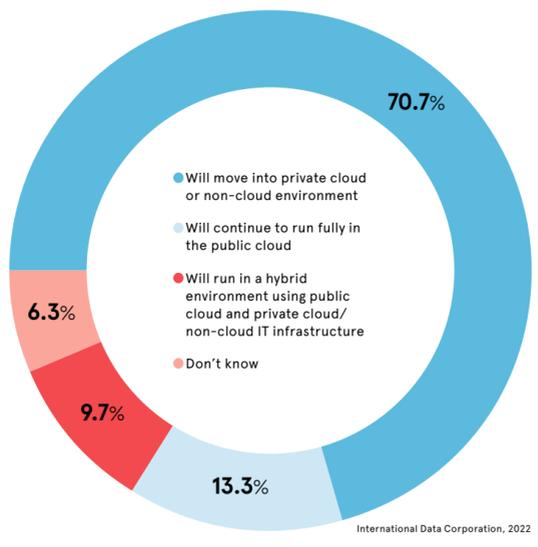
> For new applications, utilising public cloud hosting is typically the best choice. But, if you're running a legacy application that has been in use for 15 or 20 years and is still functioning properly, it may be best to leave it

The cloud's benefits will ensure that it remains relevant to companies of all types and sizes. But it appears that the vast majority are deciding against putting all their eggs in one basket, whether that's in the cloud or on the premises.

According to Cisco Systems' *2022 Global Hybrid Cloud Trends Report:* "Hybrid cloud models that incorporate both on-premises infrastructure and cloud-based resources have become the enterprise norm."

The report also suggests that competition among cloud providers is increasing, with 92% of organisations opting to use more than two public cloud providers.

How should businesses choose between the cloud, an on-premises solution or a hybrid approach? Prashant Ketkar, chief technology and product officer at software developer Alludo, offers the following advice: "For new applications, utilising public cloud hosting is typically the best choice. On the other hand, if you're running a legacy application that has been in use for 15 or 20 years and is still functioning properly, it may be best to leave it as is. What should you do if your application isn't modern or legacy? In such cases, companies should evaluate three key factors: cost, user experience and security."

Many companies will keep certain types of data on the premises for security reasons or concerns about latency – that is, communications delays between the cloud and other platforms.

There are other advantages to adopting a hybrid approach, notes Simon Boreham, regional business lead for northern Europe and emerging markets at Exasol, a specialist in database management software. Retaining an on-premises presence means that, if the firm decides to move to the cloud, it can migrate at its own pace instead of risking a "big-bang approach", which so often results in outages and cost overruns, as well as unhappy clients and employees", he

says. "There's also no guarantee that data sets are compatible with the new cloud system. A solution to this is to consciously adopt a hybrid strategy, planning a staged approach rather than abandoning old systems altogether."

Keeping data both on the premises and in the cloud means firms can be agile and react to shifts in demand, while freeing them to work with data in ways that best suit their specific needs Boreham adds. "A hybrid approach can de-risk and save organisations time and money, because only data that would benefit from being in the cloud is moved there."

Greater competition and a better-informed, more demanding user base means that the market for cloud services will evolve, diversify and mature over the next few years. In many ways that should be good news for customers. ●

32%

The amount of cloud expenditure that's wasted, according to IT chiefs

13%

The average amount over budget spent on cloud services

Flexera, 2022

FIRMS ARE RETHINKING THEIR RELIANCE ON PUBLIC CLOUDS

Share of companies giving the following responses when asked how they intend to organise their public-cloud-based workloads over the next two years

- Will move into private cloud or non-cloud environment — 70.7%
- Will continue to run fully in the public cloud — 13.3%
- Will run in a hybrid environment using public cloud and private cloud/ non-cloud IT infrastructure — 9.7%
- Don't know — 6.3%
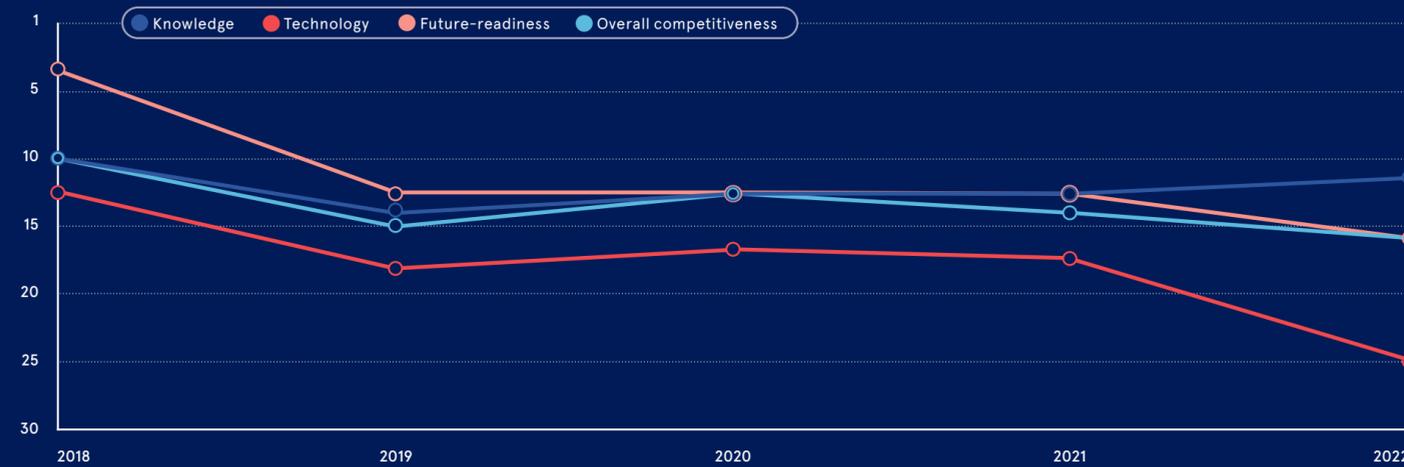
International Data Corporation, 2022

HOW DIGITALLY COMPETITIVE IS THE UK?

While digitalisation is not a zero-sum game, countries that do it better are likely to be more innovative and productive than average, attracting more investment and talent too. Their success in this respect could ultimately make them better places to live and do business. Considering the benefits of digital integration and preparedness, it's valuable for nations to benchmark themselves to understand where they excel and where they may be lagging the pack. Digging into the nuts and bolts of digital competitiveness, how does the UK rank against key comparators around the world?

GLOBAL DIGITAL COMPETITIVENESS

Digital competitiveness ranking and index scores for the UK and the top five most digitally competitive nations worldwide

International Institute for Management Development, 2022

Country	World ranking	Index score out of 100
Denmark	1	100
US	2	99.81
Sweden	3	99.81
Singapore	4	99.48
Switzerland	5	98.23
UK	16	86.45

REGIONAL DIGITAL COMPETITIVENESS

Digital competitiveness ranking and index scores for the UK and the top five most digitally competitive nations in EMEA

International Institute for Management Development, 2022

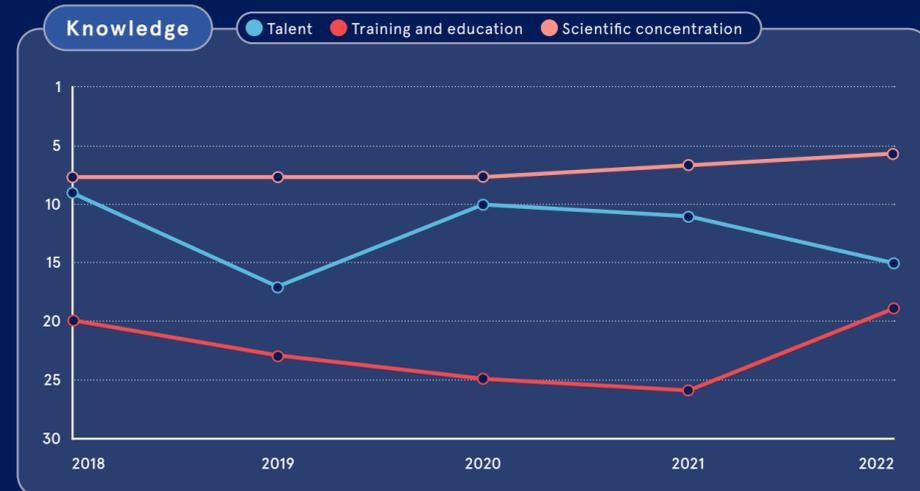| Country	Regional ranking	Index score out of 100
Denmark	1	100
Sweden	2	99.81
Switzerland	3	98.23
Netherlands	4	97.85
Finland	5	96.60
UK	9	86.45

THE UK IS BECOMING LESS DIGITALLY COMPETITIVE

The UK's rankings out of 63 countries on its overall digital competitiveness and three key factors contributing to that total in 2018-22

International Institute for Management Development, 2022

● Knowledge ● Technology ● Future-readiness ● Overall competitiveness

WHERE THE UK IS LEADING AND LAGGING THE WORLD IN THE DIGITAL COMPETITIVENESS STAKES

The areas in which the UK is ranked highest and lowest out of 63 countries across all contributory sub-factors

International Institute for Management Development, 2022

Strengths	Ranking	Sub-factor	Weaknesses	Ranking	Sub-factor
Internet retailing	3	Adaptive attitudes	Entrepreneurial fear of failure	43	Business agility
Net inflow of international students	4	Talent	Smartphone possession	45	Adaptive attitudes
R&D productivity by publication	6	Scientific concentration	Attitudes towards globalisation	45	Adaptive attitudes
Robots in education and R&D	6	Scientific concentration	Privacy protection by law content	46	IT integration
E-participation	6	Adaptive attitudes	Investment in telecoms	50	Capital

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The UK's rankings out of 63 countries on the three sub-factors contributing to its knowledge scores

Knowledge   ● Talent ● Training and education ● Scientific concentration

The UK's rankings out of 63 countries on the three sub-factors contributing to its technology scores

Technology   ● Regulatory framework ● Capital ● Technological framework

The UK's rankings out of 63 countries on the three sub-factors contributing to its future-readiness scores

Future-readiness   ● Adaptive attitudes ● Business agility ● IT integration

Anarchy in the UX – and how to prevent it

Some companies, in their eagerness to adopt the Next Big Technology, risk losing sight of their customers' needs. This is where digital design researchers come into their own

Andy Jones

I n March last year, high-end clothing brands including Dolce & Gabbana, Etro and Tommy Hilfiger placed themselves squarely on the digital front row of the first ever fashion week held in the metaverse. Elsewhere in this immersive 3D realm, JP Morgan opened a banking lounge. Users were able to create avatars of themselves to wander the space, where they could admire a portrait of CEO Jamie Dimon on the wall, along with a list of the firm's achievements. Visitors couldn't do anything as practical as speaking to staff in what was clearly an experimental facility, although they could at least interact with its resident virtual tiger.

Several big businesses invested heavily in digital real estate in 2022, but few people were interested enough to visit their shiny new metaverse properties and see what these had to offer them. By the end of the year, only 9% of Meta's creator-built worlds had ever attracted more than 50 users and the company formerly known as Facebook, which had engineered much of the metaverse, had lost $30bn (£25bn).

Too many companies rushed head first into Web3 ventures such as the metaverse without even having mastered Web2. That's the view of Shama Hyder, founder-CEO of marketing and PR agency Zen Media and the author of *Momentum: how to propel your marketing and transform your brand in the digital age.*

She compares the hype that surrounded the metaverse initially to

the buzz generated by mobile apps during the period when "every firm under the Sun created an app but few actually needed one. Many of them offered very poor website experiences yet they still wanted to build an app. After the novelty wore off, most apps were abandoned, because users simply didn't want to download 'one more app'."

Ashton Snook, senior design and research manager at Vodafone, believes that too many firms became so dazzled by the potential of the metaverse that they lost focus on their customers' needs and even abandoned sound research.

"It is easy for some brands to find themselves disconnected from their end users, given the lines of code, pixels and glass between them," he says. "Understanding your audience's desires, activities and ambitions is paramount. You need to retain their voice as you balance brand personality against technology to produce something of merit."

When Mental health charity Mind decided that it had to revamp its digital platforms, it called on the services of design researchers to inform the process. To give the organisation a better understanding of its users' access needs, they conducted a range of usability tests. Some of these took place in people's homes and others in a mobile lab.

An important factor for Mind was that the participants should use their own devices wherever possible

when using its site. The researchers also invited people with a wide range of access needs and varying levels of confidence in using digital tech to participate in the study. Where necessary, they allowed for the use of assistive software and hardware, such as screen readers, magnification tools, special glasses, gloves and even simulators.

While all these processes offered valuable insights, the keys to the success of this study were having

regular face-to-face contact with users and keeping an open mind, stresses Simon Wissink, account director at Nexer Digital, the design and development agency that collaborated with Mind.

"Typically, we run these sessions on weekly for different clients," he says. "The research is augmented with surveys, in-depth interviews and diary studies to capture user input over a longer period. These are all qualitative methods, but we use

quantitative research too, mainly with analytics tools."

Such regular contact with the designer serves to give the user the smoothest possible experience, says Hyder. She adds that this is something that consumers are coming to expect whether they're engaging with a brand online or on the high street – especially at a time when the line between the digital and physical UXs is blurring.

"Take purchasing cosmetics as an example," Hyder says. "Customers want to walk into a store and buy what they need there, but also go online and have a similar experience, with digital lipstick try-outs and all their preferences saved on the site for next time."

After Nexer Digital (whose other clients include AstraZeneca and the Department for Education), finished its work, Mind saw a growth in user engagement with its campaigns – and an increase of more than 70% in average monthly donations.

To work out exactly how people are using apps and websites, design researchers require a wide range of skills. First and foremost, they need to be excellent communicators, says Christa Simon, user experience researcher at Figma, a cloud-based collaborative design platform.

"As a design researcher, you must be able to ask the right questions, actively listen to the answers and then present your findings clearly and concisely to the rest of the team," she says. "That means you need to be good at building relationships – you're not only researching your users; you're researching stakeholders to ensure that you are all aligned."

Hyder argues that an effective digital researcher will come up with a clear strategic plan as to where a company should engage with the public and how, taking its target market as the starting point. She stresses that its "customers will simply look elsewhere if they experience too much friction".
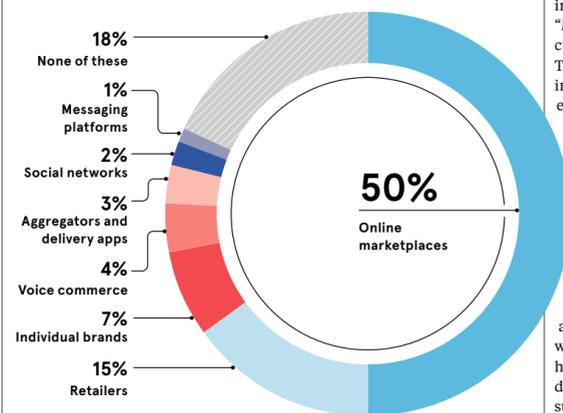
Digital design researchers often have a background in psychology, anthropology or human-computer interaction, notes Simon, who adds: "Most crucially, they need to be curious, creative, and empathetic. They must be able to put themselves in the users' shoes, be willing to experiment with new research techniques and think creatively to solve complex problems."

To meet the demands of a varied customer base, the design team should ideally contain members whose backgrounds reflect those of the users, according to Wissink.

"People of different ages, ethnicities, genders, abilities, classes and education levels will interact with something in different ways," he says. "Including them all in the design and testing stages will ensure that their experiences inform the end product." ●

TAKE A TIP FROM ONLINE MARKETPLACES

Digital purchasing channels providing the best customer experience, according to UK consumers

- 18% None of these
- 1% Messaging platforms
- 2% Social networks
- 3% Aggregators and delivery apps
- 4% Voice commerce
- 7% Individual brands
- 15% Retailers

50% Online marketplaces

Wunderman Thompson, 2022

> "It is easy for some brands to find themselves disconnected from their end users, given the lines of code, pixels and glass between them

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Sky's the limit: how the cloud can bring brighter days

If leaders get their strategy right, cloud technology can help businesses achieve success, remain efficient and relevant, and continue to innovate

I nnovation shouldn't be an occasional extravagance. Forward-thinking companies continually seek ways to grow and evolve, eliminating or automating non-competitive work to free up time and people to do this.

When implemented correctly, a solid cloud migration strategy can be a crucial piece in the transformation puzzle, especially when companies are facing a squeeze. In fact, the initial allure of the cloud for most leaders is financial. Running an in-house data centre requires significant upfront capital investment and this technology is often not even used to capacity. The alternative of outsourcing computing needs to a co-located data centre means being tied down by long-term licences. A study by IDC found that typical data centres are 45% underutilised. So why invest in a resource that won't be used half the time?

In the cloud, businesses only pay for the computing power, data storage and services that they use. They can scale their technology consumption up or down based on business and customer demands rather than according to some arbitrary licensing agreement. "You can do more, for less, more cost-effectively", says Phil Le-Brun, director of enterprise strategy at Amazon Web Services (AWS), the world's most broadly adopted cloud provider.

The Covid-19 pandemic shone a light on the flexibility and affordability of the cloud, says Le-Brun. "Travel companies operating on AWS Cloud could quickly cut consumption and, therefore, costs, while supermarkets could ramp up their ability to handle a large number of customer calls."

However, the benefits of the cloud go beyond cost. And as customer experience becomes a key differentiator for business success in the modern era, having access to the technology that enables excellence in customer service and fulfilment is becoming vital.

The cloud enables businesses to focus on exceeding customer expectations with new insights, products and

services, rather than wasting time and money on running their own data centres or managing complex, expensive licensing deals, says Le-Brun. The real power of the cloud is that it allows companies to innovate at speed.

"In all, AWS Cloud enables businesses to experiment more, at a lower cost and, when they hit that winning idea, to scale it globally in minutes, not months or years," says Le Brun. Offering a global infrastructure accessible to the newest startup through to the largest organisation, AWS allows more experiments to be run to find those magic ideas that will wow customers. Unsuccessful experiments can be shut down and successful ones ushered quickly into customers' hands. This capability to test, pivot or scale allows companies to rapidly turn ideas into action.

"We believe this ability to be agile and fast are universal, sustainable competitive advantages. And I say this from observing what a diverse range of customers such as Formula One, Dunelm, Sainsbury's and Nationwide Building Society are able to do in the cloud," he says.

A good example of this fast innovation is the Amazon Just Walk Out technology that many retailers are now using to rethink the retail experience. Customers can pick up items in-store and leave without the inconvenience of queueing to pay, with the bill coming through their Amazon account. "It was an initiative started with a clear customer need in mind, although the 'how' to achieve it wasn't initially clear," says Le-Brun. "Fast experimentation close to the customer, using the plethora of technology available in the cloud, enabled the team to find a path to achieving this goal."

In a previous role, Le-Brun worked at a fast food chain, where he was corporate vice president for global technology development. Here, he saw firsthand the business advantages of working with AWS Cloud. His company gained the ability to build and scale what became a multi-billion-dollar home delivery business in months. This was facilitated through its cloud

infrastructure, though it was achieved by focusing on its business needs, not the underlying technology or negotiating a multitude of licenses.

A move to the cloud can also help inspire, attract and retain staff. Employees want to work with modern technology that allows them to deliver value faster. Le-Brun points to the dynamic team structures that AWS enables in organisations.

"Within AWS, we organise around what we call two-pizza teams: teams of six to 10 people small enough to be fed with two pizzas, thereby enabling agility. These teams are responsible for delivering not just technology, but an actual business outcome. It's an approach we help our customers adopt, speeding up decision-making, giving talented employees access to the latest cloud-based technology, and allowing them to deliver real, purposeful change to businesses rather than feeling like a small cog in a large machine," he says.

The chances are these employees also expect their employers to recognise their obligation to operate sustainably. Increasingly, forward-looking organisations understand that there is both a moral imperative and business upside to considering the environment in their operations. A 2021 report from 451 Research found that simply moving to the cloud typically brings a five-fold improvement in energy efficiency in EMEA, and 2019 research by the same company found that operating in the cloud can result in up to an 88% smaller carbon footprint. And that is when a company is using the same processing in the cloud as in a regular data centre.

The flexibility in the cloud enables organisations to continue to optimise for performance, cost and environmental impact. AWS, for example, has a carbon footprint tool designed to deliver this level of insight and actionability.

The environmental crisis is just one of the confluence of critical events facing the world in this era of "polycrisis" across the economy, politics, society and climate. And customer preference and fickleness continue to keep businesses on their toes. Leaders need to be multi-dexterous and navigate the world's increasing complexity. They need to simultaneously become more resilient, more effective in using their resources and more focused on growth.

These are still early days for cloud adoption – according to AWS CEO

5x

Moving to the cloud typically brings a five-fold improvement in energy efficiency in EMEA

451 Research, 2021

Adam Selipsky, in 2021 only between 5% and 15% of possible applications resided in the cloud. With so much potential already being realised, there is still a huge opportunity to reinvent every industry.

As Le-Brun says: "The cloud is liberating. It offers employees an opportunity to deliver value and organisations the ability to cost-effectively innovate in previously unimaginable ways. The cloud offers a way for all of us to operate in a more secure, resilient and sustainable way."

> "The cloud offers a way for all of us to operate in a more secure, resilient and sustainable way

Commercial feature

Data centres and IT infrastructure strategy are key to digital transformation

IT infrastructure matters more now than at any point in history. If businesses are to fully implement a digital transformation strategy, they first need to rethink the physicality of data

Data centres, the powerhouses that sit at the heart of the world's boundless computing needs, are often overlooked. Yet they are the unsung heroes of our digital world. As 5G networks, the metaverse, cloud computing, the Internet of Things and remote working are embedded in society, there's an increasing disconnect with the actual physical infrastructure needed to serve these applications.

As businesses transform and become more data-led, their IT infrastructure needs will grow and the nature of their data centre requirements will change as a result. The challenge therefore is delivering IT infrastructure to meet these needs, both in terms of capacity and connectivity. Corporations may have a digital transformation strategy; few have a data centre strategy. This needs to change if they're to remain competitive.

"Every business is a digital business, and as they roll out new innovations, new apps or products, which they want to scale-up and industrialise, then they will encounter bottlenecks in terms of performance and cost unless they really think about the data infrastructure that serves them. Corporations must question the underlying architecture first," says Patrick Lastennet, director for enterprise at Digital Realty, the global provider of cloud- and carrier-neutral data centre, colocation and interconnection solutions.

He adds: "What's changed now is that the computing power must gravitate towards where the data is being generated not the other way around. That's because the volume of data is so large and is growing at such a rate that

it needs to be processed as close to where it originates as possible."

Data cannot be ignored
The term 'data gravity' is increasingly used to describe this concept. Data has the greatest gravitational pull where it has the largest mass. This tends to be where humans congregate in offices and homes and where we consume, as well as generate business, places like mega-cities.

Therefore, the locations where data is handled matters. It means where data centres and their connections are located is also mission critical. Businesses won't be able to transform digitally unless they are processing data in the right place, at the right time, especially as corporations become more data-led and digital first, automating processes and plugging into more data from their supply chains and business ecosystems.

"CIOs and decision-makers need to think hard about where the majority of their data is being produced, how much is going to be generated now and in the future, and where it needs to be processed and stored. Many enterprises are at the start of their digital transformation journey. It is important that this conversation is had right now," says Lastennet.

Data infrastructure spending is under review
Cost management is also a big issue. Cloud computing may provide more computing power and a more innovative space for development teams to operate from, but it can be more costly. However, not every IT workload

needs to operate in this space. There is a fine balance to be had.

"Right now, we are in a very volatile, economic environment, with a great deal of uncertainty; that's why the cost of data-centres is in the crosshairs. A data-centric architecture approach is crucial, one that is built around data flows and understanding the cost and performance attached to each workload and whether it can work in the cloud or outside it."

Data mapping is essential where businesses map out their data needs first, how and where it is stored, and what their data footprint is likely to be in the future. Then, businesses can engage data centre rationalisation, in which they realign and refine their IT resources and networks to meet their needs both operationally and strategically.

If businesses want the best performance at the right cost, they have to question how the underlying physical data infrastructure is going to be delivered. Right now, many multinational companies and larger enterprises are rewiring how they conduct business around the globe, whether it is near- or

friend-shoring, diversifying production lines or rerouting logistics and supply chains post Covid-19.

Businesses are also shifting to where there are greener sources of energy. Legislation and regulation increasingly determine data locations. Enterprises now favour running data centres within jurisdictions where there is geo-political and economic stability, as well as accountability. All of these issues, have huge implications for IT infrastructure and data flows.

Lastennet says: "if you take the long view of five, 10 or 15 years' time a lot is going to change in terms of where your data will originate and how your global data platform should be configured. No business can leave this to chance."

For more, please visit
digitalrealty.co.uk

DIGITAL REALTY.

> **"** CIOs and decision-makers need to think hard about where the majority of their data is being produced, how much is going to be generated now and in the future, and where it needs to be processed and stored

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CORPORATE DATA STRATEGIES ARE EVOLVING TO SUPPORT DATA GRAVITY

44% of companies with revenues over $1bn keep their data in decentralised locations
Digital Realty, 2022

70% of organisations will have multiple data hubs to support data analytics, sharing and governance by 2024
Gartner, 2020

COLOCATION OF COMPANY DATA IS INCREASING

62%
of companies with over $1bn in revenue have more than 50 locations or colocation sites

97%
have at least 21 locations

93%
will add new business points of presence by 2024

71%
will add at least six points of presence

21%
will add more than 10 business points of presence
Digital Realty, 2022

FORMAL DATA STRATEGIES ARE BEING DEVELOPED TO SUPPORT THIS GROWTH IN DATA

31% have a formal data strategy in early adoption stage

44% have a formal data strategy that is actively executed

15% have no formal plans or data strategy

10% have a formal data strategy in the planning stages
Digital Realty, 2022

Q&A

Digital transformation needs to reflect data reality

Séamus Dunne, managing director for UK and Ireland at Digital Realty, discusses how digital and business transformation is demanding more from data and IT architecture

Q How is digital transformation driving change?

A Businesses are becoming more digital and data-led, it means that IT infrastructures are evolving from being cost centres to revenue generators. The demands on the CIO are therefore huge and complex, since IT must increasingly deliver, because it's critical to business growth. IT also needs to be resilient yet agile at the same time, deploying everyday workloads, and new applications at scale. This is no easy task.

Increasingly the cloud has been used to drive new applications, since it offers the firepower that businesses need. However, as the cost of cloud solutions start to eat into revenues, some companies have repatriated workloads into on premise data centres. It is why a hybrid IT approach is increasingly deployed, which marries the best of the cloud with traditional on-site data capabilities. Yet this approach needs significant networking capacity, since data must move effortlessly between workloads. It is also more complex in its architecture, this is why when we build new colocation data centres, we start with networking capabilities involving a plethora of telecom, subsea cable and Internet providers. A connectivity hub is now vital for implementing hybrid IT.

Q What strategy should businesses take?

A If businesses are to capitalise on the hallmarks of digital transformation, including data analytics, artificial intelligence and machine learning, as well as tackle cybersecurity, they need to seriously rethink how their IT infrastructure is configured. Many CIOs know what they need to achieve strategy wise, they just don't know the best way to implement it.

Businesses now need to work with an ecosystem of partners in order to deal with this level of complexity. It's why we are increasingly a conduit for corporations, trying to navigate the issues and develop cost effective solutions. We're seeing a lot of businesses come to us, they know that having their own data centre in the basement of their office is not the future. It's not the answer from a sustainability perspective. They would like to move it into the cloud, but that isn't the whole solution either. They cannot just shift their IT infrastructure to a colocation data centre with a network fabric overnight. What's the right way? This is where corporations need trusted partners to implement change.

> **"** If businesses are to capitalise on the hallmarks of digital transformation, they need to seriously rethink how their IT infrastructure is configured
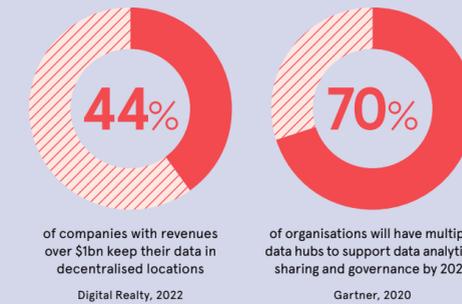
a multi-year journey, it's not even a destination. It's a process that's managed over time. Businesses also need the agility to be able to pivot during that journey. These days the best way to do that involves deploying IT infrastructure in a highly networked, highly connected colocation data centre. This gives corporations the flexibility to access the public cloud, migrate it or repatriate it into data-centres across multiple locations and urban centres, globally.

Future-proofing your IT infrastructure is also vital as businesses transform. This is difficult for CIOs to do on their own cost effectively. At Digital Realty we are also on a journey to build competence and agility, as well as evolve over time. Businesses need to align themselves with ecosystem players that are on a journey to improve.

Q What other issues are businesses dealing with?

A As businesses transform one of the biggest challenges is dealing with the net-zero agenda and reducing carbon emissions. Everyone now wants to know about the sustainability agenda of their suppliers. These days, data centre service providers must have a strong sustainability strategy with results. Through power purchasing agreements or PPAs, we can purchase many megawatts of renewable energy to power our data centres; this underwrites fresh capacity, such as new wind farms. We're now anchor buyers of renewable energy across Europe. Power usage efficiency in data centres is also important. If you run your own data centre on premise it is impossible to run it efficiently, because you cannot utilise it enough. Colocation data centres are better in this regards, since they are optimally configured across many clients.
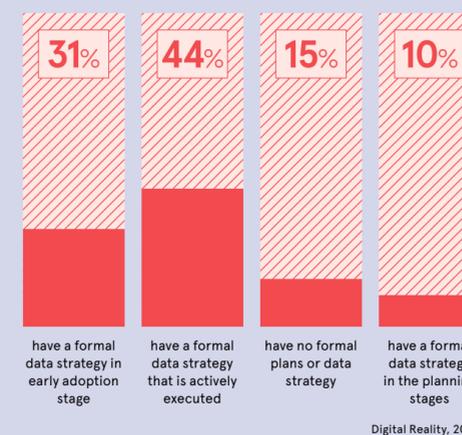
Q What advice would you give to transforming businesses?

A Digital transformation involves a series of transitions and it's

THE FORECAST GROWTH OF CONNECTED VEHICLES

The size of the connected car fleet in selected markets in 2021 and projections for 2025-35 (millions of units)

● US ● EU ● China ● Japan

2021
- 84
- 76
- 68
- 8

2025
- 150
- 151
- 88
- 14

2030
- 217
- 232
- 169
- 27

2035
- 305
- 261
- 252
- 44

Strategy&, PwC, Statista, 2021

FLEET MANAGEMENT

Kings of the (super)highway

Many fleet managers remain doubtful about electric vehicles' sustainability credentials and the lack of charging infrastructure. But the sheer amount of data these products can provide may yet win them round

Simon Brooke

I t's been a fast but bumpy ride for electric vehicles (EVs) so far. Governments have introduced regulations and tax incentives to encourage their use, while Tesla has made them attractive to aspirational consumers. About 10.5 million new EVs (both plug-in hybrid and fully battery powered) were delivered worldwide last year, 55% up on 2021's total, according to the EV-Volumes database. But the industry has yet to provide satisfactory responses to those concerned about the environmental impact of the manufacturing process and the continuing lack of charging infrastructure.
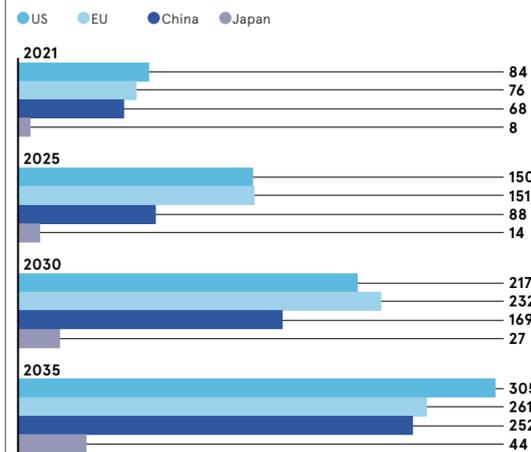
One aspect of the EV revolution that's tended to go under the radar is the access it offers fleet managers to large volumes of accurate, timely data on vehicle usage and driver behaviour. Employers with big fleets have a chance to use this wealth of information to make improvements in areas such as cost-efficiency, sustainability and customer service.

"Data is of critical importance to any fleet manager," says John Randerson, chief technology officer at WNVTech, a manufacturer of zero-emission buses. "In the case of diesel- and petrol-powered vehicles, this could be provided only by overlaying software on to each vehicle. By contrast, the ability to provide data is an integral part of modern EVs, meaning that more of it is available from them."

He continues: "Every fleet manager will have their own specific data requirements, depending on the size of their fleet, its sector and the environment in which it operates. When creating EVs, manufacturers can work with software architects to produce a vehicle that provides data to suit each manager's needs."

An EV can offer a host of information, ranging from the topography of the route it's taking to how smoothly it's being driven. Certainly, this telematics data could solve some of the problems that electrification has been causing many fleet managers.

Philip van der Wilt is a senior vice-president at Samsara, a software developer specialising in the internet of things (IoT). He stresses that, "for the transition to EVs to work, fleet managers need IoT-enabled data to manage their vehicles and plan their operations". Without such data, "the scenes over Christmas of cars queuing for hours at supermarkets and service

stations to be recharged will be nothing compared with the sight of whole fleets left stranded because they've run out of charge".

Van der Wilt points out that fleet managers need such data to plot the most efficient delivery routes based on the range of each vehicle, accounting for variables such as the load it's carrying and the weather it's likely to encounter.

"They need to be able to make intelligent choices about where and when recharging stops should be made – preferably at booked stations during the drivers' scheduled breaks – so that they can get moving again as soon as possible," he says.

Aidan McClean, CEO of all-electric car rental service UFODrive, uses an analogy likening a conventional vehicle to an old analogue telephone and an EV to a smartphone.

"The analogue telephone remains very good at a few things, but the smartphone is the platform to build on," he explains. "Traditional telematics and data enable you to aggregate and track specific data points. Engaging directly with those data points takes a lot of work, but the result is that it helps you to build automated operations and real-time management processes."

For example, a fleet manager can use the cameras on an EV to provide identity verification that allows the driver to access the vehicle, saving time and administration costs, McClean adds. While the EV is being driven, data from the vehicle can be analysed to provide a continually updated prediction of its range. Platforms such as the one run by UFODrive can identify the most cost-efficient charging option en route and automatically book a slot for the vehicle.

Waste management specialist Veolia operates about 200 electric street-cleaning and refuse-collection vehicles. It is integrating different data sets with operational systems such as battery, vehicle and charging infrastructure to make decisions aimed at optimising routes and prolonging its EVs' working lives.

"The data that we monitor has changed from preventive maintenance predictions to proactive performance optimisations, such as integrating next week's weather forecast with our route planning to maximise battery performance in cold conditions," says Veolia's CIO in northern Europe, Stuart Stock. "This is crucial to making electrification a viable long-term decarbonisation solution by achieving significant efficiency savings. The data revolution also affects our people, who are learning new skills to make the transition to EVs as smooth as possible for customers."

Research by Statista indicates that the global EV market's revenue will grow at an average annual rate of 17% between 2023 and 2027, by which time the industry will be worth about £720bn. It's likely that the market for tech that can extract and analyse data from EVs will boom alongside it.

Greg Hanson is a vice-president at Informatica, a specialist in cloud data management, where he leads sales teams in EMEA and Latin America. He says that, in the future, "data from the thousands of sensors on the outside of an EV could be used to predict its battery life and range more accurately, accounting for factors such as the temperature and wind speed. They could also collect information about weather patterns. So, for instance, a car-hire firm with thousands of cars in action nationwide would have valuable real-time meteorological data and could share this aggregated information with interested parties."

Concerns about the lack of charging points and the cost (both financial and ecological) of EVs will continue as the technology develops and the infrastructure is rolled out. Nonetheless, the wealth of actionable information that these vehicles have to offer – which could help firms to achieve crucial cost-efficiencies in tough times – may give sceptical fleet managers the reassurance they require to join the electric revolution. ●

> " For the transition to EVs to work, fleet managers need IoT-enabled data to manage their vehicles and plan their operations

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How can businesses get the most value from AI?

As various high-profile fiascos have demonstrated, getting your data house in order, building guardrails and winning trust are key to effective artificial intelligence deployments

W hen top OpenAI investor Microsoft unleashed a ChatGPT-infused Bing search on the world, it wasn't long before it ran haywire, comparing journalists to Hitler and gaslighting its users. Of course, these deranged tirades were not really an AI going rogue or anything of that sci-fi ilk; the tool is a probabilistic program that, having scraped the internet and all the junk on it as its source, returns answers that it thinks are likely to be correct. The whole episode did, however, highlight the need for a considered approach to AI deployments, especially when they're public-facing. Above all, it demonstrated that AI needs precise use cases informed by good, up-to-date data, and guardrails to ensure it's on the right track.

"Microsoft, Bing, OpenAI and ChatGPT have done the world a favour," comments EMEA field CTO at Databricks, Dael Williamson, "because on the one hand, they've shown us the art of the possible – but they've also shown us the respect we have to give to training data."
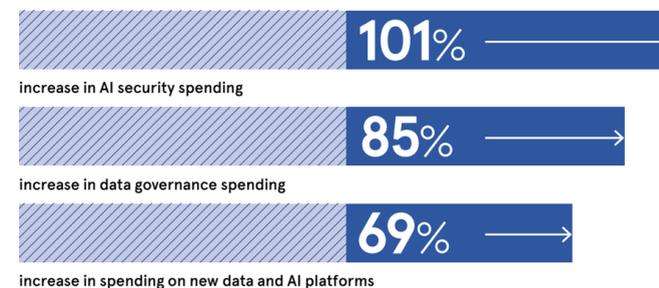
As amusing as the headline-grabbing antics of abusive chatbots might be, what will really be front of mind for

most businesses as they seek to leverage artificial intelligence is how it can help them work smarter and more efficiently. For example, Williamson saw the power of AI in his previous career in proteomics, with simulations for drug discovery that used to take 25 days now taking just a few hours. And across all kinds of industries, businesses are using AI in ways that might not make headlines but are helping them provide better solutions and services. Whether we're aware of it or not, many of us interact with AI on a daily basis – from the navigation tools that plot courses for Uber to Amazon's recommendation engines.

"It all starts with data," says Williamson. "Before businesses can create AI models that actually deliver value, they need to ensure the source data they're building from is accurate, complete, timely and fair."

While the transformational potential of AI really is enormous, and may change the world in unforeseen ways, most businesses will be seeking to use AI to improve their business processes. Decision-makers have certainly noted the potential. In a recent MIT and Databricks technology review survey, CIOs estimated that AI spending over
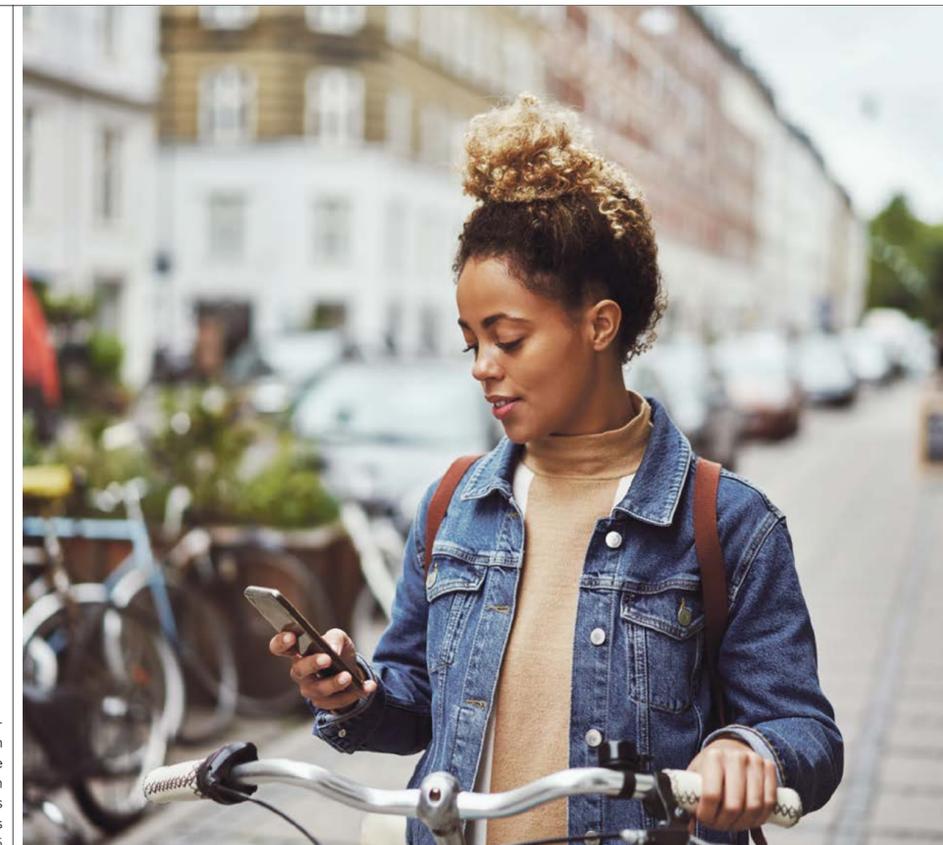
> " Before businesses can create AI models that actually deliver value, they need to ensure the source data they're building from is accurate, complete, timely and fair

the next three years will increase in security by 101%, data governance by 85% and new data and AI platforms by 69%. To ensure that it's AI driving the efficiencies rather than a tail wagging the dog situation where the technology is in search of a problem, businesses will need to first identify the use cases that would actually benefit from these rollouts and, crucially, ensure their data is in order.

Artificial intelligence is only as good as the data that feeds it. Unfortunately for weary data scientists, who spend an astonishing 80% of their time searching for the stuff, most organisations are sitting on incredible treasure troves of data, but it's scattered and hard to find. This is unsurprisingly a barrier to using it effectively, let alone for building effective AI models.

If not hidden down the proverbial sofa, this data is siloed, disconnected and sorted in different databases and formats. In short, staff in department A may not know about the data in department B, and even if they do, they'd struggle to connect it. To get around this, businesses need to unify their

data environment. "We call it the 'lakehouse' concept – think of it as the production and distribution of data and models," says Williamson of this open architecture proposal, "where it covers all the value units you'd typically want to have your data go through."

By unifying all of your business data and applying governance to it, the data becomes much more observable, making it easier to maintain and manage data integrity. With this data organised, accessible and standardised, businesses can pick and choose which data sets are the most appropriate for the model they're building, whether that's large language models, computational models, deep or machine learning, and then build the applications on top of that.

"That's the technology, but the hard bit is change management and trust," says Williamson. No wonder; those aforementioned fearful headlines often frame artificial intelligence as a uniquely disruptive force that's set to play havoc with society as we know it, shredding the social contract and discarding its hapless victims. That's not the case at all – most businesses will simply be attempting to drive efficiencies, using automation to sluice away the most dreary manual tasks, which often don't scale without a little technological assistance.

Take the humble elevator, for example, notes Williamson. For many years, lifts were staffed by an attendant, greeting users and pulling the levers. It took a long while before people trusted these newfangled automated contraptions enough to press a button, but now it's as intuitive as crossing the road. Change can take time, and that's why it's so vital organisations manage it

carefully, rolling out AI deployments with openness and transparency. At the very least, they should work with technology that operates a sort of 'glass box' model – as opposed to an opaque 'black box' with all the inner workings hidden away – so that users understand exactly what is going on and why.

"If you translate it to people, process and technology, technology needs to be simplified and made uncomplicated, while process is the real 'unlock' to create efficiency, build trust and transparency through that," says Williamson.

Today, it's really only the dawn of the AI era, but soon enough it'll become evident that people will largely interact with machines as co-pilots, much the same as other transformative technologies like the printing press and the internet. Communicating this to users is key: "We need transparency, open data and trust," Williamson says, with projects that demonstrate their value to staff outside of data science functions. "The few enable the many – that's the bottom-up way of thinking about it. There also has to be a top-down commitment from the C-suite and all business leaders to work together; a partnership between those two groups, where everyone is rowing in the same direction."

PERCENTAGE LEADERS EXPECT TO INCREASE THEIR AI AND MACHINE LEARNING SPENDING BETWEEN 2022 AND 2025

101% ⟶
increase in AI security spending

85% ⟶
increase in data governance spending

69% ⟶
increase in spending on new data and AI platforms

MIT and Databricks, 2022

To find out more, visit databricks.com

databricks

Hispanolistic via iStock

Needle in a tech stack

The crowded 'digital solutions' market can be a confusing place for buyers. To ensure that they choose the best possible products for their needs, businesses must go back to basics

Rich McEachran

While multinational corporations with deep pockets can afford to throw money at a major project if things aren't going to plan, most firms don't have that luxury. They must be smart with their limited funds, which means that it's crucial to get the technological choices right first time in a digital transformation.

But business leaders are often unsure about where to spend their IT budgets. When the Boston Consulting Group (BCG) surveyed nearly 2,700 senior decision-makers in 13 countries last year, it found that 96% were planning to either maintain or increase investments in digital transformation in 2023, yet 93% admitted that their companies were "struggling to navigate the rapidly growing landscape of disruptive new technologies".

James Lupton is chief technology officer at IT consultancy Cynozure. He believes that "the technology landscape has never been more saturated. It offers everything, from exceptionally niche vendors right through to platforms that promise to do it all. Any company embarking on a digital transformation is going to be spoilt for choice."

With such a huge array of options on offer, it's no wonder that business leaders are struggling to pick out the right ones for their firms. While it may be tempting for them to choose

the flavour of the month because everyone else is doing so, they would be well advised to ignore the latest trends, according to Lupton.

"Businesses suffer in the long run when they base decisions on how fashionable a piece of technology is. This can lead to impulsive choices that aren't the most effective use of budget," he warns.

Another classic mistake to avoid is buying tech because you're familiar with the brand or another company has recommended it. So says Amanda Russo, founder and CEO of Cornerstone Paradigm Consulting, which helps firms in several sectors to streamline their operations.

But before they even look at what's on the market, companies need to determine the root cause of the business issues at play, she stresses. If they don't do that, they're likely to waste their IT budgets on tech that not only fails to solve those problems but also creates new ones.

Shaun Connolly, vice-president of international strategic services at software developer Precisely, agrees. To pinpoint the right technology for a transformation, companies must first be absolutely clear about the processes they need to improve and the outputs that would make the project a success, he says.

Although this may sound basic, Connolly points out that, in his

> ## Businesses suffer in the long run when they base decisions on how fashionable a piece of technology is

experience, "businesses will often implement a new tool without having defined outcomes; without considering how it will align people and processes; and without having effective ways to measure the return on investment".

Lupton stresses the importance of gaining a full understanding of the business's requirements before proceeding any further with a transformation, adding: "Establishing a clear set of selection criteria by which potential tech will be judged should ensure that any decisions are informed and rational."

Conducting an audit of all the IT in use by your company is a good starting point. This exercise should assess the effectiveness of each tool and determine which ones are becoming unfit for purpose.

"You're likely to find a lot of manual processes and tech that hasn't

been stacked, as well as technology that's no longer serving the business," Russo says. "After uncovering what your current state really looks like, then you can start having that conversation about what you need and don't need."

Once the tech stack has been mapped out, the next logical step is to get a handle on data integration, integrity and governance. Your company's ability to manage the various types of operational data it's generating will have a direct bearing on the success of its digital transformation strategy, according to Connolly.

Companies must ensure that there's a steady flow of data across their departments and consider how trustworthy that material is. They can use it to monitor the health of tech stacks, extracting actionable insights from it to inform their decisions.

Once they have determined the root causes of their problems, mapped out their stacks and got a handle on data governance, companies are in the best position to go shopping for tech.

Just over half of the respondents to the BCG survey said that they were the sole decision-makers in their company when it came to

buying IT, while just over a third said they were part of a committee.

Lupton believes it's a good idea for purchasing decision-makers to consult other functional leaders during this process, so that they can understand their priorities. On the other hand, while a digital transformation will require the backing of several stakeholders, including external ones, listening to too many voices could prove disruptive. The final call is generally best left to the senior IT experts whose task will be to work with the new tech and keep on top of data governance.

A significant proportion of boards will be apprehensive about making radical changes involving new IT, especially when the economic outlook is poor. They could therefore be unwilling to allocate significant sums to a digital transformation. If this is the case, it may be worth starting on a smaller scale and focusing on a manageable process that clearly needs improving. Although there is nothing wrong with testing the water this way, it's still important to think big and plan for the long term, Lupton stresses.

Your firm's requirements will inevitably change over time, he says, which means that your chosen tech "needs to be scalable enough to grow in tandem with the business".

With this in mind, companies must weigh up the pros and cons of monolithic and modular approaches. The former may seem the more straightforward option, but it can prove costlier when the time comes to replace that tech. By contrast, a modular approach makes upgrading and replacing systems easier.

Lupton uses a motoring analogy to distinguish the two approaches. "Think of your business like a car: if it needs a new set of tyres, you don't want to have to replace the whole vehicle, as you would with a monolithic solution. You merely want to change the tyres – that is, a modular solution."

The final stage, after buying the right combination of technologies, is implementation. This process is far from straightforward, of course, with 84% of respondents to the BCG survey complaining of poor coordination among vendors.

"Engaging with specialists who can help you to navigate that market can save you time and help you to avoid pitfalls," Lupton says.

Digital transformation is a constant process, rather than a one-off project. The right partner, he adds, will help you to extract maximum value from the new tech you've chosen throughout its useful life – until it's time to shop around again. ●

60%

of business decision-makers are planning to increase investments in digital transformation in 2023

Boston Consulting Group, 2022

But

93%

are struggling to navigate the fast-changing landscape of disruptive new technology

Boston Consulting Group, 2022

50%

of business decision-makers consider advanced AI to be the most transformative business technology for the future

Boston Consulting Group, 2022

> ## Think of your business like a car: if it needs a new set of tyres, you don't want to have to replace the whole vehicle

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Q&A
Embedding resilience in F&A

Companies that harness robust and comprehensive data to make rapid, intelligent decisions will be in a stronger position to adapt as the economy wavers, explains **Mike Polaha**, senior vice-president of finance solutions and technology, BlackLine

Q What are the key challenges CFOs face in 2023?

A For many businesses, market instability is adding more uncertainty to an already challenging and unpredictable global business environment. Organisations must carefully consider how they can respond and remain competitive, agile and resilient.

In our recent survey, CFOs identified the two biggest challenges facing them this year as increasing scrutiny and providing accurate data quickly enough to respond to market changes. 61% added that real-time visibility of finances would be a must for business survival next year as the external economic environment creates more demand for CFOs to provide visibility over important financial metrics.

But we also know that there is a serious lack of confidence in the numbers that are used to make crucial business decisions.

In 2018, 71% of C-suite respondents completely trusted the accuracy of their financial data compared to just 38% of finance and accounting (F&A) professionals. By contrast, our most recent survey found that C-suite trust was 58%, with F&A confidence at 45%. This suggests that many CFOs could be making decisions or providing recommendations based on out-of-date or inaccurate financial information - something that must be urgently addressed.

Q How can they balance growth and cost efficiency in the current economic climate?

A Companies are torn between pursuing growth and achieving cost efficiency. 55% of CEO respondents are worried their organisation will face higher costs as interest rates continue to rise. A further 45% are concerned customers and prospects will spend less.

At a time when many are looking to drive out costs, investing in the right tools might feel counterintuitive. But 60% of organisations want to implement or scale automation solutions as a way to reduce costs long term, while 59% plan to do the same to improve working capital. There's real value there.

Q How can organisations gain better control and visibility of their financial data, processes and working capital?

A Technology remains an important part of the solution. Although it can't remove economic uncertainty, it allows companies to become more efficient, reduce errors in financial data and provide the visibility that allows them to make more informed decisions.

Many organisations have automated areas such as accounts payable to improve efficiency, but the prevalence of manual, repetitive processes in other areas poses serious issues. And unprecedented demands on F&A are also putting unsustainable pressure on people, processes and technology.

Accounting teams are being pushed to close their books faster, optimise working capital and improve operational efficiency while continuing to deliver real-time information to their business partners. Often, they're dealing with a range of disparate solutions, requiring them to process and analyse disconnected data and turn it into valuable business intelligence.

Q What digital transformation strategies should CFOs deploy in response to increasingly complex risks?

A When combating economic headwinds, real-time access to financial data helps expedite decision-making and gives F&A professionals more time to focus on valuable work. Another example is applying payments to customer accounts quickly and accurately. This is one of the fastest ways to get cash into your business. Manual processes slow things down considerably and mean that cash is trapped on balance sheets rather than being put to work.

Additionally, automation and the latest cloud-based software provide real-time reporting on status and action items, enabling staff to stay informed of risks, audits, issues and remediation activities or to address specific controls, procedures and assignments.

Manual work is also making existing roles unattractive for good candidates and hindering skills development. It can often be unnecessarily time-consuming, impacting opportunities to learn new skills. But through digital transformation and automation, more time can be freed up for development, enabling F&A talent to focus on the value-add work.

Q How can financial automation software be used to transform finance and accounting operations?

A Financial accounting is a key area for delivering transformation. From month-end close to reconciliation processes and beyond, automation can free up accountants to focus on more valuable activities. Instead of simply crunching the numbers and identifying anomalies, they can truly understand them.

> ## When combating economic headwinds, real-time access to financial data helps expedite decision-making

For more information visit blackline.com

BLACKLINE

CORPORATE GOVERNANCE

Why the boardroom market for marketers is heating up

Many firms are seeking to appoint non-executive directors with a deep understanding of the behavioural aspects of digital transformations. Seasoned marketing professionals seem to be a perfect fit for such roles

Matthew Valentine

It's become widely accepted in business that a successful digital transformation is not just about the smooth implementation of powerful new systems and processes. It's also about whether such a change will truly benefit the humans – chiefly, the customers – it will affect. With this in mind, companies are seeking non-executive directors (NEDs) with very specific 'human skills' to advise them as they work through their transformation projects. In many cases, senior marketing professionals possess such skills.

Mark Evans stepped down as MD of marketing and digital at Direct Line Group last October, having spent a decade with the insurer in directorial roles. Now pursuing a portfolio career as a NED, he believes that there are two compelling reasons why seasoned marketers are well equipped to help steer digital transformations at board level.
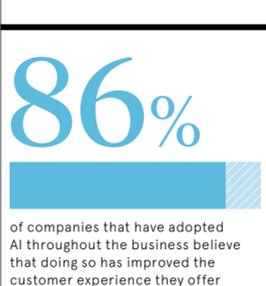
The first is that nearly all corporate marketing teams have had to deal with the impact of the digital revolution since the late noughties, whether they've wanted to or not.

"The digital media landscape has transformed over the past 15 years or so – and we marketers have lived through every step of that. We have had to move from a traditional analogue world into a modern digital one," Evans observes.

Effective marketing departments equipped themselves diligently to rise to the challenge, acquiring new skills and knowledge, he adds.

"Through good fortune, marketing just happens to have got ahead by necessity," Evans says. "The experience simply hasn't been as revolutionary for many other parts of the business as it has been for marketing. Our discipline has got miles on the clock."

The second reason is that one of the fundamental tasks of the marketer is to engage with customers and gain a full understanding of their needs and preferences – and knowing your customer should be at the heart of any digital transformation. To avert a 'computer says no' outcome, firms must therefore adopt a flexible and pragmatic

86%

of companies that have adopted AI throughout the business believe that doing so has improved the customer experience they offer

PwC, 2022

approach to change and apply some human sensitivity to the technology they're adopting.

"Digital transformation is often perceived as a technological matter – changing the plumbing and installing new platforms. But it genuinely isn't about that," Evans argues. "As much as anything, it is a matter of culture and mindset. If you default to a technology play, you can fairly and squarely miss the point."

Another factor that's prompting companies to seek out marketers to oversee their transformations is that the profession is focused on monitoring the latest consumer trends and responding quickly to them. As a career, it appeals to people who are curious by nature and enjoy change, rather than those who are more set in their ways.

The impact of the pandemic has highlighted the value of such flexibility, according to Evans. In 2020, the start of the Covid crisis gave many companies the impetus they needed to reach their customers via new channels.

"The pandemic has had a slingshot effect, making firms realise the importance of accelerating their digital growth," he observes. "They need to improve their customer orientation in doing so, so they must elevate their marketing functions and bring that profession's competence on to their boards."

> **Digital transformation is a matter of culture and mindset. If you default to a technology play, you can fairly and squarely miss the point**

All of these factors – particularly marketing's need to keep on top of consumer trends in the digital world – are familiar to Sam Bunis, director of brand and marketing at the Football Foundation charity and a NED at two other organisations. She reckons that her social media skills are good enough to keep pace with those of the average 12- to 16-year-old – because they have to be.

Like most other senior figures in her profession, Bunis also has experience of internal marketing. This is the process of 'selling in' marketing plans to other teams, winning their support to enact positive changes. Many marketing chiefs have had to rise to the challenge of convincing a conservative, change-averse enterprise of the need to do things differently. In doing so, they

have developed persuasive skills that are very much applicable to digital transformation projects.

"One of my NED roles has been about how we get everyone in the organisation to understand the value of what we're doing in digital. That was also a big part of my remit when I joined the Football Foundation back in April 2019. They'd never before had a function to do what I was going to be doing – and they didn't 'get it'," says Bunis, who adds that, once your fellow directors eventually do 'get it', change becomes far easier to achieve.

But it's not all plain sailing for seasoned marketers seeking to pursue a portfolio career as a NED. While many companies place a high value on the marketing profession and what it can bring to the boardroom table, a significant proportion still don't. Stories abound from marketers about firms that haven't taken their contributions seriously. This is often because their function's effectiveness isn't the easiest thing to quantify.

Evans points to the eye-opening findings of a survey published by Fournaise Marketing Group in 2015. The poll of nearly 1,200 CEOs in the US, Europe and Asia revealed that 80% of respondents had little confidence in the work of their marketing chiefs.

Could some organisations be spurning the opportunity to gain

valuable board-level expertise simply because they still don't 'get' marketing? Daryl Fielding, CEO of the Marketing Academy Foundation, observes that marketers are too often patronised and pigeonholed by other departments as the

creative ones with the crayons. Fielding, who has worked as an executive director for prominent brands including Vodafone, Kraft Foods and *The Independent*, also holds numerous NED and trustee roles. She says that the perceived value of a senior marketer to a digital transformation project might hinge on the structure of the company concerned.

"On all the boards where I sit, there are digital transformation projects under way. A lot of this is about seeking the one view of the customer," Fielding explains.
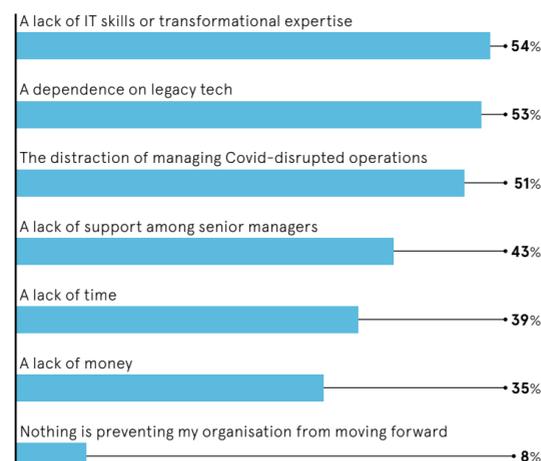
In most enterprises, the person who 'owns' the customer would be best placed to guide such projects. "That person would normally be regarded as the marketing director," she adds. "But, in many cases, it isn't true that they do own the customer," because most of the relevant data is collected and held by another department – the sales team, for instance.

This might explain why some boards still shy away from appointing marketers as NEDs, preferring to hire lawyers and accountants instead. Non-execs play an important role in ensuring proper corporate governance, so some boards might seek to recruit such professionals to reassure themselves that they have this responsibility covered. But Evans believes that the conspicuous success of companies that have appointed more creative NEDs could prompt them to reconsider.

"This comes back to an interesting point about what the role of boards and NEDs actually is," he says. "Many aspects of being a non-exec are conformance-related, but you can find any number of people with experience in that area. Marketers who understand governance issues can offer a good combination of conformance and performance. And boards that are better balanced in this way are, in a digital world filled with more discerning customers, more able to help their companies grow." ●

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THE TOUGHEST TRANSFORMATIONAL CHALLENGES

Percentage of IT decision-makers citing the following as barriers to the digital transformation of their businesses

A lack of IT skills or transformational expertise	54%
A dependence on legacy tech	53%
The distraction of managing Covid-disrupted operations	51%
A lack of support among senior managers	43%
A lack of time	39%
A lack of money	35%
Nothing is preventing my organisation from moving forward	8%

Veeam, 2022

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