

DIGITAL TRANSFORMATION

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DIGITAL TRANSFORMATION

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EDUCATION

Schools embrace digital push

The coronavirus pandemic has accelerated digital transformation in education, but how can the public sector ensure everyone benefits?

Duncan Jefferies

Digital transformation in education has shifted from important to essential in the past few months. The coronavirus pandemic has brutally exposed the gap between the digital “haves” and the digital “have nots” in the UK education sector and many schools, colleges and universities have been left playing catch-up.

“The Department for Education (DfE) estimated there were 10,000 schools in England that had limited or no remote-teaching and learning capability,” says David Bealing, managing director of AdEPT Education, which is helping schools urgently to rollout digital education platforms. “So, effectively from April onwards, you had millions of students who were potentially receiving no teaching at all.”

In a bid to address the problem and speed up digital transformation in education, the DfE has distributed 200,000 laptops and tablets to schoolchildren from low-income homes, along with 4G wireless routers to help boost internet access. During lockdown the recently established Oak National Academy, an online classroom and resource hub, has also provided schoolchildren with free video lessons covering a range of subjects.

Additionally, schools have been offered financial support to set up on one of two free-to-use digital education platforms, G Suite for Education and Office 365 Education. Both are browser based and suitable for use on multiple devices. They consist of familiar applications, such as word processors, spreadsheets tools and collaborative elements, as well as education-specific features like virtual whiteboards, quizzes, lesson planning and assignment-setting tools and marking software.

Crucially, digital education platforms also enable schools to broadcast live lessons. But no matter what solution schools, colleges or universities use to stream lessons or lectures, poor network connections can quickly ruin any attempt to teach.

“As soon as you took away the kind of connectivity and resources you find on campus, it became a real challenge to be able to connect and stay connected,” says James Clay, head of higher education and student experience at Jisc, a not-for-profit company which supports higher education and research institutions.

In fact, only 63 per cent of further education students who took part



Justin Paget/Getty Images

in Jisc’s student *Digital Experience Insights Survey 2020* agreed their college enabled them to access online systems and services regardless of location.

Sarah Knight, head of data and digital capability at Jisc, says students also consistently report they are still experiencing technology in a transactional way. “In other words, staff are confident around setting assignments, placing work in a virtual-learning environment and encouraging students to access online resources. But they’re not yet fully utilising and embedding technology in a transformational way that is starting to change practice.”

As many teachers and learners have discovered recently, “Zoom fatigue” is also a very real phenomenon that needs to be accounted for when designing curriculums. “You need to design an effective online curriculum or blended curriculum that takes advantage of the technology

and opportunities it offers, but likewise doesn’t just bombard people with screentime that actually results in a negative impact on their wellbeing,” says Clay.

Once students return to schools and campuses, they may find the physical environment has changed to better accommodate the technologies needed for digital transformation in education post-COVID-19. For instance, Nick Shea, sales director at AdEPT Education, says his company is working with schools and colleges to install cameras that will facilitate lesson-streaming.

“You used to have whiteboards with a data projector in the ceiling,” he explains. “Where that data projector would have gone, we’re instead putting in a camera that can be used to stream lessons to an audience that isn’t actually in the room.” This could help with social distancing on campus. “You might not be able to seat 30 students together in a class,”

he adds, “but the teacher might be able to teach the same lesson to 15 students in one room and stream it live to the other 15 in another room.”

Virtual reality may also come into its own in a world of restricted travel, allowing for virtual tours of museums, galleries and historical sites, while also helping to democratise access to them. Along with augmented reality, this kind of technology enables teachers to shift from “what is essentially fairly static teaching and learning – text that is still, images that are still – to more dynamic ways of thinking and learning about things”, says Dr Alison Clark-Wilson, a former secondary school mathematics teacher who now works as a principal research associate at the University College London Institute of Education.

However, the warp-speed progress of digital transformation in education has also highlighted the need for greater support for educators when it comes to integrating new technologies into their teaching. “It’s challenging to embrace these technologies in a truly transformative way,” says Clark-Wilson. “You have to hold teachers’ hands, provide safe spaces to fail because they never had the experience of learning their subjects in today’s environment.”

Looking further ahead, intelligent tutoring systems, which aim to provide immediate and customised instruction or feedback to learners, usually without requiring intervention from a human teacher, have generated a considerable buzz in recent years.

However, Wayne Holmes, principal researcher for education at Nesta, says the impact of artificial intelligence (AI) on the education sector has so far been generally disappointing. “The focus has always been on how to build a tool that can teach as well as a teacher,” he says. “But the reality is you can’t, though you can build tools that give the appearance of doing that.”

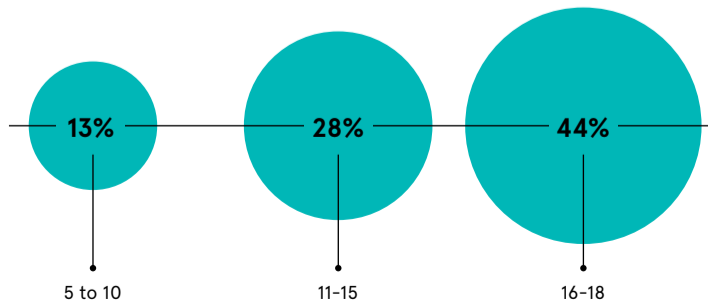
As such, Holmes is far more interested in AI tools that could help teachers to become “super teachers” rather than tools that attempt to do their job for them. As he points out, any technology is ultimately only as good as the teacher who’s using it.

“Teachers draw upon their pedagogy expertise, their experience in the classroom, their knowledge of their domain and their passion for working with young people,” Holmes concludes. “All these elements have to come together; technology is just a really useful tool.” ●

LEARNING RESOURCES

Office for National Statistics 2020

Share of UK parents who said their child had used the following learning resources at home between May 7 and June 7; only or eldest dependent child only





CASE STUDY

Using data to pack a punch

Founders of five-year-old publishing house Canelo reveal how data management has been central to its success

Oliver Pickup

The publishing sector is not renowned for its data-driven innovation, so when digital venture Canelo, which derives from “cinnamon” in Spanish and Portuguese, was launched in early-2015, it added some much-needed spice. Powered by a data strategy, Canelo set out to publish a range of fiction and non-fiction titles as ebooks, apps and on the web.

At the time Canelo launched, led by founders Michael Bhaskar, Iain Millar and Nick Barreto, ebooks were being hastily converted to PDFs. “The ebook is too often an afterthought; we want our ebooks to be beautiful,” says Bhaskar. “Everyone has talked about the future of publishing for years; it’s time we actually got on and made it happen.”

Technology director Barreto, 33, adds: “We are building a truly

21st-century publisher, with the tools and agility needed to explore new opportunities to the full. Now is when things get really exciting.”

Canelo has indeed spiced up the publishing sector and continues to innovate, thanks to its data strategy and identifying a gap in the market to produce high-quality ebooks.

“When Canelo began, we felt publishers weren’t focused on innovating and changing how they worked,” says Barreto. “Despite incredible growth in digital readers, they’d plan and do everything with print in mind and, sometimes literally when it came to asset production, work backwards to digital formats.”

“It had been decades since anyone was trying to build a new kind of publishing house. It got to a point where instead of trying to effect change from within the organisations we were in, we decided to start afresh. We reimagined things completely for the digital world.”

“We wanted to build a publisher that was innovative, agile, responsive, digitally native, giving both readers and authors a better deal: cheaper, more easily accessible books and a fairer royalty split on short licences for authors.”

Canelo approached the task with three values in mind: simplicity, fairness and growth. “If we could do that, we felt we could disrupt the world of mass-market publishing for

the better,” says Barreto. There was plenty of initial encouragement from others within the publishing sector.

“Early on we were told by a literary agent that our largely automated royalty reports were the best they’d ever seen. Even now we offer the highest royalties on digital sales. While we don’t pay any advances, even a moderately successful book will likely be more financially rewarding for an author thanks to the uniqueness of our offer.”

Due to its data strategy, Canelo continues to be agile and has adapted its original business model and for the last two years it has published print editions. “It started as a trial in mid-2018 and because the interest in our titles was much greater than we were expecting, we quickly sold over a million paperbacks,” says Barreto.

Investment in technology has been paramount. “The first batch of print books we released – 32 in total – were all typeset automatically in a single day. That process has only got better from there.”

Such commitment to tech and a robust data strategy has been critical to Canelo and its constant evolution. It has also enabled the organisation to thrive in the last six months. “We were well placed to deal with the lockdown, mostly as a result of being an inherently digital business working entirely in the cloud,” says Barreto. “We are probably also one of the few publishers that didn’t furlough any staff; in fact, we’ve accelerated our growth plans for the future this year.”

He emphasises the importance of Canelo’s data strategy. “Data has been at the heart of the business. Every publisher spends a lot of time looking at sales patterns and we’re no exception. But we try to think and use data holistically. We use data management



Every publisher spends a lot of time looking at sales patterns and we’re no exception. But we try to think and use data holistically

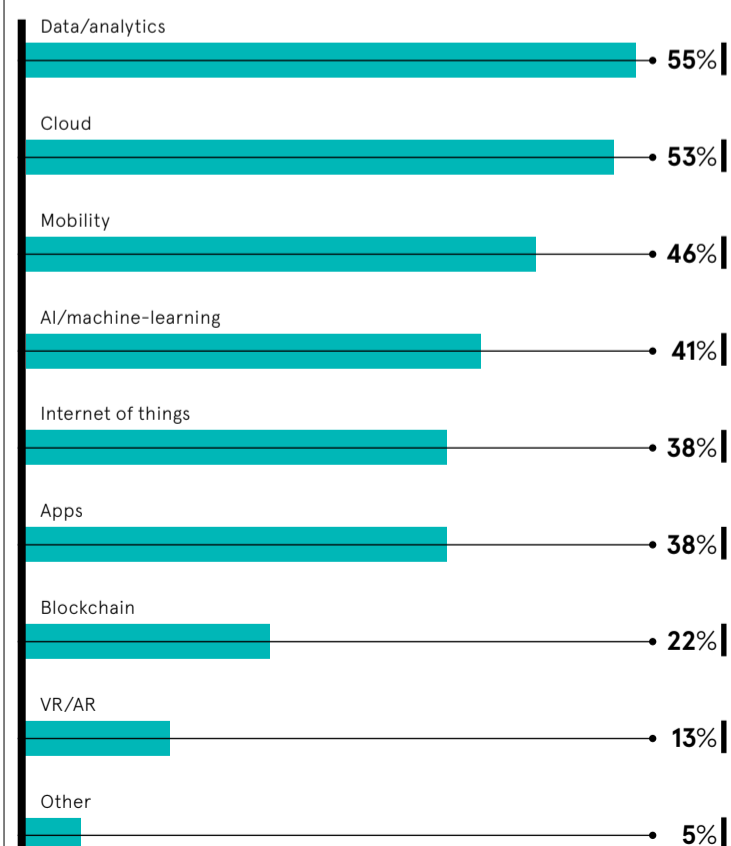
in so many different ways. Most of the innovation is behind the scenes, in our contract and offer, in our workflows and delivery mechanisms, in our approach to authors and marketing,” says Barreto.

As an example, he points to how Canelo has recently updated its entire workflow so it can produce ebooks and print editions from the same source. “This process saves us a lot of time and ensures both editions are always the most up-to-date and accurate version of a given work,” he says. “Generally this sort of workflow is only found in the largest organisations and can be prohibitively expensive. We’re only able to do this because we had great quality data in the first instance.”

Offering a final piece of advice for business leaders, Barreto adds: “Investing in technology and having our own software expertise in-house has enabled us to take on loads of different challenges and punch above our weight in so many ways as we’ve grown. Ultimately, it’s about embracing the opportunities of the age in which you find yourself.” ●

PRIORITIES IN DIGITAL TRANSFORMATION

IT decision-makers were asked which digital transformation components they are most interested in



Five steps to successful digital transformation

Customer retention, profitability and productivity are central pillars to strengthening any business, now more than ever, and the essential cohesive is data

The near-overnight change to working practices in the last few months showed the indisputable need for safe, secure and reliable remote data access. Its presence or absence defined how organisations weathered the storm or did not.

With so many organisations' data infrastructures exposed as vulnerable, unreliable, impractical, obstructive or simply out of date and expensive, digital transformation – that cumbersome, confusing, catch-all term – has been given a new urgency.

But if building a digital transformation is a daunting and confusing undertaking at the best of times, when it becomes a "do or die" necessity for saving costs and retaining customers, then starting the process correctly is essential.

The problem is most will not. Most will start with their business objectives. It seems so strategic and so prudent. And yet it is exactly the same mistake that has plagued so many digital transformation projects over the years. So if the obvious route is not the correct one, where should we start?

Calligo, an end-to-end managed data services provider, recently launched new research into the digital transformation approaches of more than 500 businesses across North America and Europe, and how it impacts their productivity, profitability, customer satisfaction, data security and more.

From Calligo's *Reinventing Digital Transformation* report, it is possible to distil the five essential steps to emulating the highest performers, beginning with their starting point: data.

1 Make understanding data the starting point

Most people don't know the difference between a technology strategy and a data strategy. If you take a technology-first approach to digital transformation, it relies on identifying business problems and deploying the most appropriate technology to fix them.

"It might seem strategic because it starts with business needs, but it's actually narrow minded," says Adam Ryan, Calligo's chief services officer. "It presupposes the chosen business needs are the right areas to focus on to improve organisational performance."

In contrast, a data strategy starts by examining how data moves through the business, identifying areas of inefficiency, data governance weakness, overspend, security gaps and so on.

"The places where improvement is needed most are unlikely to be either

found or solved if you focus solely on fixing preconceived business needs," Ryan argues. Put another way: a data strategy enables issues to be resolved from the "data up", by finding and setting its own objectives along the way, rather than prescribing objectives and deploying "tech down" to repair them.

"It's a classic example of 'you don't know what you don't know,'" says Ryan. "It is a far more fundamental approach to digital transformation, improving businesses from their very foundations and bringing more value as a result."

2 Adopt a privacy mindset

For most businesses, a data-centric approach is alien. The easiest way to shift perspective, and to secure quick wins soonest, is to look at the data environment's ability to preserve data privacy.

This is because the only way to understand whether a business respects its data privacy obligations is to achieve the most granular visibility of every way in which data enters the business, is interacted with and treated.

"By starting your analysis with data privacy, you achieve two key benefits," says Ryan. "Obviously you will reveal your privacy liabilities, which cannot be underestimated in terms of both regulatory compliance, but also consumer trust. But the granularity of the process is often unprecedented for the business. Suddenly every data workflow's security weaknesses, inefficiencies and cost sinkholes appear."

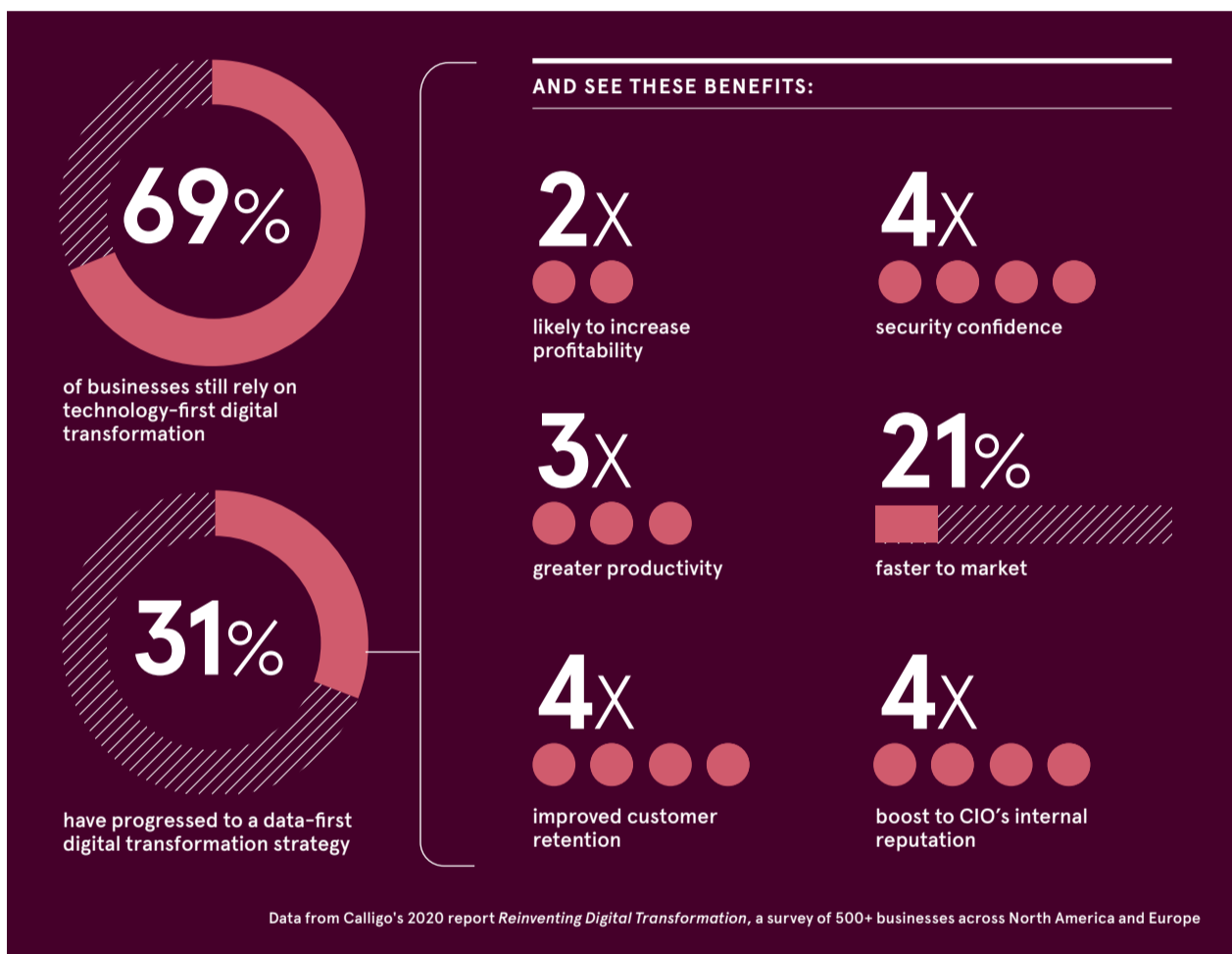
3 What would your customers do?

A core part of the data strategy investigation is your customers' journey through the business. Most organisations see understanding their buyers' needs as mainly the responsibility of sales and marketing, but it has a far more fundamental impact than that.

"Customers are in essence data," says Ryan. "Easing customers' routes through your business and directing your innovation at how to best make their experience with you efficient, intuitive, safe and even pre-emptive is where the real benefits lie. Understanding your workflows from the perspective of a customer means you can start to make it easier for your customers to interact with you, trust you and enjoy working with you."

4 Add the right technology in the right places

Once you reach this step, now and only now is the time to start thinking



about the technology that applies to the problems your data strategy has discovered. "It will almost certainly be an entirely different set of technologies to the ones you would have chosen under the 'old way,'" says Ryan. "Further, a proportion of the problems you have identified will often be solved by better processes, not by technology; just another example of how data strategies are more cost effective."

Much of the digital transformation conversation often inevitably points towards machine learning and automation, and rightly so. It certainly has a role to play. But finding the correct role for such technology is vital.

"The general level of understanding of machine learning and automation is so low there is a tendency to deploy it without proper understanding of where the real problems lie and even whether they are truly best fixed by these tools," says Ryan. "And, more worryingly, this actually increases a business's inefficiency, spend and risk profile, which they probably won't realise until much further down the line."

But once started, data-first digital transformation never stops. Your environment and the strategy that maintains it has to be kept under constant review.

"The types of data you gather, how you interact with it, the ways you might use it, the laws that may govern it; everything changes constantly," says Ryan. "Data is the most fluid asset you own and therefore the most difficult to manage, the trickiest to keep efficient and arguably the most dangerous. No data strategy can stand still, because your data never stands still."

“The places where improvement is needed most are unlikely to be either found or solved if you focus solely on fixing preconceived business needs

To download your copy of Calligo's research into data-first Digital Transformation, visit www.calligo.io/raconteur



OPINION

Digital leadership under lockdown

Ahead of Digital Leaders Week next month, organisers highlight the challenges of leading and motivating staff during the coronavirus pandemic and pull focus on new ways to create meaningful virtual communities

Moving your organisation to home working has for many been an epic undertaking. We have seen a period of accelerated digital transformation and leaders need to be thinking digital first when motivating the individuals they lead. Digital transformation is all about your people, your culture and not the technology.

So it's particularly important to be thinking about the impact of lockdown on the four traditional areas of an individual team member's motivation: purpose, learning, autonomy and social connection.

Individuals still need a sense of purpose in a role. This can be contributing to a meaningful outcome bigger than themselves and often one larger than the organisation they work for.

During lockdown our organisational and even whole sector's sense of purpose has been under attack. We have focused on survival ahead of purpose in the short term and as we unlock, it's vital for leaders to acknowledge this

and take the time to rethink their organisation's place in our sector and society.

You can be sure that your teams will also be asking themselves, "Is my organisation still in a place where what we are good at is what people need?". Time thinking about this collectively with your team as a leader post-lockdown is critical.

The importance of learning and developing skills in a role is an area where lockdown may have created opportunity. Before the pandemic a lot of skills were acquired from colleagues longer in the job and also from those more senior. Six months of lockdown has transformed this relationship and remote teams now know they need digital skills unavailable in their current organisation.

This is a national challenge and has combined with an explosion of free training events online. As a leader, encourage and support this opportunity to connect individuals to the knowledge available and needed by them and our organisations online.

Autonomy, that sense of control over work, is an important part of individual motivation and has been an unintended, but necessary, part of lockdown. The level of trust in our people has certainly risen and a plethora of digital tools now means we can co-ordinate disparate teams with less direct control. With autonomy levels in our organisations high as we come out of lockdown, we need to leverage digital tools built to encourage collaboration and suppress any urge to reduce this strong motivator of individual performance.

Lastly, and perhaps the main victim of lockdown, has been social connection within our organisations. Individuals need a network, support group, mentors and sense of social belonging. Whether "watercooler moments", gossip or social events, a great deal of this has been lost.

Our team members' networks are now far more geographically local to them rather than with work colleagues. This might be good for the individual, but is not for the organisation. We need to leverage technology to build new virtual cultures that can survive and build support networks of value to individuals, with a lot less face-to-face interaction, to reinforce them.

“With autonomy levels high, we need to leverage digital tools built to encourage collaboration and suppress any urge to reduce this strong motivator of individual performance

Robin Knowles
Founder and chief executive of Digital Leaders



We are social beings and the interaction, networks and social connections we create at work are important given we spend so much of our lives "in the office". However, during the pandemic, working from home has meant those watercooler moments and face-to-face conversations completely halted.

Remote working was not entirely new, of course, but even working-from-home veterans would be the first to admit that aspects of a remote environment still had some distance to go when compared with physical interaction.

Technology has done it's best and we all had our digital networks accelerated by the "Zoom boom", taking part in online quizzes and the like. Virtual drinks certainly helped, but I am much more excited now about the plethora of new digital platforms stepping up to recreate social togetherness for teams and organisations.

In the last few years, we have seen the tech for group working and one-to-one interaction platforms transform unimaginably, at first through the likes of Slack, Zoom and Microsoft Teams. But for me, the missing link always remained the networking and interaction you get in larger groups, that you can only get through physically attending an event, meet-up, conference or summit.

Pre-lockdown, the Digital Leaders team already ran a large online programme for our community alongside physical events because our members are based throughout the UK and beyond. The platforms we used were typical one-to-many formats like webinars, where content is presented and questions asked. However, it was always missing that golden moment of audience interaction when the serendipity of bumping into a new and useful connection happens.

This moment is what people value most when attending physical events and in lockdown this has been lost. But lockdown has now created new platforms that do offer this networking and audience peer-to-peer interaction. And wow, what a change. Delegates on these new platforms can sit together in groups of five, use social media tools to connect, move around the space and see everyone else there. This now includes our own members' space we have christened the #DigiLounge.

“

The truly virtual community is coming of age in 2020 and for me will become the way to network, build connections and bump into serendipity for professional communities

Louise Stokes
Director, Digital Leaders

Most excitingly, communities of designers and users have sprung up around the new platforms and these groups are making weekly improvements, updates, new features offering extraordinary levels of creativity. I recommend you try them. Communities will rely far less on face-to-face meetings attempting the serendipity we lost when we locked down.

Also, these new communities are inclusive, offering access for those working remotely, or for people in rural communities who don't have the time or the funds to travel, and there is the reduced environmental impact to consider. Being live and interactive, delegates can network in a natural-feeling way. They can meet new people, listen to great speakers and even take part in the Q&A, all from the comfort of their home office.

The truly virtual community is coming of age in 2020 and for me will become the way to network, build connections and bump into serendipity for professional communities. ●

Digital Leaders Week, the UK's largest online gathering of those leading digital transformation, takes place from October 12 to 16



CASE STUDY

Focusing on ecommerce

The coronavirus pandemic has kickstarted camera company Canon's digital transformation journey as it continues to ramp up its ecommerce offering

Oliver Pickup

If it wasn't clear at the start of 2020, the coronavirus pandemic has brought into sharp focus how critical it is for businesses of all sizes to ensure they are well on their digital transformation journey. Those that started long before the crisis had the frame in which to move quickly and with great agility to accommodate the rise in remote working and ecommerce.

"Many multichannel businesses that were already investing in ecommerce as a growth channel have suddenly found digital forming the majority, rather than the minority, of their sales and ecommerce turning into a far more significant profit driver," says Andrew Hood, founder and chief executive of data analytics consultancy Lynchpin.

Multinational camera giant Canon is an exemplar of an organisation that has shifted its gaze to ecommerce in the last five months, with aplomb. The company, established in 1937 in Japan, approached Lynchpin four years ago, when its ecommerce offering barely existed, to help create a roadmap for digital transformation and data-driven decision-making. And when the pandemic hit, Canon moved through the gears.

"Like many consumer businesses, COVID-19 has dramatically accelerated Canon's digital transformation," says Hood. "Lynchpin has supported, thanks to our ability to provide fast, actionable insight across factors ranging from changing consumer behaviour to pricing dynamics in the market."

John Donnellan, director of e-commerce ITCG at Canon Europe, has been in the driving seat of the digital transformation. He stresses the importance of partnering with an expert: "Lynchpin helps us to unlock the millions of datapoints we have and turn them into valuable insight, which we use daily to improve our traffic, customer journey and sales performance."

"The purpose of the digital transformation is to manage Canon's visibility in the different digital spaces – Google, Amazon, YouTube and specialist sites – actively and to deliver an online experience that reflects the high expectations, quality and innovation of the brand."

How did Canon solve this mighty challenge and secure board-level support? "In a complex matrix, international and multichannel company, you only gain traction if you have a com-

elling story that relies on hard data," says Donnellan.

"By being able to demonstrate the size of the appetite from online customers, by showing the level of interest for Canon products and validating the willingness of customers to buy directly from Canon, we gained buy-in from internal stakeholders to increase Canon's visibility on its product, as well as increase conversion by simplifying and improving the experience."

"The other critical reason for success is a relentless focus on ambitious, but achievable, targets. By implementing effective best practices across all aspects of ecommerce, including digital marketing, promotions and the overarching customer experience, we have been able to review, optimise and demonstrate success."



The processes put in place have shown that this success was not accidental but engineered with the customer at the core

There have been manifold benefits for Canon, not least a much stronger resilience to events such as COVID-19. Undoubtedly the company's investment in digital transformation has been vindicated. "Being able to demonstrate that Canon's direct sales could support the business during challenging times and actively contribute to improving profitability has accelerated the internal adhesion to the importance of ecommerce," says Donnellan.

"The strategic processes put in place have shown that this success was not accidental but engineered with the customer at the core."

Offering advice to others embarking on a similar journey, he adds: "Be ambitious yet humble. Have a clear vision, be consistent, and build up your credit and influence in the organisation. Harness what you can control before asking for more. Finally, always rely on facts and leave emotion aside." ●

Customer data at the heart of digital transformation

An expert and bespoke approach to data analytics enables organisations to survive and thrive in these rapidly changing times, says Andrew Hood, chief executive of Lynchpin

Placing the customer first, making evidence-based decisions, automating and optimising processes with algorithms, and reaping the benefits of strong data security. These were identified as the four data and analytics trends to watch in 2020, according to a report Lynchpin published with Corinium Intelligence last October, based on interviews with 640 global leaders in the field. The coronavirus pandemic has intensified the urgency with which organisations need to keep pace with such trends.

So much has changed and accelerated over the last six months. It is now paramount to place customer data at the heart of digital transformation, a process that if it hadn't already started has been enforced by the fallout from COVID-19. To remain relevant, businesses need to tap into customer sentiment and understand needs.

Consider that the Corinium Intelligence study found 77 per cent of executives were already using data to optimise customer experience. More than half (57 per cent) revealed they were incorporating data into their decision-making processes. That was then, but what about now?

For organisations to survive and thrive, it is essential to be flexible, to evolve quickly. As potential shocks in the economy loom, data analytics enables leaders, armed with that critical intelligence, to be agile, better connected with customers and more confident when taking action.

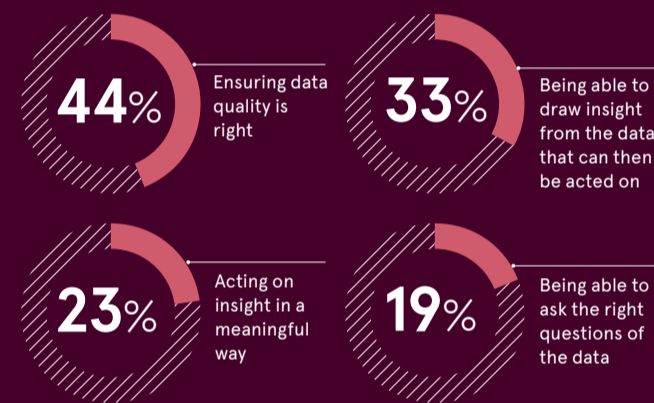
Better data analysis

It's easy enough to measure indicators that show everything is looking rosy, even though the hidden reality can be quite the opposite. Expert insights and in-depth customer analysis ensure you are not left blindsided. Plus it's through customer understanding that the data starts to provide hints about where businesses can adapt or change to take advantage of an opportunity.



Expert insights and in-depth customer analysis ensure you are not left blindsided

WHAT ARE THE BIGGEST CHALLENGES OF USING CUSTOMER DATA TO IMPROVE CUSTOMER EXPERIENCE?



Lynchpin, which I founded in 2005, is a data analytics consultancy. We join the dots between the business challenge and analytics challenge. The majority of our clients – the likes of Canon, Hotel Chocolat and ViacomCBS – are going through digital transformation, whether over the past ten months or ten years. In this period of profound change, it's so important to get it right and pivot if necessary. And we have been able to customise our offering for each client during the COVID-19 pandemic.

Some have found ecommerce, which previously was a single-digit percentage of their top and bottom lines, has suddenly become the most significant component, in just weeks. Such has been the ecommerce demand during lockdown, our clients have reported that "it's like Black Friday, every day". Black Friday might typically take a month of planning, so it's admirable how businesses have reacted and switched market levers to manage subtle but important things, such as stock and supply chain.

Knowing how and when to dial up or down some aspects of a business is achieved when leaders have actionable data at their fingertips, can understand demand and show a willingness to respond. This speed of data analysis is a commercial imperative as it helps businesses both scale and improve forecasting.

Steps to digital transformation success

We are drowning in data. At Lynchpin, we make sense of it all. We think about the different environments, where

internal systems overlap and bring together customer data, from many devices and other sources, to spot patterns, using artificial intelligence (AI), invisible to the human eye.

Digital transformation may be an ongoing process, but the initial step is having a robust data strategy for first-party data that manages the opportunities and risks. There must be a clear, prioritised plan for managing the quality of data, in part to ensure there is business-wide alignment and no duplication of effort. A lot of data has future value and that's why building a predictive model, using AI, is vital.

Next, organisations have to understand and measure customer digital touchpoints, in addition to traditional channels, and align that with their business processes. Without this baked into the data strategy, you will gain only a disjointed view of customers and behaviours.

Business leaders are empowered to make fast, data-driven decisions from patterns and predictions surfaced by Lynchpin's bespoke approach and advanced analytics techniques and tools, including machine-learning. During COVID-19 we have been able to adapt quickly and with our services you can, too.

For more information please visit www.lyncpin.com



COVID CATALYST

HOW THE PANDEMIC HAS ACCELERATED DIGITAL TRANSFORMATION

The coronavirus pandemic forced working patterns, business models and short-term forecasts to change overnight. But to what extent has the crisis accelerated digital transformation efforts, and which technologies are more in demand as a result?

97%

of business decision-makers say that the COVID-19 pandemic has sped up digital transformation at their company

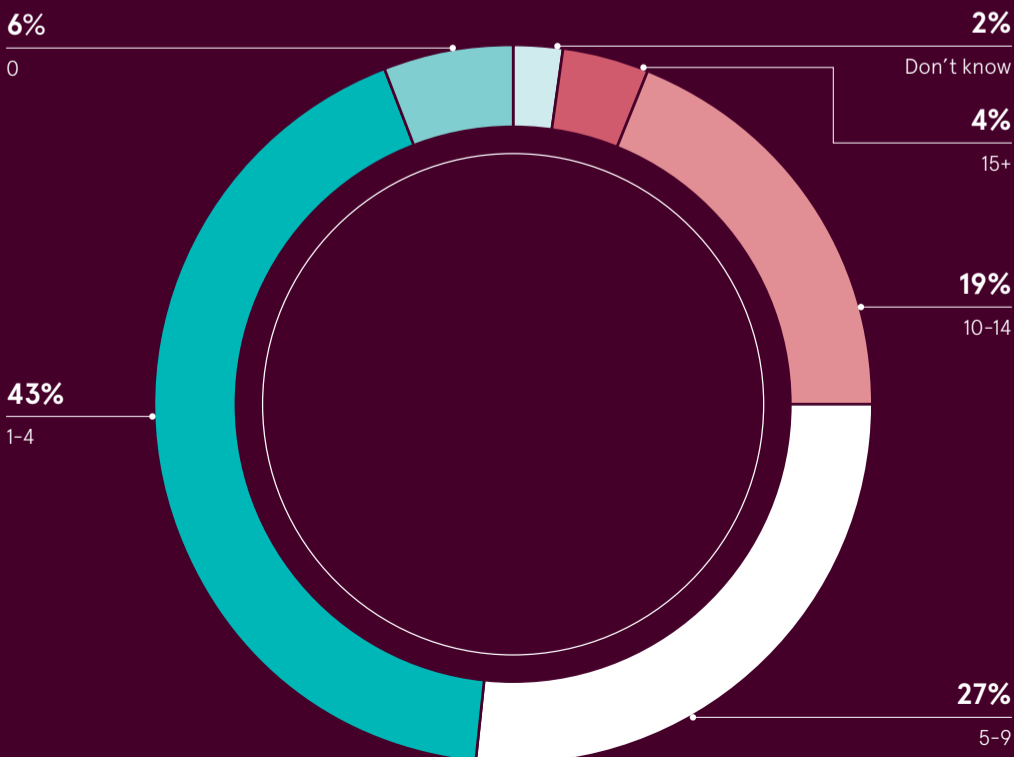
Twilio 2020

79%

said their budget for digital transformation had increased as a result of COVID-19

SHIFTING TIMELINES

Average number of years that COVID-19 has accelerated companies' digital communications strategies



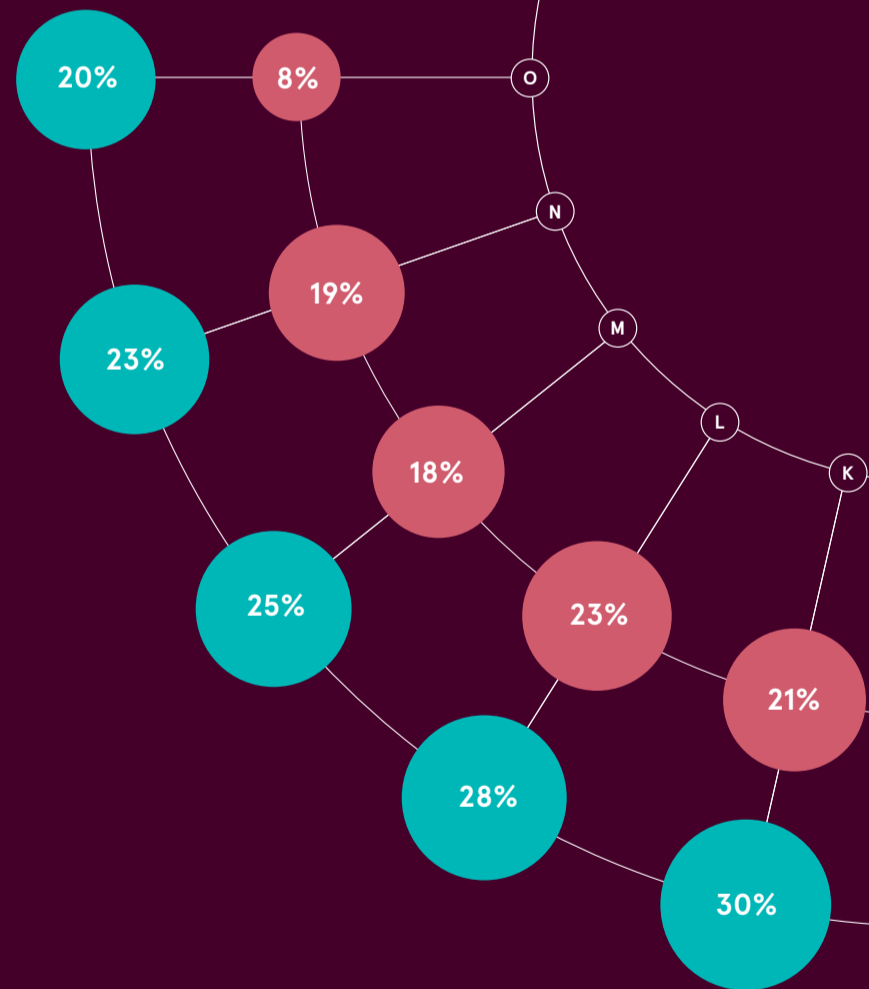
Twilio 2020

COMMS TECH IN DEMAND

Percentage of business decision-makers who said their companies increased their use of the following communications channels as a result of COVID-19

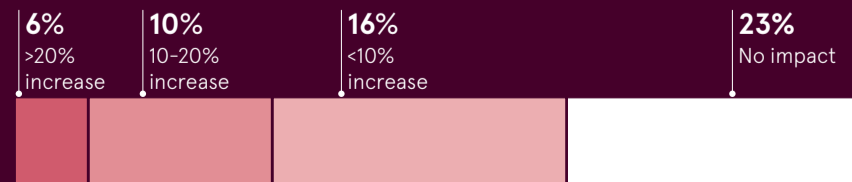
- Increased use
 - Used for the first time
- | | |
|-------------------------------------|--------------------------------|
| A Live chat | I Web-based chatbot |
| B Email | J Website |
| C Video | K In-app calling |
| D Voice | L SMS-based chatbot |
| E SMS | M Remote contact centre |
| F Interactive voice response | N Voice-based chatbot |
| G In-app chat | O Messaging app |
| H Social media | |

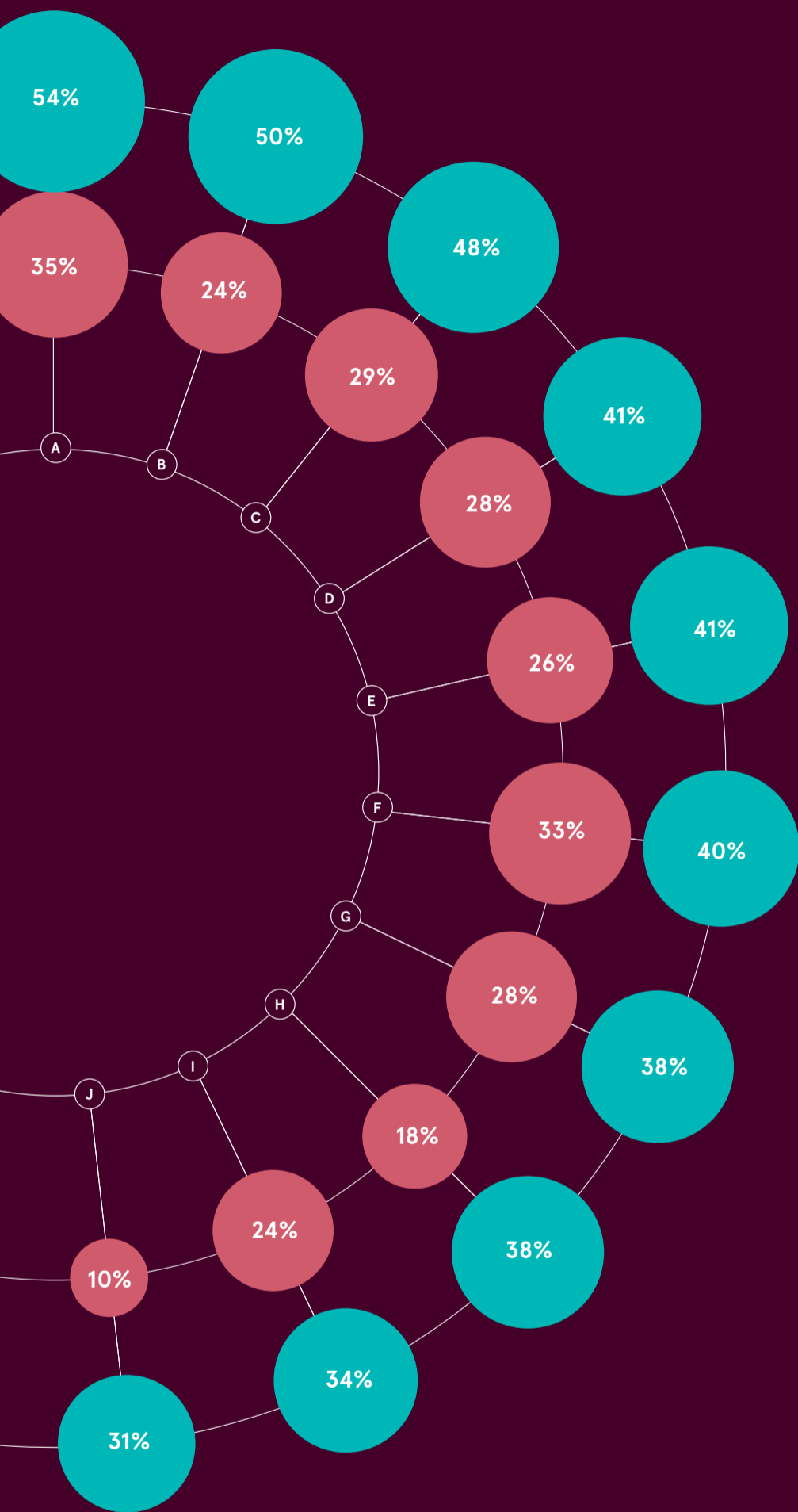
Twilio 2020



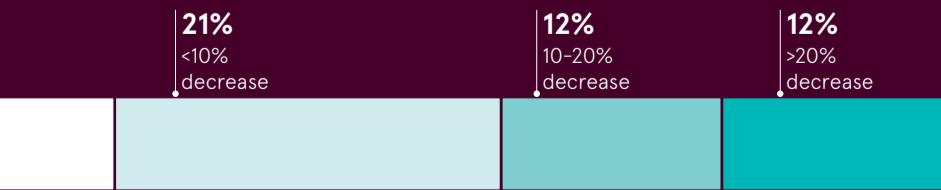
SOFTWARE SPEND TO RAMP UP

Impact of COVID-19 on companies' software-as-a-service spending in 2020; numbers





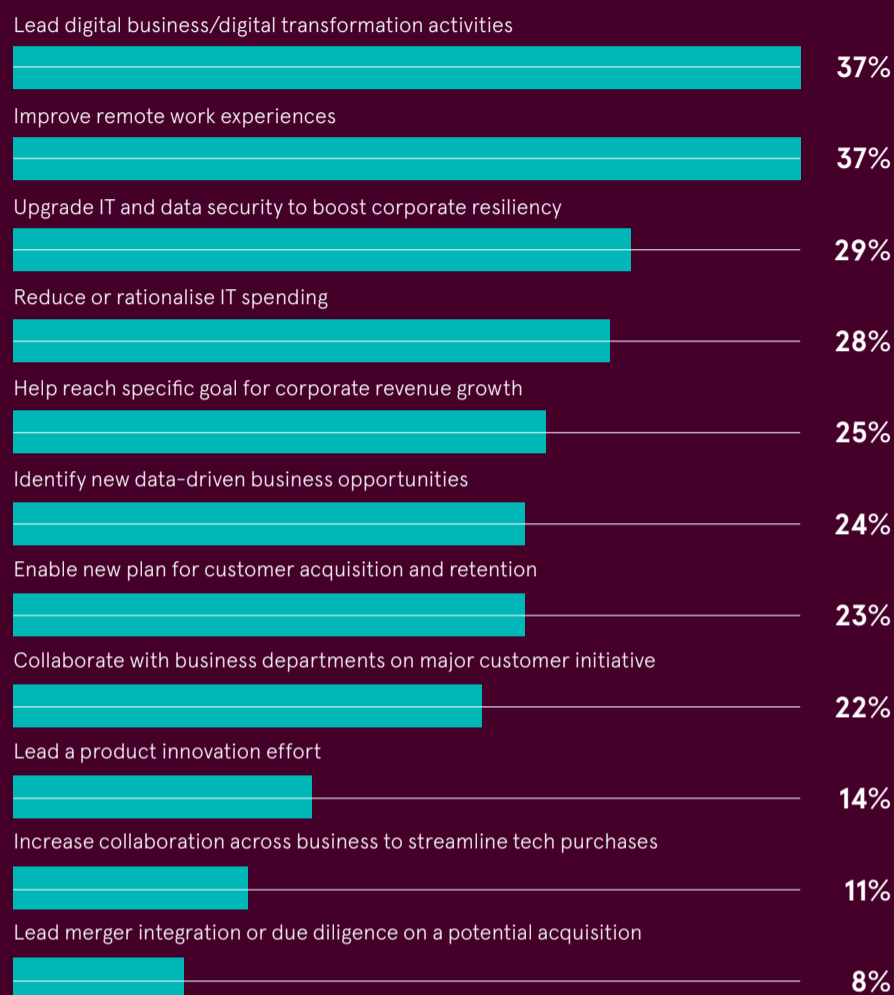
do not equal 100 per cent due to rounding



IDC 2020

TOP DIGITAL PRIORITIES AMID COVID-19 DISRUPTION

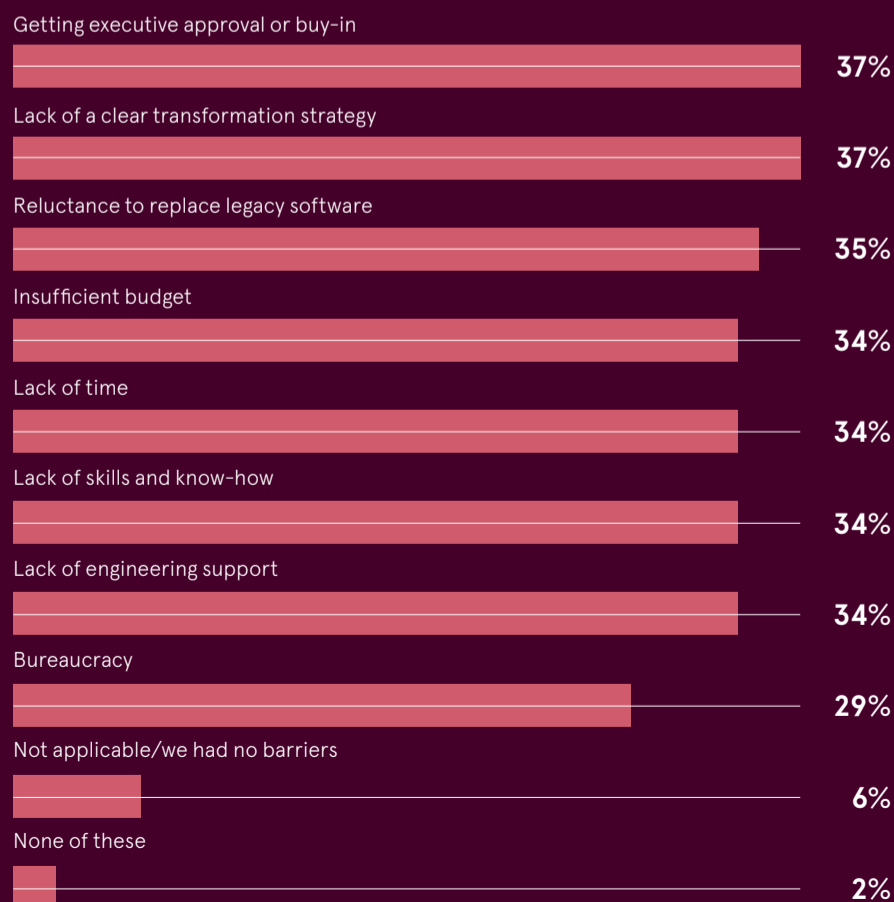
CEOs' top priorities for CIOs to help businesses preserve through the current disruption



IDG Research Services/CIO 2020

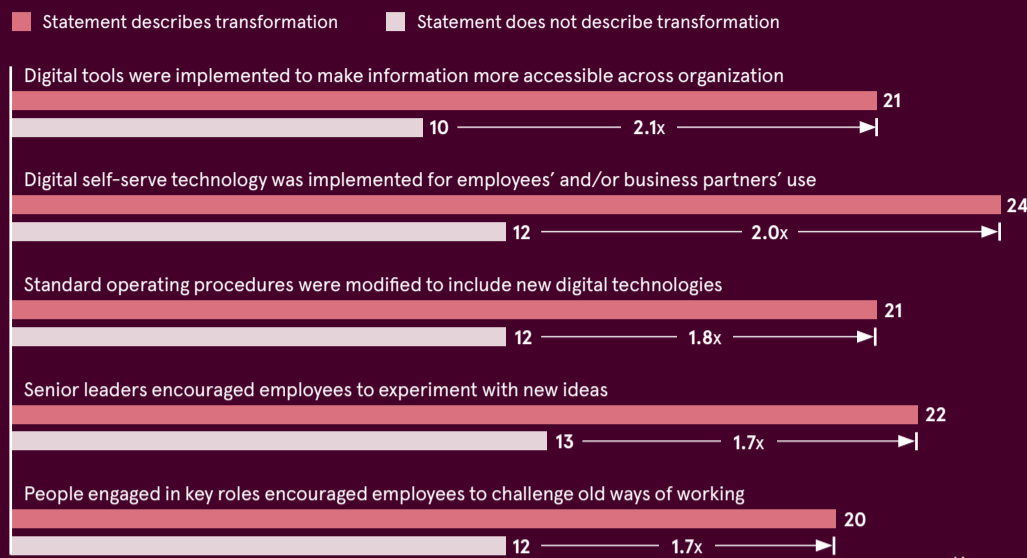
BREAKING DOWN BARRIERS

Organisational barriers to digital transformation that the crisis has broken down, according to business decision-makers



Twilio 2020

SUCCESS RATE OF DIGITAL TRANSFORMATIONS, BY KEY FACTORS, % OF RESPONDENTS



mckinsey.com

Delivering the promise of digital

Ever since digital-first companies such as Amazon and Airbnb reinvented the blueprint for building a market-leading business, the rest of the world has been racing to catch up

Silicon Valley giants have disrupted traditional markets because of their mastery of data, which helps them understand customers better, cut costs and scale faster.

By contrast, many big pre-internet firms are hindered by legacy IT investments, which stop them from executing as quickly as the more nimble startups. As Klaus Schwab, founder and executive chairman of the World Economic Forum, said: "In the new world, it is not the big fish which eats the small fish, it's the fast fish which eats the slow fish."

Many traditional companies now hope digital transformation can reverse their fortunes and unleash exciting possibilities, but few understand what is required for a full transformation to take place.

Hardest part of a digital transformation

The most common mistake is for companies to focus all their energy on developing web and mobile apps to improve the customer experience, while forgetting about the more fundamental problem: how to access existing IT systems and processes quickly, securely and at scale.

In the cloud era, this data access is achieved via an application programming interface, or API, which is a system that allows other systems to talk to each other. Just like humans interact with programs through a user interface, a program interface interacts with other software programs.

These APIs can then be made available on a developer portal to improve developer experience, essentially making it much easier for software engineers to write powerful solutions.

These days such systems and applications are all based in the cloud, presenting firms with cost savings and opportunities to scale that could only

be dreamt of several years ago. Yet to truly benefit, organisations must embrace cloud-native principles, which advocate delivering applications in smaller microservices.

To be successful, it is likely they will need to hire or retrain large teams of leaders, managers, consultants and engineers who are used to working in different ways.

Faster innovation

Integrella, a UK based consulting company, has used its experience working on hundreds of digital transformation projects to assemble the best open source software required for building APIs in a modern cloud-native architecture, while combining it with its own proprietary intellectual property.

It has helped top-flight banks, major insurers, high street retailers and NHS trusts to accelerate digital in a cost-effective way, while leveraging their existing assets and therefore minimising risk.

Integrella gives its software, which it calls its Digital Integration Platform, away for free to companies to drastically reduce the time, effort and risk involved in going digital.

It has pioneered its open API Lab to help firms API enable their existing data and processes, so they can innovate at the pace of a startup.



Companies can maximise their chances of success by working with an experienced partner

It consists of a target operating model, automated processes, standards and best practices, along with an onshore/offshore expert team that can provide technical support 24 hours a day at a fraction the cost of most single-tiered vendors.

Scaling the solution

Digital transformation is about more than just technology, however, which is why Integrella supports its clients at every stage of their digital transformation, from helping them work out what they want to scaling the solution across the entire business.

Crucially, it builds a pilot of the solution in the form of a minimum viable product, or MVP, to prove the initial assumptions in the business case stack up and allowing them to identify potential problems early on and get buy-in from stakeholders or external investors.

The risks are high with as many as 80 per cent of digital transformation projects failing to provide returns on investment due to poor strategy or execution. But inaction poses a much greater threat.

Pre-internet companies that do not achieve digital transformation will be unable to leverage the data trapped inside their businesses, making it harder to grow and innovate as more nimble digital-first rivals speed ahead.

The need for a trusted partner that can facilitate effective digital transformation has never been greater.

For more information please visit integrella.com

Integrella
Digital Integration

VISION

Five lessons for digital success

From empowering workers to upgrading tools, experts describe the five key elements of any successful digital evolution

Rosalyn Page

Successful digital transformation is by no means guaranteed. Undertaking transformation doesn't equal success. Research firm Gartner has found most organisations don't have a clear vision of the initiative, especially in a way that is easily understood by employees at middle management and below. And the process sometimes takes the focus away from operational excellence, which can result in visible, avoidable failures that hurt the reputation of executive leaders.

While undertaking a transformation process, designed to capture the benefits of digital technologies and improved performance, requires commitment and focus, five key digital transformation success factors have been identified. Leadership,

capability building, empowering workers, upgrading tools and communication are integral to a successful transformation, according to research by McKinsey & Company.

In 2020, the coronavirus pandemic has dramatically accelerated the need to reshape to meet the challenges organisations are facing across the board. According to Gartner, the pandemic has forced rapid digital innovation and created the need for cross-functional teams that bring together technology experts with business analysts to work collaboratively and at speed to develop new platforms and solutions.

Here leaders from across the spectrum expand on the digital transformation success factors in 2020 and beyond.



Leadership in the transformation process

Leading a successful digital transformation and avoiding common pitfalls is not a destination, rather it's a mindset and a journey. Effective leadership builds confidence in the transformation process and is paramount to a company staying competitive in the future, says Ian Kieninger, co-founder and chief executive of AVANT Communications.

If the decision-makers within an organisation don't fully buy in to the journey, it will hold back innovation and growth. "Leadership doesn't necessarily need to understand the technical aspects of all digital transformation initiatives, but they need to have the foresight to encourage and embrace change,

setting a vision employees can follow, carry out and believe in," says Kieninger.

He believes the leadership needs to evaluate if it has the right skills to bring a new vision to light. And while these capabilities and skills can come from within, investments in the right people are essential.

"If the organisation doesn't have the necessary skills, successful digital transformation can still be achieved by investing in outside partnerships that can get you where you need to go. Whether this involves hiring different talent or partnering with a trusted adviser who has the necessary expertise, there are many ways to get this right," says Kieninger.

Digital innovation through capability building

Developing the right talents and skills is one of the important transformation initiatives. While some people might immediately say digital technologies are the key success factor, those who are experienced in the process would say that's not necessarily so. Chan Suh, chief digital officer of business transformation specialist Prophet, warns against being seduced by the promises of technology's magical tools for creating revenue growth.

While businesses may need digital innovations such as artificial intelligence for deep insight, tech stacks are just tools and, without the right operating instructions, they either lie fallow or become money pits. Suh says it's a mistake that has cost global businesses billions of dollars in wasted investments.

"We need the conceptual strategies and innovations to guide our tech investments as well as the human expertise to use it properly. However, that human expertise is especially rare when it comes to navigating the highly complicated interdependencies of digitally powered businesses," he says.

With building capability, the key is the right mix of human expertise and technology working in a coherent, flexible operating model with the customer at the centre. "The goal of digital transformation should not be to become a more digital company, rather it is to transform into a modern, powerful enterprise capable of generating uncommon growth," says Suh.



Closing the communication loop brings continual improvement

Why is it important to have everyone in the loop? Effective communication binds all the other digital transformation success factors into a cohesive whole. But businesses are now under unprecedented pressure to provide a comprehensive digital offering, running the risk of insights being overlooked in the race to get to the finish line.

A digital transformation is an opportunity to open conversation channels with both customers and employees. "It's the only way that digital offerings can understand and meet the shifting needs and expectations of customers," says Gillian Mackay, head of consulting in Asia-Pacific at InMoment.



Empowering workers is a human success factor

Managing change and setting the scene for the new landscape can't be understated in the transformation process. And as continuous improvement becomes the norm through the coronavirus pandemic, it's critical leaders focus on collaboration, communication and building a culture that supports speed and agility in the face of so much uncertainty. It's why empowering workers is one of the digital transformation success factors.

Taking an employee-first approach is no longer a nice to have, but a need-to-have strategy for businesses navigating the current uncertainty,

according to Andi Britt, senior partner, talent and transformation, with IBM. "However, engaging and empowering a wide variety of audiences is a skill; one that can be cultivated with data-powered insights and in-the-moment coaching," says Britt.

"That means businesses need to implement design thinking, experiential learning and co-creational models that incorporate agile feedback loops with continuous learning and improvement. These methods can be applied for both internal and external best practices."

The pandemic, with the rapid adoption of remote working tools and the need to ensure employees' wellbeing and productivity, has only emphasised that leaders who prioritise collaboration and open communication pave the way for individuals to experiment and trial new technologies. "This open environment to trial and re-examine outcomes inherently fosters a more agile team structure, which we have learnt supports efficient and effective digital transformation efforts," says Britt.

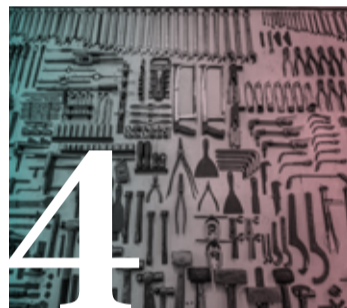
Upgrading tools with the right digital technologies

In the digital transformation process, the right tools are an effective suite of digital technologies. However, it's crucial to avoid the pitfalls of rapid digital innovation, particularly when it comes to data management.

Data is now at the core of every digital business. Irrespective of the industry, a growing movement towards an increasingly privacy-centric environment is now our new reality and consumers are taking note," says Prateek Dayal, chief strategy officer of Aqilliz.

"With the swathes of consumer data being ingested on a daily basis, organisations need to place greater emphasis on investing in technologies that can ensure greater compliance and transparency in how customer data is collected, stored and used in accordance with relevant privacy frameworks," says Dayal.

Yet when it comes to upgrading tools and infrastructures, one of the



common pitfalls is over-investing in single solutions, which are ultimately inefficient and lead to technology duplication. Instead, businesses need to select technologies that are inherently private by design, offering infrastructures built with compliance in mind.

"The lesson to be learnt when upgrading tools is choosing new technologies wisely, opting for solutions that can offer long-term holistic offerings, while placing precedence on those that can ensure greater compliance with an ever-evolving regulatory environment," he says.

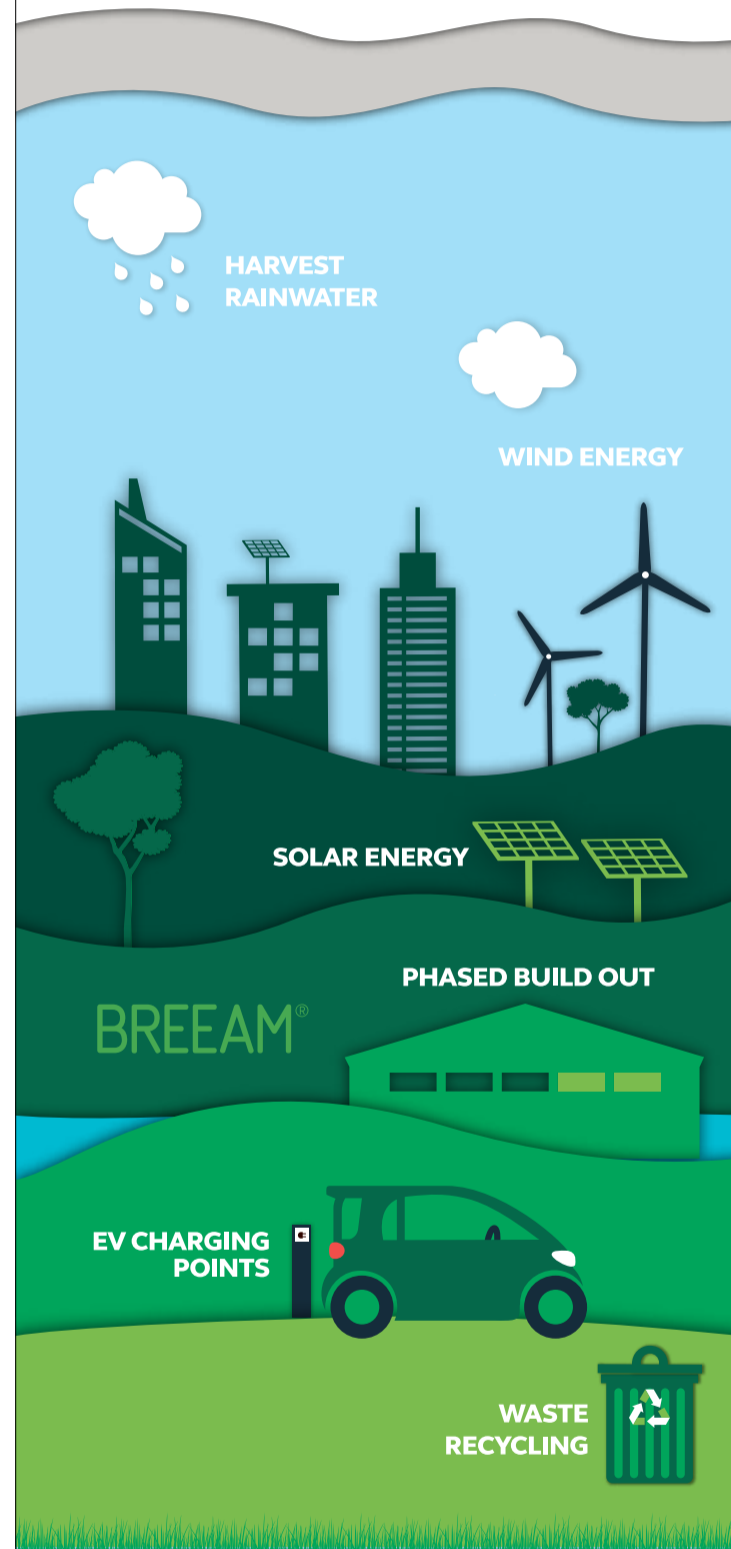


Mackay says the biggest mistake a business can make is assuming it knows what its customers want. "Digital transformation can only be truly realised by first collecting feedback to validate customer expectations. Communication prioritises what matters to customers and informs the channels to deliver for maximum benefit," she says.

By implementing fully informed changes to the business, it communicates to customers and employees they're being heard and builds trust, a valuable business commodity. "Having the trust of your customers and employees generates support and understanding towards the implementation of your digital transformation," Mackay concludes. ●

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VIRTUS

Data Centres



ENVIRONMENT

Action needed on cloud's carbon footprint

What impact is the recent uptick in online activity having on the environment and what are cloud providers doing about any potential damage?

Heather Richardson

Whether we know it or not, most of us depend on datacentres. Consider a typical day. You scroll through Twitter as the coffee brews or start the morning with a YouTube yoga class. At work, whether at home or in the office, you write emails, update Google Docs, use your company's cloud-based system. You might stream a podcast as you cook dinner, later catching up on a Netflix show.

All these actions come back to datacentres: buildings full of servers. The songs you stream are stored there, so are the photos you post on Instagram and the entire Netflix catalogue, as well as the cloud.

Because we're online 24/7, datacentres also work around the clock. And more of the world is connecting. Cisco estimates that by 2023, 66 per cent of the global population will be using the internet, up from 51 per cent in 2018.

How much energy is required to fuel our online habits? Here's a suggestion: in 2018, the video of the song Despacito became the most watched ever with five billion YouTube views and it has been claimed that the streaming of this video alone used as much energy as 40,000 US homes use in a year. YouTube reportedly made up 15 per cent of the 40 per cent increase in global consumer broadband traffic over worldwide lockdowns from this February to mid-April.

Though hyperscale datacentres can demand a lot from local grids, the global electricity use of datacentres has remained more or less flat over the past decade due to better efficiency, using around 1 per cent of the world's electricity. However, that figure is expected to increase, though estimates vary; the lack of global data makes it difficult to draw firm conclusions.

In terms of a carbon footprint, datacentres are thought to contribute roughly 0.3 per cent of CO₂ emissions. But in a 2015 paper, Anders Andrae and Tomas Edler of Huawei Technologies Sweden note that even if electricity use increases, "the trend of using renewable power is strong and it is likely many datacentres can be run GHG [greenhouse gas] efficient".

UK-based datacentre company VIRTUS uses a combination of solar, hydro and wind to fuel sites that run an IT load of up to 24 megawatts, "equivalent to a small town", says solutions director David Watkins.

"When you hear a lot of businesses talking about being efficient, especially with regards to energy, typically that looks at using less energy. Datacentres are a little bit unusual in this regard, in that, for us to be growing, we're going to be using more energy," Watkins explains. "That's why it's so important to use it effectively."

That means monitoring centres 24 hours a day to avoid running more equipment than is needed and investing in state-of-the-art tech, which tends to be more efficient. Large and hyperscale datacentres are generally more energy efficient than smaller ones.

Aside from the servers, datacentres also need to run cooling systems to stop the tech overheating. At VIRTUS, they chill air to 24C and blow it through the rooms. After



There's a lot of focus on sustainability, not just from our own side, from our peers as well. Everyone's keen to support these targets

passing through the computers, it's around 36C. The air is delivered back to the air-conditioner units, cooled in a heat-exchange process and then blown back into the rooms.

Waste heat can be redirected to a nearby facility, if something suitable exists. VIRTUS uses it to heat their on-site offices. In Nordic countries, waste heat can be pushed directly into district heating systems.

Standby generators, usually run on diesel, are a problem for datacentres looking to reduce their carbon footprint. In countries with stable grids, they're rarely used. "They're the world's most expensive insurance policy," notes Watkins, who says VIRTUS has had only two unplanned power transfers since 2011.

Microsoft aims to move away from diesel fuel by 2030, in line with their goal of becoming carbon negative by the same year. But an alternative has to be robust. VIRTUS is considering biodiesel. In July, Microsoft successfully tested emission-free hydrogen fuel cells on a row of servers for 48 hours.

Another sustainability issue is the batteries needed for uninterrupted power supplies, which bridge the gap between a power outage and the generators starting.

Lead-acid batteries, still the most commonly used in datacentres, are less efficient than modern alternatives, such as lithium-ion, although lithium production requires huge amounts of water. Silicon Valley startup Natron Energy is developing a sodium-ion battery specifically for datacentres, which can recharge in eight minutes and doesn't include any rare earth metals.

Watkins says government-set targets, such as the UK's climate change agreements, which reward emission reductions with lower tax levies, have been instrumental in encouraging datacentres to be more sustainable. "It puts pressure on business," he says.

The Paris Agreement and similar targets have inspired large-scale aims, such as Google's goal to source enough carbon-free energy to fuel their datacentres at all times; they're already the world's biggest corporate buyer of renewables.

It's driven from the client side, too. Watkins says clients used to be preoccupied solely with the security of their data, but now there's a similar focus on sustainability. "So we have certifications, for example, for energy management and also for environmental management," he points out.

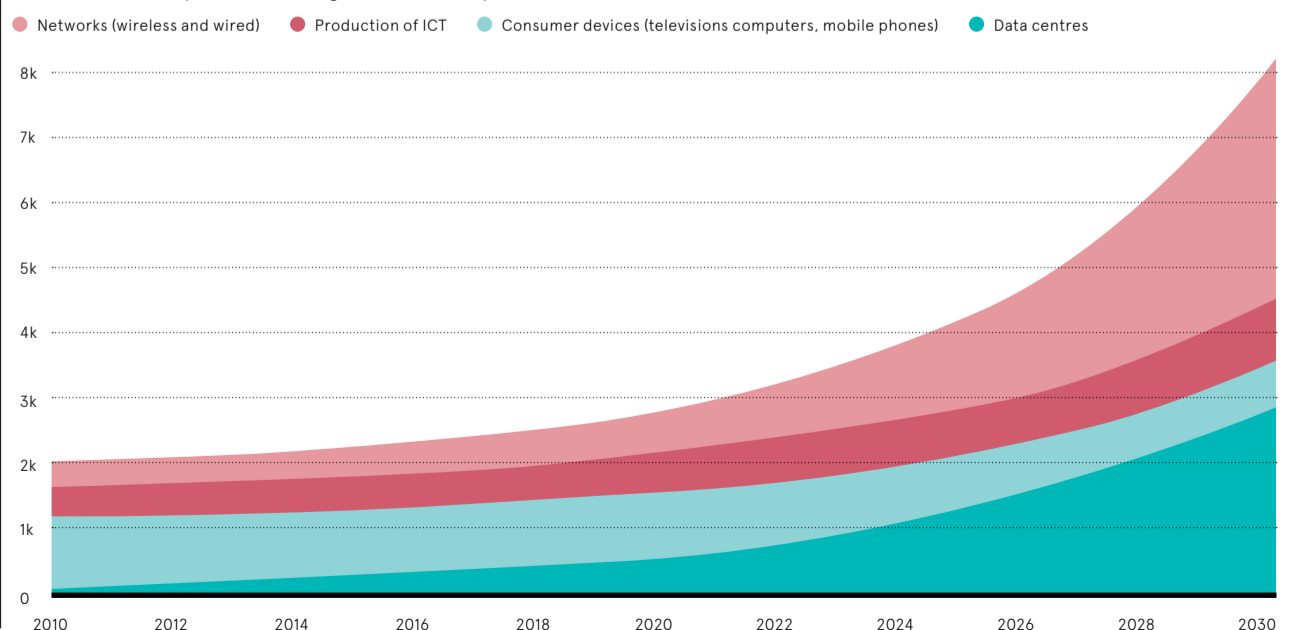
As consumers continue to pile on the pressure, datacentres have to find sustainable ways to scale. A shift to more efficient hyperscalers has helped. By the end of 2019, there were more than 500 hyperscale centres in the world, more than 100 of which had been built during the previous two years. Many hyperscalers are now looking to colder climes, such as the Nordic region, to reduce their cooling needs and improve efficiency, and for easy access to renewable power. Microsoft is even trialling an underwater datacentre.

"I think generally the message is quite positive," says Watkins. "There's a lot of focus on sustainability, not just from our own side, from our peers as well. Everyone's keen to support these targets." ●

IT ENERGY DEMAND TO SURGE

Capgemini 2020

Estimated electricity demand of the global ICT industry, in terawatt hours (TWh)



OPINION

‘Technology will sit very much at the heart of how we build back better’

Over the last few months we have all been using technology more. As we’ve emerged out of lockdown with restaurants and pubs once again replacing online quizzes as our favoured way to connect and socialise with each other, many of us remember the very important role technology played during the crisis. It kept us connected, allowing many businesses to continue operations, some using ecommerce, remote-working tools and other digital enablers for the first time.

The pandemic and the changes it forced really put rocket boosters under elements of tech deployment that already had some momentum, for example the shift to cashless payments and online shopping. Many businesses, which previously operated on a cash-only basis and had no online presence, have had to move very quickly to change this. Some sectors with more traditional working practices requiring paper and office-based work have also had to adopt the cloud, as well as other technologies that allow for more flexible working arrangements.

The technology industry has really got behind businesses and individuals during this time and digital transformations that might otherwise have taken years, or not happened at all, were achieved in a number of weeks. The question now is, how do we lock these benefits in and ensure that, as we get back to a new normal, digital technologies remain a strategic priority for businesses, not just a nice to have?

In a series of surveys techUK commissioned at the height of lockdown, we came to understand that 78 per cent of businesses believed they would be more dependent on digital. Matching this, an overwhelming 82 per cent of the general population felt digital skills would become more important in the next 12 months. If we get it right, this could mark a sea change in the digital transformation of the UK.

Already, we are seeing great work to make the most of these early indicators of change. On the skills front, the Department for Education, working with industry, launched the Skills Toolkit, a new online learning platform to help boost the nation’s skills while people stay at home. Cisco’s Networking

Academy, one company contributing to the Skills Toolkit, has seen usage increase by 45 per cent in the UK over the past year.

However, there are areas where we must work closely with government to ensure we can continue to move in the right direction when it comes to supporting digital transformation and keeping the UK at the heart of the global digital economy. For example, everyone in the UK must have access to world-class connectivity. Furthermore, ensuring we are a first adopter of 5G technologies must be a strategic priority for the UK.

There are also areas such as digital ID that require urgent attention. As more services continue to move more quickly online, individuals must be able to prove who they are safely and securely. A recent McKinsey report estimates that digital identities could boost UK GDP by up to 3 per cent. We cannot allow areas such as digital ID be a stumbling block for digital transformation.

Our recovery from this crisis will by no means be easy. Technology will, however, sit very much at the heart of how we build back better. As a sector we need to continue to help build the foundations for future success. This will be done through collaboration with each other, government and other organisations including regulators in areas such as skills, to ensure the whole nation, regardless of background, can take part in the digital economy. But collaboration will also deliver forward-thinking policies that will continue to fuel innovation and our digitally led recovery. ●



Julian David
Chief executive, techUK

UK IT professionals prepare for life in the new normal

The coronavirus pandemic may not have completely dampened confidence in the technology industry, but it will have a major impact on how companies approach digital innovation and attract the best IT talent moving forward

COVID-19 has impacted all industries around the world, but confidence in UK technology has remained resolute. The CWJobs Confidence Index 2020, an annual research report studying the thoughts and feelings of UK IT professionals, was carried out in April, at the height of the coronavirus outbreak. The research showed that 81 per cent of respondents were confident in the current state of the tech industry, just 8 per cent lower than 2019.

Confidence in the industry may remain reasonably robust, but the effect of COVID-19 on the IT job market, specifically, has still been felt. According to the Recruitment and Employment Confederation (REC), the number of job adverts in the UK dropped from 1.78

million in March to 1.27 million in May, resulting in an unusually large talent pool compared to the UK norm.

However, the market has already begun to absorb much of the excess talent. The REC’S Jobs Recovery Tracker has recorded month-on-month gains in job listings since May, with a particular surge in adverts seeking IT professionals. The crucial role IT workers have played in enabling companies to adapt to remote working is likely to continue to bolster the resilience of the tech job market in the “new normal”.

“Tech was vital in enabling that sudden shift to working from home, which has changed the way many people within organisations view the IT department,” says Dominic Harvey, commercial director at CWJobs. “Tech professionals

really proved their worth, so much so that in the CWJobs Confidence Index 2020 almost half of IT leaders said they expect to have their budgets increased in the next year. Despite the insecurity COVID-19 brings, many IT leaders will be pushing for more resources to ensure their systems are secure and can work remotely.”

As rising IT budgets and an amplified dependency on technology in an age of more home working create greater demand for tech talent, the UK’s digital skills gap will widen further. The CWJobs Confidence Index 2020 identified IT support, cybersecurity and cloud as the top skills needed to succeed in the current tech industry.

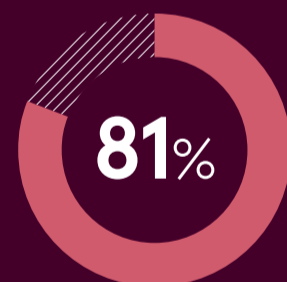
CWJobs saw the number of applications for specific sub-disciplines, such as software development and support, nearly double in Q2. Meanwhile, skills related to artificial intelligence and the internet of things will only be more sought after in the coming years as organisations continue to embrace such technologies to power their digital transformation.

Accumulating the best tech talent when the job market is suffering from a digital skills shortage is no easy feat, but it is crucial to companies succeeding in an increasingly competitive and challenging business landscape. Doing so means establishing the right balance between not just attracting tech professionals, but also upskilling.

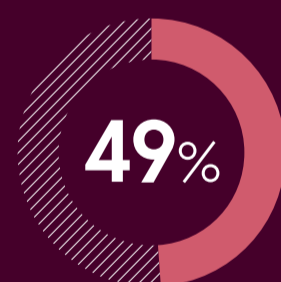
“People in tech like to be in a company that’s driving forward, not stagnating,” says Harvey. “If you are really pushing innovation and creating a culture of ideas, that encourages people to join you because they feel like they can be part of the solution. Promoting a strong career in technology also applies to retraining and upskilling opportunities, while customised learning and development are key to retaining top talent. Companies should, therefore, invest in ongoing training to inspire commitment.”

“Organisations need to rethink how they create and share job ads to attract the right candidates. Recent research among CWJobs candidates shows salary, location and required skills are the most important elements they want to see. Meanwhile, when companies really advocate for UK tech, we find it’s a great way to attract and retain top talent. As IT emerges from the pandemic, as one of the most resilient sectors, a strong attraction and retention strategy in this area is crucial to long-term business success.”

CWJOBS CONFIDENCE INDEX 2020 KEY HIGHLIGHTS



81% of tech professionals are confident in the current state of the UK tech industry vs 89% in 2019



49% of IT leaders believe their business will increase tech budgets in the future



71% of tech professionals agree that tech has significantly helped support the UK economy



46% of IT professionals in the IT&Telecoms sector think their salary will increase in the next year

TOP 3 REASONS FOR CONTINUED CONFIDENCE:



01 Existing tech skill set



02 Technology being produced



03 UK’s status as an IT leader

For more information please visit cwjobs.co.uk/recruiters/confidence-index-2020



AUTOMATION

Preventing a digital underclass

What is the government and private sector doing to adapt for a future when millions of workers are displaced by digital transformation and automation?

Jonathan Weinberg

As companies of all shapes and sizes race to accelerate their digital transformation strategy, one important question weighs heavy: what is the future for the spare humans and how do we prevent the creation of a digital underclass?

Just months into the coronavirus pandemic, everyone from chief executives to government ministers and employment charity leaders have seen the impact of digital transformation on people as well as operating models.

Last year a report from the Office for National Statistics found that out of the 19.9 million jobs analysed in England in 2017, 1.5 million people were employed in jobs at high risk of automation. That was well before the current expert predictions that the economic fallout of coronavirus could see up to five million people put out of work.

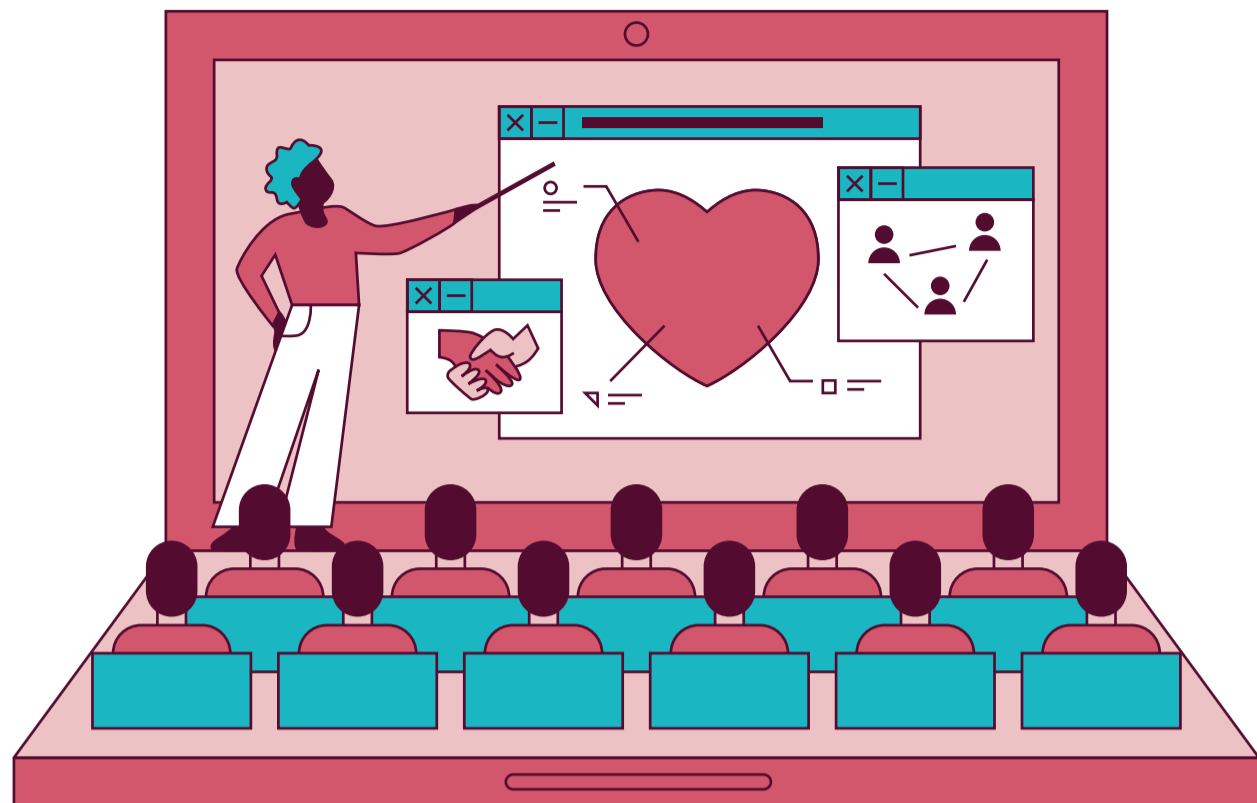
Chetan Dube, chief executive at IPsoft, an American multinational focused on artificial intelligence (AI), cognitive and autonomic solutions for enterprises, is well aware of the risks. "There will be some people who will struggle for different

reasons to master digital skills and this risks them becoming a digital underclass," he says.

"Business and human resources leaders who know employees will be displaced should start thinking now about the partnerships they can form with industries that rely on more innate, human capabilities rather than digital skills." He highlights the example of elderly care, which could be a potential home for out-of-work contact centre workers given their interpersonal and customer care skills.

"It's so important that the private sector assumes its responsibility, as much as that of the government and public sector, to help those who can't be reskilled within their own companies to find work with their existing skillsets," says Dube.

As chief executive of the WEA, the UK's largest voluntary sector provider of adult education in England and Scotland, Simon Parkinson oversees a body of students of whom 44 per cent are on income-related benefits, 38 per cent live in disadvantaged post codes, 41 per cent have low or no previous qualifications and 47 per cent are over 60.



It's important that the private sector assumes its responsibility to help those who can't be reskilled within their own companies

Parkinson explains that with 11.5 million UK adults lacking basic digital skills and the country losing out on £63 billion in GDP from its existing digital skills gap every year, the challenge is stark. But he believes solving it starts with supporting people to build their confidence "to try something new without fear of criticism".

The challenge, he says, is not only knowing which digital skills workers will need for a certain job, but also how employers will expect them to deploy those skills.

"Digital upskilling is a necessity for everyone. But it is not an end in itself. It is about understanding how to use technology to achieve goals, which usually have nothing to do with the technology itself," says Parkinson.

"So much involves having digital skills to even allow you to engage effectively in the job market let alone in employment, from a practical point of view, enabling people to search online for jobs, create CVs and complete online applications to open up a world of opportunities."

Of course, many other socio-economic factors will come into play. In large parts of the country, internet connectivity is still not at superfast levels or affordable if it is. Supposedly everyday things that many take for granted are also out of reach for too many, including being able to pay for sufficient mobile data each month or even owning a compatible device.

Nicola Inge, employment and skills director at Business in the

Community (BITC), is working hard to prevent a digital underclass growing from the impact of digital transformation. BITC wants employers to remove the barriers and systems that keep opportunities available only to certain groups and people.

"For example, in our programmes to ensure opportunities for development are available to older workers, we are already seeing an impact. We've seen a difference between those on our Bristol Accessing Experience programme, who don't have access to devices, lack credit to top up and/or digital skills and haven't been able to access the new online content, to those in Northern Ireland who typically have fewer barriers to work," says Inge.

But she warns: "For groups facing barriers to work, such as ex-offenders, homeless people and refugees, there's a strong risk that, as the labour market is flooded with newly unemployed people and competition for jobs intensifies, they and other marginalised groups may find themselves once again at the bottom of the pile."

While many cite the responsibility businesses have, there is also a political imperative too. In 2017, a report released by the European Commission revealed that 44 per cent of Europeans aged 16 to 74 do not have basic digital skills.

Earlier this year, the World Economic Forum launched the Reskilling Revolution Platform to provide better jobs, education and skills to one billion people in the next ten years. Its own predictions were that 75 million jobs could be expected to be displaced due to automation and technological integration. But it offset the job losses, saying: "The transformation will also create demand for an estimated 133 million new jobs with vast new opportunities for fulfilling people's potential and aspirations."

And in its March Budget, the UK government promised a National Skills Fund worth £2.5 billion to drive down inequalities and gaps, but it

remains to be seen if the huge hole in the public finances from COVID-19 support measures will hit this.

Other organisations are playing their part too. The Nesta CareerTech Challenge aims to uncover bold solutions to future employment challenges. And in Birmingham, a £5-million digital retraining fund from the West Midlands Combined Authority was established to pay for digital training for up to 1,900 people over the next three years. This includes adults in low-paid employment, those with autism, under-represented BAME (Black, Asian and minority ethnic) communities and people suffering poor mental health.

Helen Horner, chief executive of charity Digital Anthropology, remains optimistic of preventing a digital underclass if the right funding can be found and there is a focus on retraining people in areas that can't be automated, enabling them with softer skills such as empathy, emotional intelligence and resilience.

"We need investment from the AI, robotics and machine-learning developers to enable us to fund educational courses, especially for those individuals who do not have university-level education and whose jobs have already been displaced or are at risk," she says.

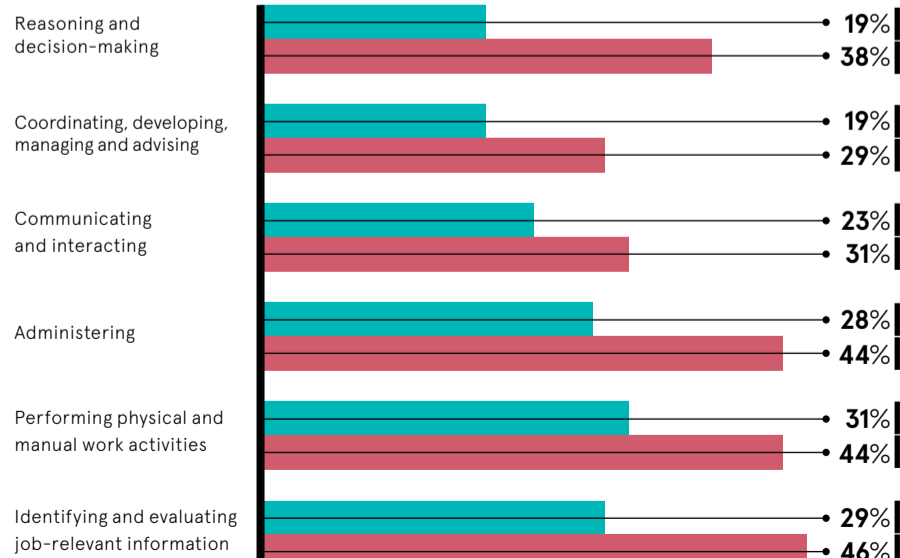
"Through ongoing research, we will guide individuals towards retraining and upskilling for occupations at least risk of automation. Demand for shopworkers is declining rapidly as a result of COVID-19, but they have social skills and interaction skills that with additional training could be used, for example, in healthcare roles which are increasing."

Fred Flack, head of talent academy CloudStratex, believes there must be a partnership approach between government, business and education providers. He says: "We need more bold thinking. Whether you are a startup, small or medium-sized enterprise, or multinational, there is an important role for you to play in preventing the emergence of a digital underclass." ●

MACHINE WORKING HOURS TO RISE SIGNIFICANTLY

Share of jobs done by machines compared with humans in 2018 and 2022

● 2018 ● 2022



World Economic Forum 2018

Need for digital speed

The coronavirus pandemic could spell the end of long-term digital transformation projects that span five years or more. Customer data is crucial to enabling faster digitalisation with better results

The notion of a five-year digital transformation programme, supported by a plethora of costly professional services partners, is one that has prevailed for much of the last decade. Rightly or wrongly, businesses felt they had the luxury of time to advance their digital strategy and decide the best way to build new systems, utilising the right tools.

With the sudden emergence of the coronavirus pandemic, any idea that a business can wait years to reap the rewards of digitalisation have evaporated. Although people's behaviours were already evolving at a steady pace towards digital channels and platforms, COVID-19 has rapidly accelerated that. By forcing migration to online, the pandemic has meant companies needed to build digital competencies extremely quickly.

In a recent study by Twilio, UK businesses said COVID-19 has speeded up their digital transformation goals by an average of 5.3 years. To achieve these ambitious objectives and reach their desired digital state as quickly as possible, organisations are realising customer data utilisation is key.

"Anyone can implement a tool or embark on a project and deliver that successfully, but the only way of really measuring it and driving businesses forward is by basing it on data," says Jonathan von Abo, head of business development, Europe, Middle East and Africa, at Treasure Data, whose customer data platform (CDP) provides the ability to aggregate, unify and analyse massive volumes of scattered and siloed data.

"Everyone's been collecting data and owns big data. It's now an age of data activation because having it is one thing, but actually being able to use it, and in real time, is another. That's the game-changer.

"Data was historically used to analyse past behaviours and then applied to the next behaviour. But the time-frame was one to two months, looking at what happened last month to decide what to do next month. That doesn't stack up in today's digital economy. The challenge is how to gain real insights and make data-driven decisions in real time.

"Companies are understanding more now that while they have loads of systems with rich, independent data sets, what they really need to understand is the entire customer lifecycle behaviour, so they can respond to a customer's needs at the right time in the right manner. That is the ultimate pressing need and now more so than ever before."

Organisations invariably have multitudes of different data stores in multiple types, formats and languages. With Treasure Data's platform, companies are able to take data, regardless of where it's from or what format it's in, and bring it into the CDP system unchanged. Its seamless



It's now an age of data activation... being able to use it, and in real-time, that's the game changer

approach means organisations don't have to go through the technical challenges to understand the data structures of disparate systems that are holding data.

Businesses no longer have the time to jump through those technical hurdles, especially in the current business environment. With the rapid digital acceleration, organisations need to access data and build insights quickly. Whereas projects used to have timelines running into months and years, now it's days and weeks. Treasure Data helps companies bring their customer data together in a short time and to make it actionable.

"We were born out of making data actionable," says von Abo. "From day one, that was the brief. Treasure Data's founders started building a CDP before CDP was even a term. It was a

big-data machine that could take large volumes of data and turn it into something that was useful and actionable, in the shortest time possible. We've stuck to that mindset over the last ten years and our focus remains on bringing together data and all the elements of a customer engagement journey into one single record.

"Our goal is to be best of breed in terms of that data cleansing and data consolidation, and then making the customer data available in very rich or precise segments to other best-of-breed tools. While we're now seeing data warehouse players and data activation channels trying to pivot into the data collection and normalisation space, we're in the best position to deliver that capability because we've been doing it for such a long time."

As customer data continues to grow in the post-COVID age, companies require the flexibility, agility and ability to scale alongside that. As an enterprise data platform, Treasure Data's CDP tool is built with scalability and security at the forefront. The company utilises open source technology and all its methodologies are developed to enable it to scale with the needs of its customers. As a cloud-based platform, it is also easier and more cost effective to scale up or down as required.

The COVID-enforced way of working is unlikely to go away for some time and, even if it eventually does, the broader impacts of the pandemic on digital strategies will not reverse.

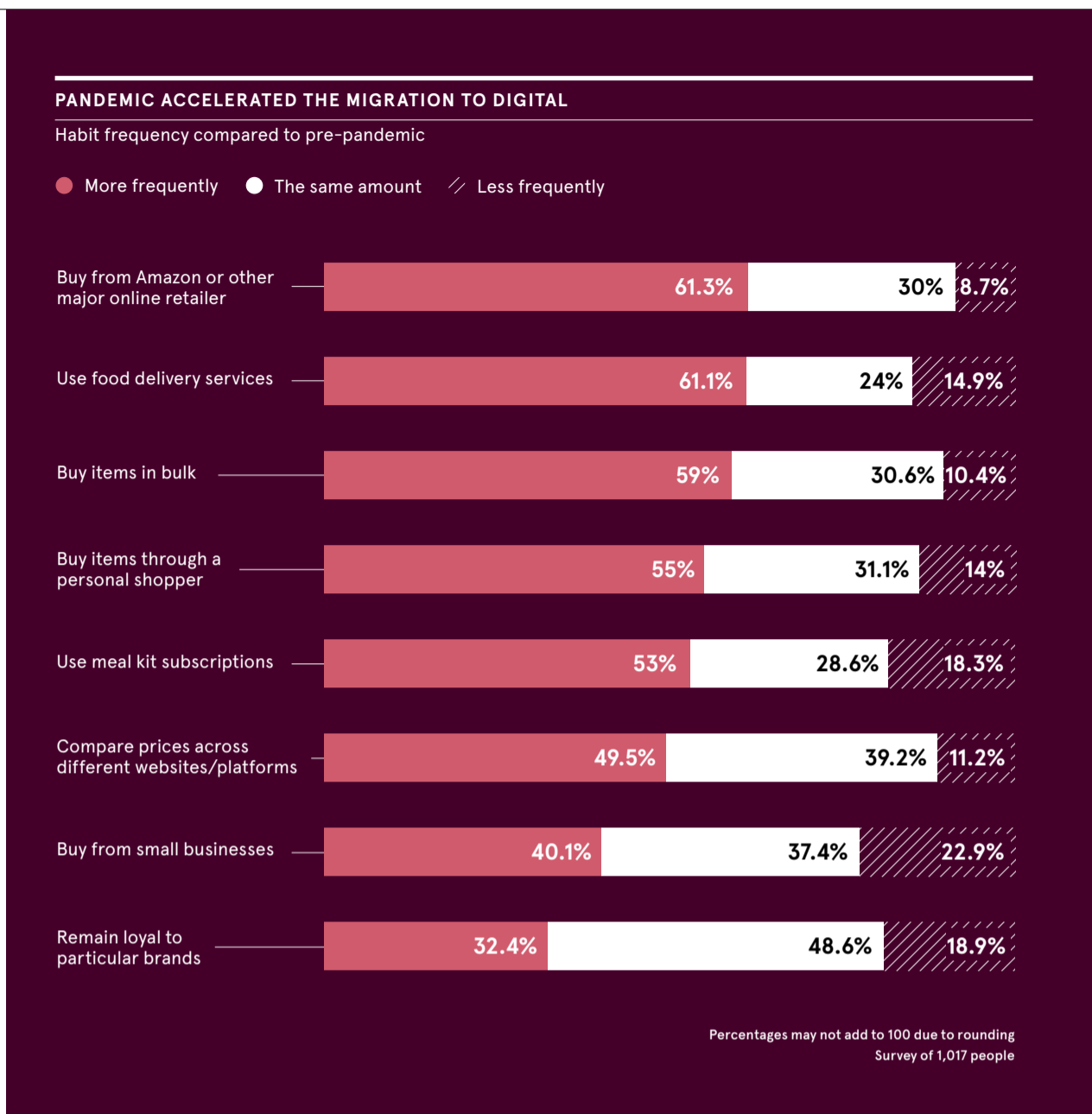
In this environment, organisations embarking on large business transformation projects that take years to consult around, plan and implement are likely to suffer.

"I don't think this acceleration is going to stop once COVID subsides," says von Abo. "As a result, companies need to be a lot more targeted and specific about which areas of the business they need to optimise, and they're going to try and do them in much quicker sprints. If you're going to spend two years on a project, you'll be left far behind. By the time you've eventually deployed, the market will have already moved on.

"Organisations are also looking a lot more differently at their technology stacks. They're increasingly wanting options that provide the greatest level of flexibility as the business landscape continues to change. Tools like ours deliver that flexibility by bringing other best-of-breed technologies in and making it easy to work with different data sets without having to change the way you hold your data or how you capture or activate it. That's going to be the future."

For more information please visit treasuredata.com

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If you're going to spend two years on a project, you'll be left far behind

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