DIGITAL TRANSFORMATION

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DISRUPTION

Leaders still don't 'get' disruptive innovation

If you don't understand disruptive innovation, your digital transformation efforts could all be for nothing

Duncan Jefferies

Disruptive innovation is a victim of its own success. Since Clayton Christensen coined the term in 1995, it's become the mantra of Silicon Valley entrepreneurs seeking investment for their apps and tech companies hoping to make their latest devices sound more exciting. It's the buzzword of choice for on-trend executives, a blanket term that's frequently applied to many new technologies, services and business practices. But despite widespread use of the phrase, few people seem to know what disruptive innovation really is.

The website of the Christensen Institute, a think tank co-founded by Mr Christensen, says disruptive innovation actually "describes a process by which a product or service initially takes root in simple applications at the bottom of a market – typically by being less expensive and more accessible – and then relentlessly moves upmarket, eventually displacing established competitors".

So on this basis an internet-enabled smart fridge doesn't qualify as disruptive. But the personal computer – which, over time, eliminated the market for expensive mainframes and minicomputers – does.

Providers of disruptive products or services such as the PC, or more recently Netflix, can gain a foothold at the bottom end of the market because established players tend to focus on sustaining innovations, such as incremental improvements to their core products or services.

While it's natural to want to keep paying customers happy, "the risk with this blinkered approach, however, is that you could be neglecting an overlooked area of the market that could actually be a key growth driver," says Huw Owen, a regional head at software company Couchbase.

Kodak's downfall is a classic example of how this blinkered approach can backfire: it invented digital photography but failed to capitalise on the technology due to fears that it would cannibalise their film business. Mr Christensen calls this tension, between sustaining innovation and riskier but perhaps ultimately more rewarding disruptive innovation, the "innovator's dilemma" – also the title of his best-selling book on the subject.

It's a dilemma that's further complicated by the fact that the new product or service may – initially, at least – be inferior to established market benchmarks. As a result, "disruption is usually against everything the incumbent stands for," says Victoria Harrison-Mirauer, discipline lead for innovation at Ashridge Executive Education, part of Hult International Business School, and founder of private innovation practice The Ideas Machine.

Isiah Gibson / Unsplash

Dr Raluca Bunduchi, senior lecturer in innovation at the University of Edinburgh Business School, says that disruptive innovation can actually be a misleading term. "To talk solely about 'disruptive innovation' is counterproductive," she explains. "It is more useful to consider what the innovation disrupts: the underlying technology, market, business model or product/service. This allows us to consider the repertoire of adequate responses."

In some cases the threat from a new innovation can be neutralised if it is quickly adopted by the whole industry. However, this very much depends on the incumbents spotting it in time.

Ben Little, founder and director at innovation consultancy Fearlessly Frank, believes that many organisations simply don't allocate enough resources to horizon-scanning and scenario development. "Given the prevailing internal 'bubble', even well-resourced businesses that do spend money on market intelligence often fail to respond to the signals it suggests," he says.

Indeed, Ms Harrison-Mirauer says she has been struck by the arrogance of some incumbents, which she says have adopted a 'worst case we will acquire them' strategy about the disruptors in their sector. "The other challenge outside sector myopia and arrogance is underestimating the speed with which disruption can take effect," she adds.

Yet incumbents also have a lot going for them. "They can scale quickly, take a longer-term view and have deeper pockets. Importantly, they also have established customer relationships and often some excellent data and insight about market opportunities," she says.

It's these customer relationships that can help incumbents navigate the choppy waters of disruption. "For example, in the face of disruption from the advent of the PC to their main business of selling hardware and the subsequent commoditisation of the hardware business, IBM could leverage its strong customer relationships to transform into a service consultancy company in the 90s," says Dr Bunduchi.

In fact, Ramyani Basu, digital transformation partner at AT Kearney, believes that when innovation hits, business turnaround is nigh-on impossible if you're not truly customer-centric. "History has shown time and time again that those who survived disruption were those who listened to their customers' pain points," she says.

"Netflix didn't kill Blockbuster, ridiculous late fees did. And it's the same for Uber, Amazon and Airbnb – the technology itself isn't the disruptor, being customer-centric is."

One way for an incumbent to tackle the threat from disruptive entrants is to develop a new rival business outside their core offering, though convincing the board and leadership team that this is the right strategy can sometimes be an uphill battle.

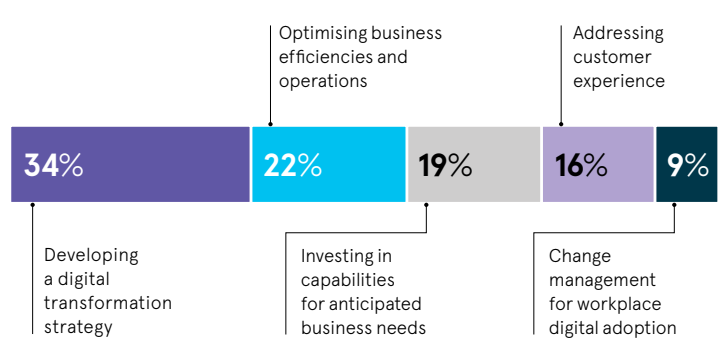
The C-suite should also embrace the fact that risk and failure are essential components of true innovation, green-lighting ideas quickly and learning on the fly so that new products or services don't become obsolete before they hit the market.

The smartest organisations also think of themselves as collaborators and partners in an innovation ecosystem that includes startup communities, universities and other organisations beyond their own sector. "Organisations that are able to collaborate, to partner, to acquire without killing off the acquisition – they are the ones more likely to thrive in the new disruptive landscape," says Ms Harrison-Mirauer.

Finally, as Nick Parminter, chief executive of consultancy Class35, says: "In general, it is good practice to ask yourself whether your business model would still stand if you were starting your business today. If the answer is no, then beware of disruption."

TOP DIGITAL PRIORITIES BDO 2019

Organisations were asked to select their main priority for digital transformation



ARTIFICIAL INTELLIGENCE

Why AI is both overhyped and underused

The impact of the integration of artificial intelligence on a company can be huge, but what happens when adoption is driven more by media and PR hype than actual business needs?

Flashpop/Getty Images

Christine Horton

It's not unusual for new technologies to be accompanied by often intense levels of promotion, long before they even hit the market. There is perhaps no better current example of this than artificial intelligence (AI) hype.

With widespread media coverage fuelling debate over its potential impact on society, AI has now expanded beyond the tech industry into the public arena. Given this level of AI hype, it's no surprise that both established tech companies and AI startups are keen to jump on the trend.

Chief information officers (CIOs) too are keen to take advantage of the so-called next big thing. According to the Gartner's *2019 CIO Survey*, the number of enterprises implementing AI grew 270 per cent in the past four years and tripled in the past year.

But with so many tech companies claiming to be developing AI-based solutions in some form, is it possible we're struggling to separate AI hype from reality?

At first glance, certainly, there appears to be an element of firms jumping on the AI bandwagon. A 2019 report from venture capital firm MMC Ventures found that 40 per cent of 2,830 purported AI startups in Europe don't in fact use any AI in their products.

However, author of the report and head of research at MMC Ventures David Kelnar points out: "Usually, companies are not misrepresenting themselves, they're being misclassified by others and those misclassifications are sticking."

Mr Kelnar explains that companies classified incorrectly as AI are typically offering traditional, rules-based software solutions. They include no machine-learning, software that improves with experience, instead of following a pre-defined set of rules.

On top of this misclassification, there has been a surge in the number of AI patent filings in recent years. Peter Finnie, partner at IP law firm Gill Jennings and Every, says businesses are using AI in their strapline or marketing collateral, suggesting it constitutes a core part of their technology or value proposition and potentially making them more attractive to investors.

In fact, the MMC Ventures research notes that AI companies attract 15 to 50 per cent more funding than typical software companies.

However, last year the European Patent Office issued fresh guidelines examining the patentability of AI and machine-learning based on the principle that all patentable innovations must not be obvious. According to Mr Finnie, this will render many AI applications "unpatentable and, ultimately, far from innovative in and of themselves".

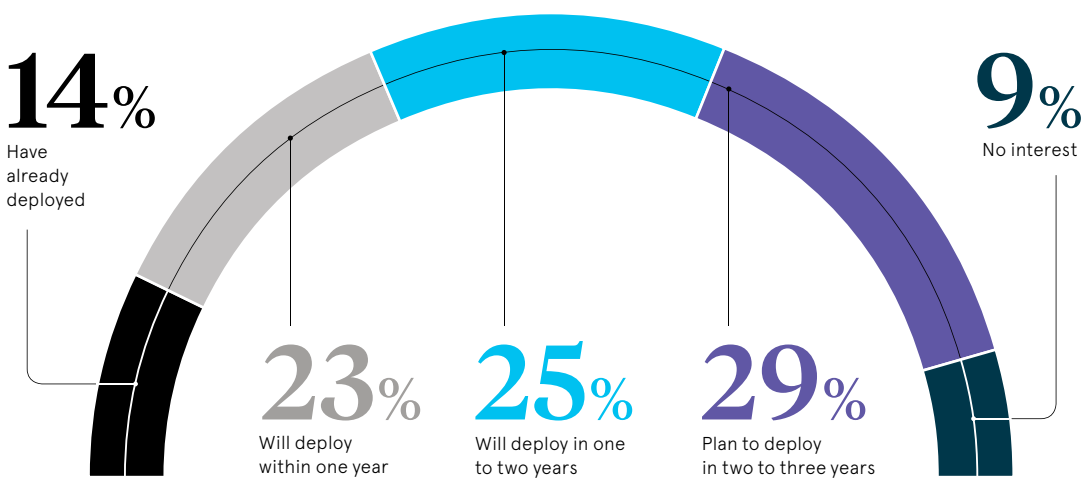
But with AI used as an umbrella term for so many different types of technologies, it can be difficult for customers to assess the potential opportunities for their organisation and even harder for companies with real, differentiated AI offerings to cut through the noise in the market.

"It's essentially become a marketing term and a buzzword, without specific technical meaning," says Hilary Mason, general manager of AI and machine-learning at Cloudera.

ENTERPRISE PLANS TO DEPLOY AI

Global survey of chief information officers

Gartner 2019



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Indeed, in the UK, media coverage of AI is dominated by industry promotional events, startups, buyouts, investments and conferences, according to a study by the Reuters Institute for the Study of Journalism and the Oxford Martin Programme on Misinformation, Science and Media.

The report notes: "AI products are often portrayed as a relevant and competent solution to a range of public problems, from cancer and renewable energy to coffee delivery. Journalists or commentators rarely question whether AI-containing technologies are the best solutions to such problems or acknowledge ongoing debates concerning AI's potential effects."

> **AI becomes a solution looking for a problem in some businesses, leading to applications that are not impactful or meaningful in terms of moving the needle for the business**

So what impact is this AI hype having on how enterprise is adopting the technology? "With so much focus on apparent AI implementations and their benefits, there is a rush to be seen to be 'doing AI'. The hype is driving higher adoption," says Lal Hussain, director of IT applications at IT systems integrator Insight UK.

Mr Hussain says this can lead to inflated expectations, which are not always met, and notes adoption is also being driven by the need to be seen to do something.

He explains: "AI becomes a solution looking for a problem in some businesses, leading to applications that are not impactful or meaningful in terms of moving the needle for the business. Teams want to give 'it' the 'AI treatment', they don't always know what 'it' is, but they know they want it faster and with less human involvement."

Euan Cameron, PwC's UK AI leader, observes: "In the enterprise world, AI is in the curious position of being simultaneously overhyped and underexploited."

However, he argues that it is far more common to see businesses that are attracted by the potential the technology offers, but are slow to invest because they worry they lack the required skills or processes to rollout the technology effectively.

Despite some obvious concerns, there are positive outcomes attached to all the AI hype. For example, the extensive media coverage has helped to elevate the AI conversation within organisations.

"At least one positive aspect from the hype around AI is that it's not only a technology conversation anymore; it's very much top of mind for anybody from all business horizons [with] marketing, customer service, legal and operations realising that their job is going to be transformed in some way by AI in the coming years," says Anne-Laure Thieullent, AI and analytics group offer leader at Capgemini.

"It therefore also forces us to focus on the applications of the technology, rather than only on the technology itself, which is very positive."

Mr Kelnar at MMC Ventures agrees that the misclassification of AI startups should not obscure the broader, positive findings of the research. "Our analysis revealed that across Europe, one in twelve startups are putting AI at the heart of their products and development plans, that's up from one fifty, five years ago. We have entered the era of the AI entrepreneur disrupting incumbents by leading the paradigm shift to AI. In 2019, AI entrepreneurship is becoming mainstream," he says.

So while there is undoubtedly some leaping on board the AI bandwagon, there are enterprises that are realising significant returns from their investment in data analytics, data science, machine learning and AI.

"The noisy market means customers must be active and smart in vetting and evaluating how an AI investment will bring them value, and maintain a relentless focus on the business or product outcomes that are meaningful to them," says Cloudera's Ms Mason.

"In general, you should always use the simplest technical approach that will get to that outcome and value. This is even more true in the noisy world of AI." ●

40%

of Europe's 2,830 purported AI startups do not use AI in a material way in their products

1 in 12

of all startups in Europe are AI companies

MMC Ventures 2019

37%

of global enterprises have implemented AI in some form, up from 25 per cent in 2018

270%

increase in the number of enterprises implementing AI over the past four years

Gartner 2019

Commercial feature

How third-party software support helps you to the cloud

IT professionals are deploying third-party Oracle and SAP support to help fund digital transformations, accelerate innovation and assist with the migration to, and support of, new cloud-based systems

For business owners and C-suite executives, digital transformation means far more than system integration or migration. It's achieving an enterprise-wide state where connected functions accelerate business activities, processes and competencies in agile and innovative ways. The transformation is driven by its promise to power revenue growth, improve the customer experience and outpace the competition.

Digital transformation is by no means easy, as proven by recent high-profile failures at recognised and respected companies. The hype of digital transformation from consultants and software publishers can mislead when it focuses only on the desired end-state and minimises the true amount of effort, resources and budget required to reach that state.

Make no mistake, migrating from stable, highly customised, on-premise systems to cloud systems will always be time intensive, expensive and functionally incomplete.

No matter where you are in your digital transformation journey, you do have options such as third-party software support that can address these challenges and improve the odds of success. Providers such as Spinnaker Support facilitate your transformation by supporting your on-premise enterprise software, saving money for innovation projects and giving you control over the speed and direction of your transformation.

According to research firm Gartner, the third-party Oracle and SAP market has been expanding over the past decade. Thousands of global businesses are balking at the increased costs of support, the decreased personalised service and the forced march to premature cloud solutions imposed by Oracle and SAP. Third-party support vendors have proved their merit, and businesses are actively using this service to help facilitate and fund digital transformation.

That's good news because digital transformation does not come cheap. A recent survey from Altimeter Digital found 44 per cent of companies allocate an annual budget of $15 million or more to the effort. With a switch to third-party SAP or Oracle support, IT leaders can immediately reallocate significant savings on maintenance fees towards transformational projects that require new software, hardware, cloud services, technical staff, training, system integrators or consultants.

"Third-party support directly contributes to the success of system migrations and updates," says Iain Saunderson, chief technical officer at Spinnaker Support. "Smart global organisations are engaging with third-party support vendors because it provides their IT teams with cost-effective, responsive, day-to-day support for existing systems, while freeing them to concentrate their full attention on the transformation initiative."

> **Customers gain control of their technology roadmap because Spinnaker Support offers the entire range of services**

With third-party support, organisations also have complete strategic flexibility. For example, some Spinnaker Support customers take a cautious, phased cloud migration approach instead of a riskier rip-and-replace scenario for the entire infrastructure. Others choose to keep their options open rather than be forced down the software vendor's cloud roadmap. Still others forgo an upgrade or migration and instead focus on improving the customer experience through new mobile solutions, internet of things, analytical tools and cognitive thinking products.

Customers gain control of their technology roadmap because Spinnaker Support offers the entire range of services, from support to managed services to strategic consulting. This includes lift-and-shift consulting capabilities to transport enterprise applications from on-premise to public cloud, plus cloud managed services to maintain those applications once they've been relocated.

One customer, a leading European telecommunications provider, needed to migrate its Oracle E-Business Suite from an on-premise private cloud to Amazon Web Services. Spinnaker Support consulted on system design, installed and implemented system elements, and managed and supported both systems, which it continues to do today.

These are just a few ways in which Spinnaker Support has helped more than 1,100 customers in the past decade. Our experienced software experts are embraced as a true extension of the customer's internal IT team. As digital transformation projects move forward, we provide a wealth of technology advice to help ensure interoperability, security and strategic roadmap planning.

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SPINNAKER SUPPORT

Commercial feature

Future-ready transformation drives higher profits and increased loyalty now

Many businesses have pursued digital transformation programmes for a number of years and they run the risk of digital fatigue. Using a more structured roadmap, centred on both customers and employees, businesses regain momentum and achieve growth

Companies that substantially complete their transformations and become future ready tend to enjoy margins 16 percentage points higher than their industry's average, according to MIT Center for Information Systems Research.

However, for many businesses, achieving a future-ready state proves to be challenging. A new paper by the transformation consultancy Avanade shows that many stitch together legacy systems, or have highly siloed departments and an array of technology systems in place, leading to profits stagnating at up to 5.1 percentage points below the industry margin.

There is a renewed urgency to transform successfully as those companies that do so are consistently delivering richer growth margins and stronger customer satisfaction scores.

For transformations to be effective, they need to put customers at the centre, but this focus alone is not enough. To achieve high customer satisfaction, companies need to have employee experience as a core element of their transformation, according to Annette Giardina, UK and Ireland business applications lead at Avanade.

"We know that employee satisfaction leads to much better results for customers, so the technology they use has to be flexible, modern and helpful instead of getting in the way," she says. "Technology should replace the mundane tasks so staff can focus on value-added activity, which in turn is more satisfying."

Avanade's research shows that 83 per cent of business leaders planning for digital transformation increasingly recognise the importance of both employee engagement and customer experience.

Transformations also require an effective end-goal, and a clear roadmap of how to get there, if they are to be realistically achievable and sustainable. "Businesses need a 'north star' to aim at over the next three to five years. Their roadmap must be flexible and they must be confident to adapt it to meet changing business priorities while still remaining focused on the strategic goal," Ms Giardina explains. "When they have this plan and can see what the future holds, they can be the future."

The strategies must be focused foremost on people and processes, and underpinned by innovation, technology and actionable insights. "In essence, these transformations exist as a pyramid, with people on one side and processes on the other, and technology underpinning it all. Technology is not the driver of these programmes, it is the enabler. Without it the pyramid can still stand, but without a focus on the people and the processes it collapses," says Ms Giardina.

The unwieldy nature of many older businesses, or those that have grown through acquisitions, makes achieving this balance challenging. "Companies often end up in siloed teams, such as back-office planning, sales and service, or innovation, and they can't easily move in one unified direction," explains Bernd Weidenmüller, head of Avanade's business applications unit in Europe.

By combining the ability to support staff working from anywhere, with the Microsoft Dynamics cloud, analytics, machine-learning and artificial intelligence, businesses can become powerfully improved. "Thanks to technological advancements, including on-demand services, storage and analytics, we can leverage data in very granular ways to help transform business," adds Mr Weidenmüller.

"In the past, people had specific use-cases in mind and decided on the data required, whereas now organisations can preserve data well ahead of future use, making it available for machine-learning and predictions in ways they don't even envision at the time of data creation. This is a big shift in thinking."

Initial results on companies' data insights projects are now achievable within weeks, instead of the six to nine months traditionally needed with legacy, on-premise enterprise resource planning systems. The combination of Avanade's scaled delivery, and Microsoft's unique extension model for cloud-based enterprise resource planning, means companies can quickly get the benefits of the cloud while still being able to modify their systems around unique business needs.

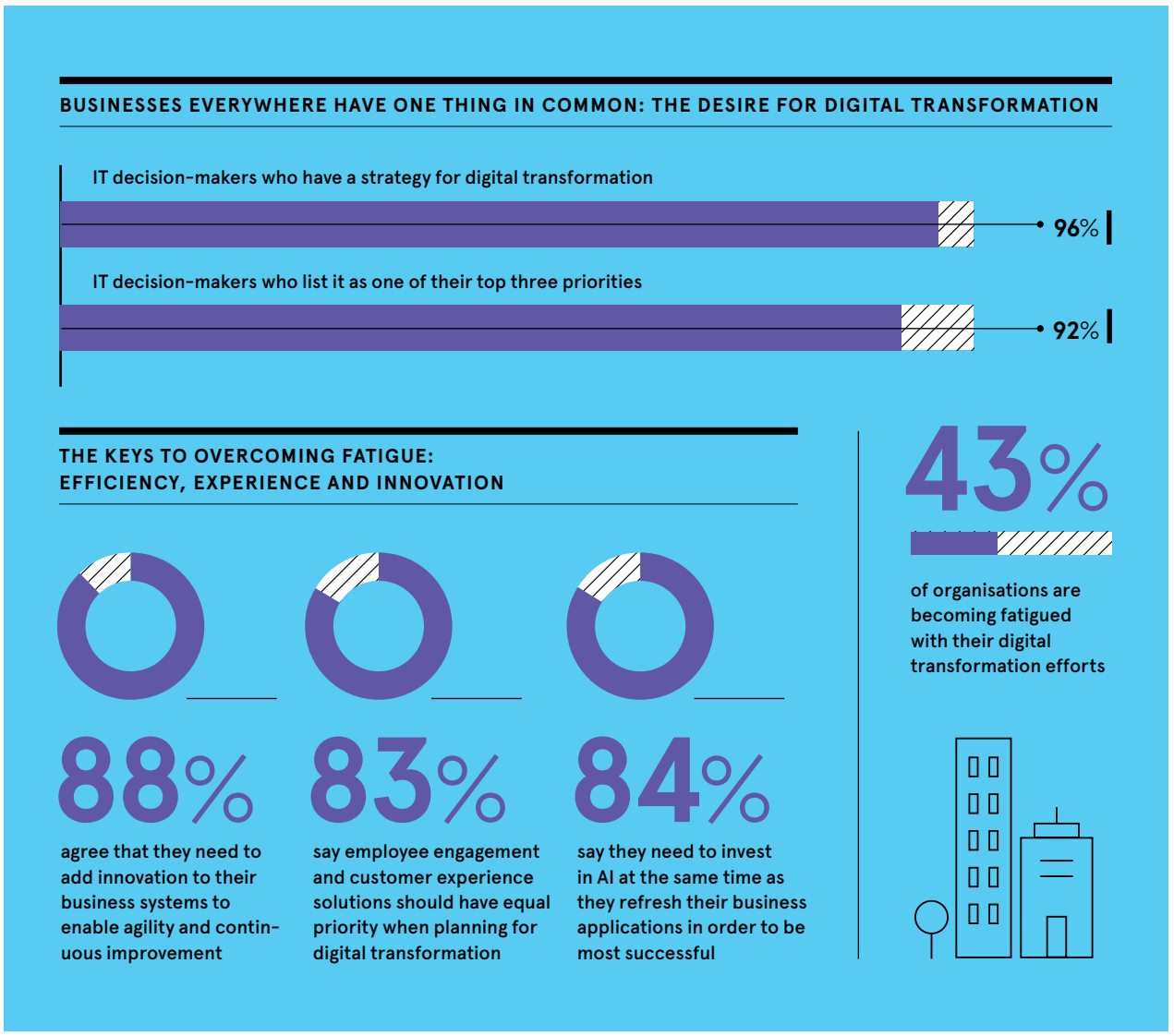
Indeed, an advanced companies' innovation-based approach to transformation is beginning to unlock much faster and wider change, Mr Weidenmüller notes. "It is essential that teams can test new ideas and when those ideas work that there is a path to move from proof of concept to pilot, and then to a broader roll out. The most future-ready organisations recognise not every idea will produce immediate business results, but they understand the need to create a culture of experimentation and innovation at will," he says.

Avanade works with organisations across industries to develop such innovative transformation cultures, to shape their strategies and execute consistently on their plans with regular and measurable return on investment. It has the end-to-end capabilities to make sure businesses can become future ready now, ensuring they build operational efficiencies, invest in customer and employee experiences, and create continual innovation.

Avanade's leader position in the Forrester Wave for Microsoft Dynamics 365 Services, and its recognition with Accenture as an IDC MarketScape leader in worldwide Microsoft implementation services, provides strong confidence for clients in the success of the complex and business-critical changes they are considering.

"The companies that have a clear end-goal, and a realistic and adaptable roadmap to get there, regularly succeed in delivering real improvements to profitability, and customer and employee satisfaction," Ms Giardina concludes. "This sets them a mile ahead of the competition."

> "Thanks to technological advancements, including on-demand services, storage and analytics, we can leverage data in very granular ways to help transform business



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> Whether you're a CIO or CTO, digital leadership is less about the technical pieces

LEADERSHIP

Do you really still need both a CIO and CTO?

Enterprise technology and the people who govern it have changed beyond recognition, which can lead to an overlapping of roles between the chief information officer and chief technology officer

Mark Samuels

Once seen as the custodians of IT and confined to the datacentre, technology chiefs are now at the forefront of modern business operations. And in this era of continuous digital transformation, a new battle for power, between the chief information officer (CIO) and chief technology officer (CTO), has moved centre stage.

The business no longer needs a traditional IT director. The consumerisation of enterprise technology during the past decade means employees can use the cloud to buy their own technical solutions to their business challenges, with or without the say-so of the IT chief.

Almost two thirds (63 per cent) of organisations now allow technology to be managed outside the IT department, according to research from recruiter Harvey Nash and consultants KPMG. This decentralisation means the business needs a new kind of IT leader, but in the battle of CIO versus CTO, who is best suited to meet this requirement?

While the responsibilities of the role of CIO and CTO often overlap, CIOs tend to take an overarching view of technology initiatives, and their CTO counterparts tend to drill down into systems and services. Take technology firms, where CIOs are usually responsible for how technology is used internally, CTOs are charged with thinking about how a firm's technology is used by its customers.

Some organisations employ a CIO and a CTO. And while CTOs often report to CIOs in blue-chip enterprises, the roles and the relationships between them vary between companies. At transport specialist Trainline, for example, CTO Mark Holt is the company's senior technology leader. His explanation for being a CTO rather than a CIO is straightforward.

"We're a technology company," he says. "Trainline is all about using technology to improve the customer experience. Mine is a technology role. It's a role that requires an understanding of technology and how we use that to improve the customer experience. It's not a management role; I'm not managing day-to-day operations."

At finance giant RBS, meanwhile, the role of senior IT leader rests with Simon McNamara, who holds the title of group chief administrative officer. His responsibilities at RBS stretch beyond the traditional role of CIO and include data, innovation, property and supply chain services. While he doesn't have a CIO reporting to him, he does have a CTO.

"CTO seemed like the appropriate title for that individual," says Mr McNamara. "While I encompass the totality in terms of technology leadership, there are people, like the CTO, who report to me and have responsibility for elements of our technology, which means the role of CTO at our bank is much broader than external outreach."

What emerges is a complex pattern of modern IT leadership. While CIO versus CTO is one way of characterising the battle for power, another way to view the IT leadership battleground is to focus on roles and responsibilities. Richard Gifford, CIO at logistics firm Wincanton, says being a modern IT chief is about being a business leader first and a technician very much second.

"In my world, it's about being commercial and helping the business to unlock value," he says. "Whether you're a CIO or CTO, digital leadership is less about the technical pieces, as organisations are able to buy systems and services on demand as components."

The focus on value, innovation and transformation doesn't mean, however, that IT leaders are stepping away from day-to-day operational concerns. If a system goes down or data leaks, senior board members will still turn to the CIO or CTO for an explanation.

The senior technology chief in an organisation, regardless of CIO versus CTO, is still the enterprise guardian for IT. They will be judged on service availability. But successful technology chiefs spend less time on operational matters and more time outside the IT department, engaging with business peers.

Craig Donald, CIO at the Football Association, says great IT leaders understand the disparate demands of business functions. As technology underlies all modern operations, successful CIOs use their vantage point to work with their C-suite peers and identify gaps for digitisation.

"You have to be open to insight from people who clearly know more than you do," says Mr Donald. "You also need to build a bridge between traditional technology and new digital services. Digital still remains a tough thing to define. But being able to bridge the gap between IT systems and digital products is absolutely crucial for any technology leader."

Modern IT chiefs, therefore, take a higher-level view. Rather than focusing on the operating systems or devices their employees use, they engage with their business peers to explain the art of the possible. They help identify new business models and describe how systems and services can be used to support that opening.

It's a theme that resonates with Julie Dodd, director of digital transformation and communication at Parkinson's UK, who says IT chiefs are helping to change perceptions of technology for the better. "When other employees see the good work of the internal IT team, it creates a feel-good factor and benefits for the entire organisation," she says.

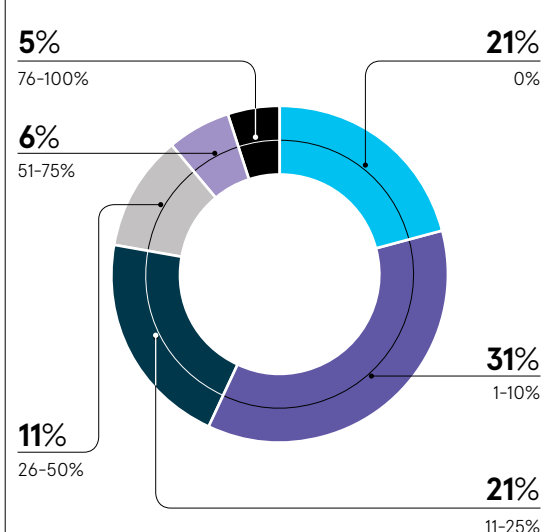
The opportunities for digital leaders appear plentiful. What seems clear is that the activities they undertake as modern digital leader are probably more important than the job title they hold. While business leaders and technology professionals could get hung up on the CIO versus CTO debate, it's more important that they focus on exerting their influence.

As Dylan Roberts, chief digital and information officer at Leeds City Council, suggests, the role of IT leader remains in a state of flux. Those who succeed in the long term will be the ones who engage with the business to deliver change.

"In an ideal world, we'd be in a position in five years' time where as a CIO you become like an expert adviser; you simply facilitate, support and mentor others as a business leader," he says. "These business leaders will drive digital change because it's actually core to everything your organisation does."

WHO CONTROLS IT SPEND?

Proportion of IT spend managed outside the IT department



Harvey Nash/KPMG 2019

NEUROSCIENCE

How to nail applied neuroscience

It won't make them mind readers, but neuroscience is helping companies to understand customer behaviour in ways not previously possible

Mark Frary

Tobi Oluremi on Unsplash

In a world where consumers have become accustomed to a best-in-class user experience, gorging themselves on the personalised recommendations and frictionless worlds of Amazon and Netflix, many companies are being forced to implement customer-driven digital transformation to survive.

To get closer to their customers, some companies are starting to recognise they need to understand the consumer's mind better and are using the tools of neuroscience to understand what makes people buy.

To do this, businesses are turning to neuroscientists to augment what they can glean from traditional research.

Cristina Balanzo, director of Walnut Unlimited, which calls itself a human understanding agency, says: "What neuroscience is providing are complementary insights. It is an additional layer of understanding that it is needed to have a full picture so these companies need to change behaviours and shape attitudes.

"Current user-experience testing is being explored through behavioural observation and declarative measurement. We know that beyond the click, our subconscious drives most of our habitual behaviour, so understanding the motives and emotions, which underlie these behaviours, is crucial to understand the real engagement with these online platforms. People cannot report everything that drives their behaviour."

Shopping has been revolutionised in the online era and it is forcing retailers to rethink what they thought they knew.

Take the familiar setting of the supermarket; retailers have long understood the power of manipulating the brain, whether that is by piping in the smell of hot bread or by arranging goods on shelves in a particular way.

Phil Barden, author of *Decoded: The Science Behind Why We Buy* and the managing director of consultancy DECODE MARKETING, says: "When you are navigating a store in the physical world, you learn the heuristics of shelf layouts. We know the brand with the most space is likely to be market leader. We learn that products on the top shelf tend to be more niche and premium, and those on the bottom shelf tend to be generic."

The problem is that none of this translates into the online world. If you are a supermarket needing to implement a customer-driven digital transformation, you are going to need to learn the way the brain works when choosing products online.

Mr Barden says: "No one can ever be a mind reader and neuroscience cannot accurately say what people are thinking, but it can help explain behaviour. Observing real-time customer behaviour, whether they are shopping in a store or how they navigate a website, is invaluable."

How products are perceived online needs careful thought. If you look at how most online sites present products, they do so with a single pack shot, which is very different from the real world.

"A lot of manufacturers are now manipulating the images specifically for digital representation such that the brand is easy to identify," says Mr Barden. "It is not done to be duplicitous or to mislead, but purely to help people quickly find their regular pack or to choose between packs."

The brain also processes how it interacts with brands differently, according to Shazia Ginai, chief executive of Neuro-Insight.

"We use the analogy of a brand room," she says. "For every brand you interact with, there will be a 'room' created in your brain for that brand. Your experiences in the offline world with that brand, whether TV, direct mail or retail, help furnish that room. If you have a bad experience with a brand, you get a badly furnished room.

"With digital, the way information is fed to you, it is usually in a situation where advertising is not the primary context. That doesn't furnish the brand room, it turns the light on in that room. Those rooms sit in darkness until someone switches the light on."

A customer-driven digital transformation has to recognise the difference and brands will have to do more to make sure the room is furnished before the light is switched on.

Looking ahead, applied neuroscience could lead to better personalisation, which is a goal of customer-driven digital transformation.

"You go to YouTube, watch a video and then the next recommendation is three more of the same thing," says Thomas Z. Ramsøy of Neurons Inc.

What Dr Ramsøy potentially sees is a future when sentiment is monitored in real time and what you are offered is customised. He concludes: "There might be a natural limit. You can't ask people to do a brain scan in their everyday life and then there is GDPR [data protection]."

> **Observing real-time customer behaviour, whether they are shopping in a store or how they navigate a website, is invaluable**

Insights into customer behaviour

American DIY chain Lowe's, with more than 2,000 stories and 300,000 employees, is the second-largest home improvement retailer in the world. Although it is nearly 100 years old, the company has not been standing still. In 2014, it launched Lowe's Innovation Labs (LIL) to leverage customer-driven digital transformation.

Since its inception, LIL has created an augmented reality DIY tool called Holoroom, the OSHbot autonomous service robot, and 3D scanning and printing in-store.

The company called in applied neuroscience consultancy Neurons Inc, founded by Dr Thomas Z. Ramsøy of the Copenhagen Business School, to combine research into neuroscience, psychology and economics.

"We used eye-tracking in a variety of different cases to see how people responded to Lowe's new innovation," says Dr Ramsøy. "When you are using virtual and augmented reality, a lot of the time people find them beautiful, but confusing.

"One of the early things was to test the Holoroom. When people were told they were going to the Holoroom, they didn't understand what was going on. We could see when we analysed the [eye-tracking] data it was something about the name itself. For the developers, the name played on a Star Trek analogy, but to customers it meant nothing."

Commercial feature

Home Credit: competing to assess credit risk

Academia and the commercial world do not always mix well, but when you find a way to tap into the power of the global academic community, results can be transformative

Kaggle hosts data science competitions. And Home Credit, a consumer finance lender spanning central and eastern Europe to China and southeast Asia, used a Kaggle competition to develop its credit risk decision-making based on alternative data.

"We chose to host a competition for several reasons," says Kirill Odintsov, head of the data modelling team at Home Credit. "It was partly to develop our understanding of best practice, partly to connect with some of the best people in this area and partly to raise our profile."

It worked on all three fronts. The competition, which was then the largest they had ever hosted, attracted a lot of attention, with more than 7,000 teams from over 100 countries competing for the top prize of $35,000 – the total prize money was $70,000 – though the monetary reward is only part of the reason competitors took part.

"The reason why this competition was so popular was twofold," says Maggie Demkin, head of customer success and partnerships at Kaggle. "First, the data was very clean and easy to work with. Second, the question that Home Credit was looking to solve was challenging, so it inspired people to collaborate and share their ideas."

There might also be another reason that made Home Credit's contest so attractive. "Fintechs are typically garage startups with trendy propositions. But we are a global powerhouse that issued 37 million new loans in the past year alone, so any idea that can lead to even a slight improvement in our approval is not only extremely valuable to us, but can also be scaled up to incredible heights very rapidly. And that's a big draw for Kaggle contestants," says Radek Pluhar, Home Credit's chief risk officer.

> Crowdsourcing helps us to attract the world's best-known researchers and top talents to work for us

Key to participation is the intellectual satisfaction of finding new solutions or proving that a solution works. Universities can use Kaggle as a vehicle for learning, while host companies can form relationships with some of the best and brightest, not only from the ivory towers.

The Kaggle community is composed of professionals, students and enthusiasts. Home Credit has already employed some participants in Prague, the Czech Republic, and Gurgaon, India, and is also in discussions with other companies as a result of the competition.

"The competition helped to steer our evolution in certain directions; it helped us to stay sharp and on top of trends," says Mr Odintsov.

Home Credit's competition involved predicting default rates for individual loans. The company is increasingly offering loans online, where it is difficult to use traditional assessment methods. Finding a way to assess credit risk more quickly is key to improving customer service and reducing defaults.

The thrust of Home Credit's work is developing the use of alternative, publicly available data, such as the time of day an individual's mobile phone is switched on, to build up a realistic profile quickly to be able to make the decision to lend.

The competition used real-life, anonymised data and asked participants to predict which loans would default. The predictions were compared against actual results to decide the winner.

"Kaggle is an important platform for academics, who don't usually come into contact with real-life data," says Mr Odintsov. "They have a lot of solutions, but no data. Kaggle provides them with the opportunity to try out ideas in a strong and supportive community."

The biggest challenge for Home Credit was preparing the data; it took four to five months before the legal department was happy and the competition was built with advice from Kaggle. Finding clear, mathematically defined criteria for success is important.

But once the competition was up and running, there was additional work for Home Credit's modelling team. Kaggle competitions are, crucially, an interactive process between host and competitors.

"If you want to have a positive impact on your brand, you have to make the time to answer questions during the competition," says Mr Odintsov. Two people were dedicated to fielding questions for the three months of the competition; one of the biggest hurdles for the competitors was grasping the nature of the financial services industry, so Home Credit had to ensure there were staff available to respond.

And the results? It was never intended that the outcome would be a cut-and-paste solution. "It's more about identifying best practice, developing our modelling," says Mr Odintsov. "We could see that some more traditional methods like gradient boosting perform better in default prediction modelling than the deep neural network applications. Such tools have served us quite well in text-mining though. It generated lots of ideas and we are looking at hosting another competition soon."

Home Credit BV

Home Credit BV is a global platform, which centrally manages core strategy, technology, risk and products for consumer finance operations in emerging markets in Central and Eastern Europe; the Commonwealth of Independent States; China, south and southeast Asia. Founded in 1997, Home Credit focuses on responsible lending primarily to people with little or no credit history. It has served over 119 million customers through a distribution network comprising 426,900 points of sale and online.

Customers are junior white-collar and blue-collar workers with limited credit records, who are underserved by traditional banks, often first-time borrowers and sometimes have no bank account, so can be difficult to assess from a risk perspective. Credit bureaus are limited in less developed countries, with information on perhaps only a third of the population. Working in areas where there are limited financial resources and a nascent financial industry requires a different approach to lending.

Kaggle

Kaggle is an online community of data scientists and machine-learners. The company, which is owned by Google, hosts machine-learning competitions in conjunction with commercial companies, which provide the data and prize money.

Registered users from around the world compete to solve real-life problems, by building the best algorithm. Work is shared publicly, with immediate feedback on a leader board, and the prize money is exchanged for the legal right to use the winning solution.

Kaggle has more than two million members. Problems that have been aired on the platform range from predicting the effect of genetic variants for more personalised medicine, and using satellite data to track human footprints in the Amazon rainforest, to predicting what songs a user will listen to next.

The commercial benefits are clear, but not all data-learning projects are created equal. Competitions, which typically run for a few months, require a tightly defined problem and clean data. The minimum prize pool is $25,000, but Kaggle estimates a commercial budget of between $85,000 to $200,000; it can be a lot more for bespoke operations.

Competitions can be time-consuming to achieve the best results, whether in terms of preparing the data or answering questions from the community once the competition is up and running.

Five reasons why Home Credit chooses to collaborate with Kaggle

01 Consumer loans' approval is really the world of big data, machine-learning and new techniques we want to get new data insights to stay at the forefront of all of it.

02 Kaggle enables us to work with the leading academics and practitioners through crowdsourcing; we quickly get an access to fresh knowledge and solutions.

03 Crowdsourcing helps us to attract the world's best-known researchers and top talents to work for us, to formulate different approaches to solutions we need to become more effective.

04 Kaggle competitions help us to stay on top of mind of talented data scientists, raise brand awareness amongst them and recruit some top data crunchers.

05 It inspires us to constant, never-ending innovations thus bringing us ahead of our peers.

INVESTING IN TRANSFORMATION

With most businesses increasing their investments in digital transformation, it can be more than a little daunting knowing where to start given the number of solutions and technologies to choose from. This infographic explores the most common and emerging technology investments and how leaders are approaching transformation

53% of IT leaders from global enterprises report having 800 or more applications in use, with 43 per cent having 1,000 or more

Mulesoft 2019

59% find it difficult to introduce new applications or technologies or make changes to existing applications

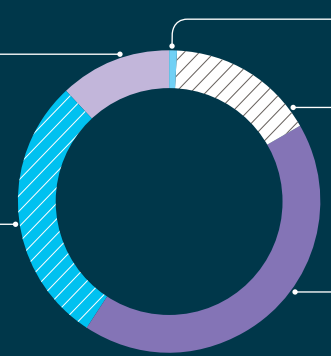
Mulesoft 2019

93% say improved customer-facing technology is critical for their company to compete

Salesforce 2018

INVESTMENT IN DIGITAL TECHNOLOGIES

How global organisations expect to invest in digital technologies next year

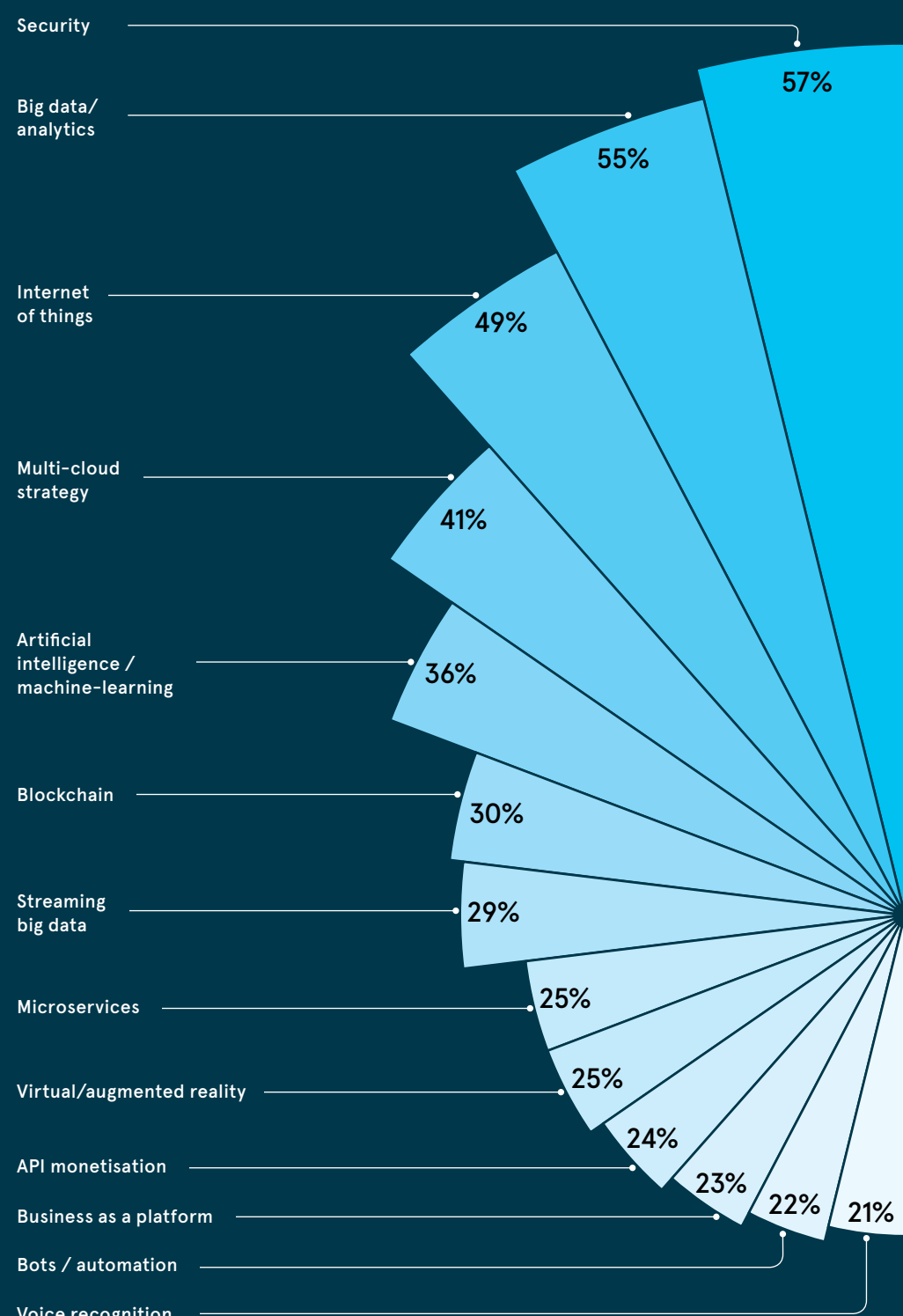


*Percentages may not add up to 100% due to rounding

BMC/Economist Intelligence Unit 2018

TOP TECHNOLOGY INVESTMENTS FOR 2019

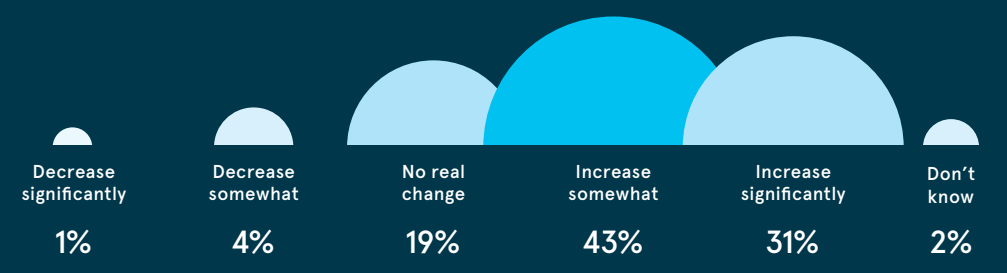
Digital transformation survey of IT leaders from global enterprises



Mulesoft 2019

HOW DIGITAL TRANSFORMATION IS EXPECTED TO IMPACT BOTTOM LINE

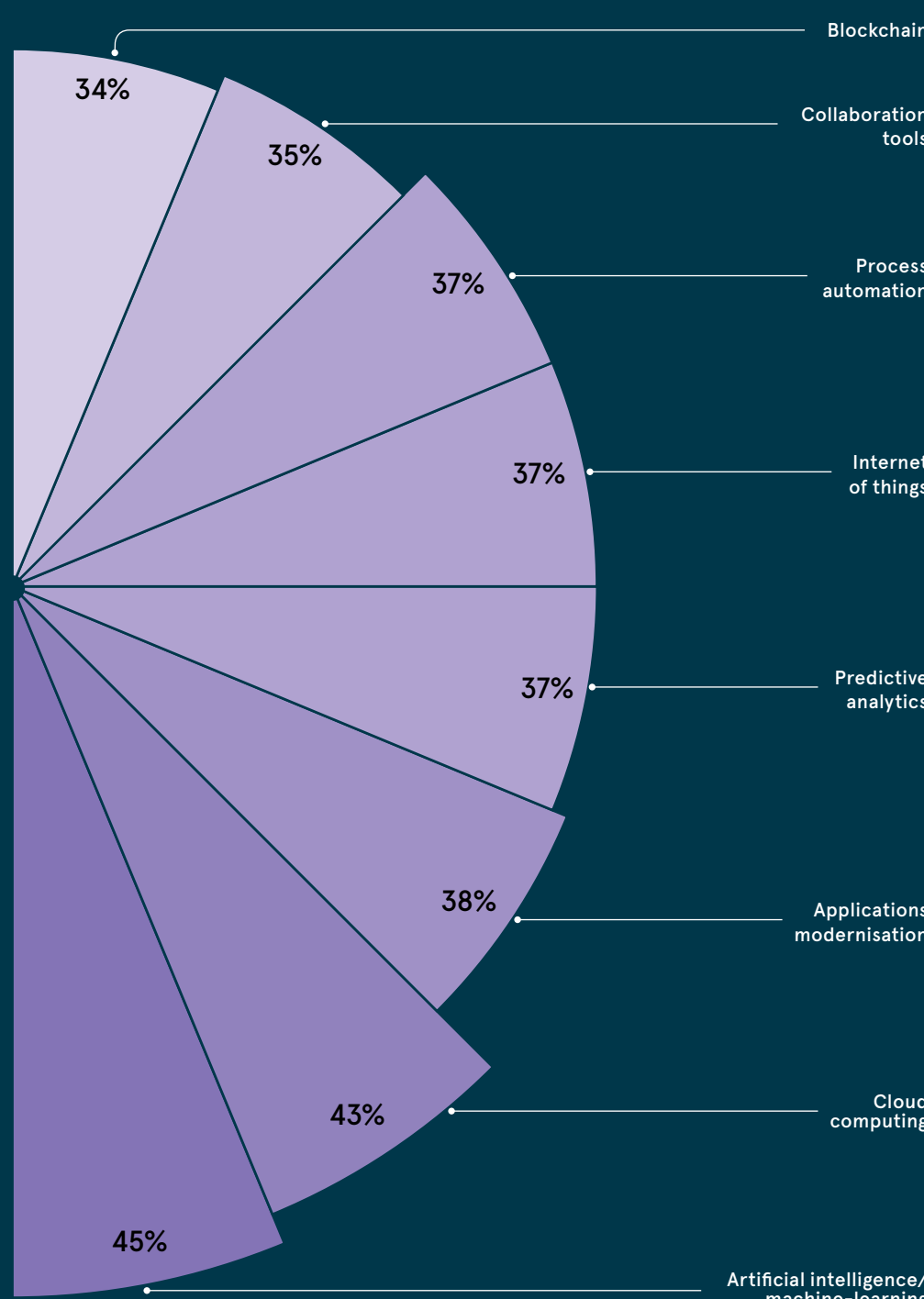
Executives' predictions about the impact of digital strategy on annual profitability over the next three years



DXC Technology/Economist Intelligence Unit 2019

MOST IMPORTANT FUTURE TECHNOLOGIES

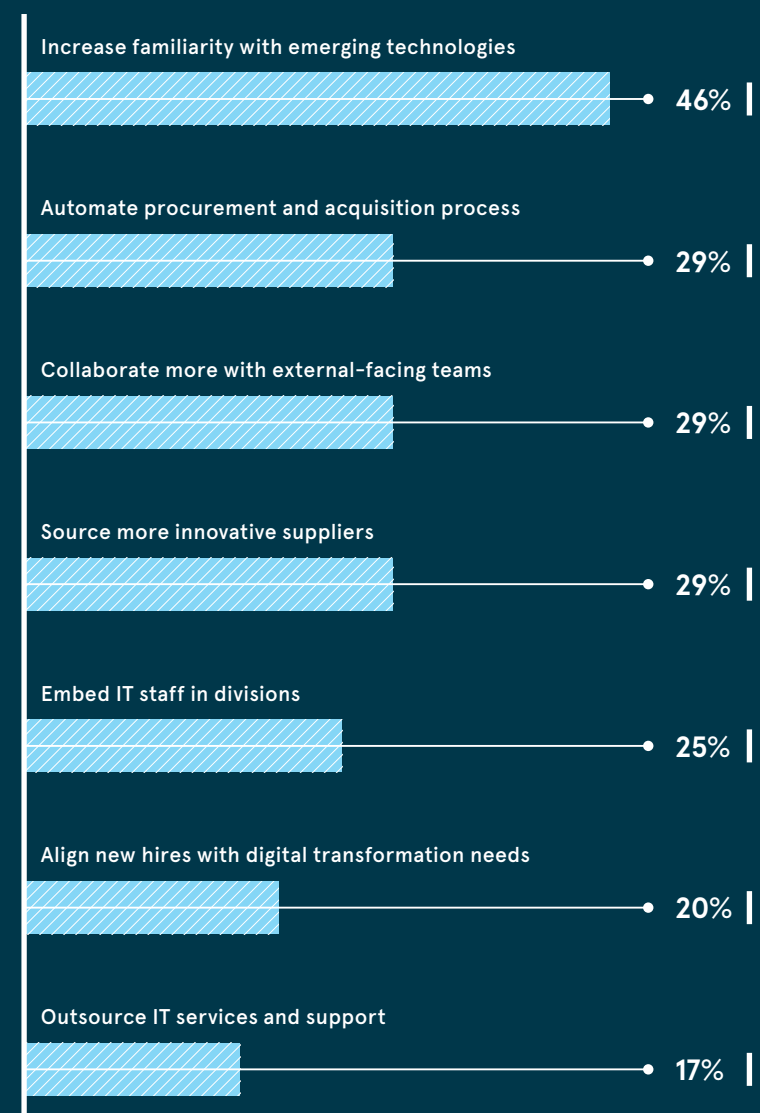
Percentage of executives from global organisations who expect the following technologies and practices to play a significant role in digital strategy three years from now



DXC Technology/Economist Intelligence Unit 2019

WHAT IT LEADERS CAN DO TO SUPPORT DIGITAL TRANSFORMATION INITIATIVES

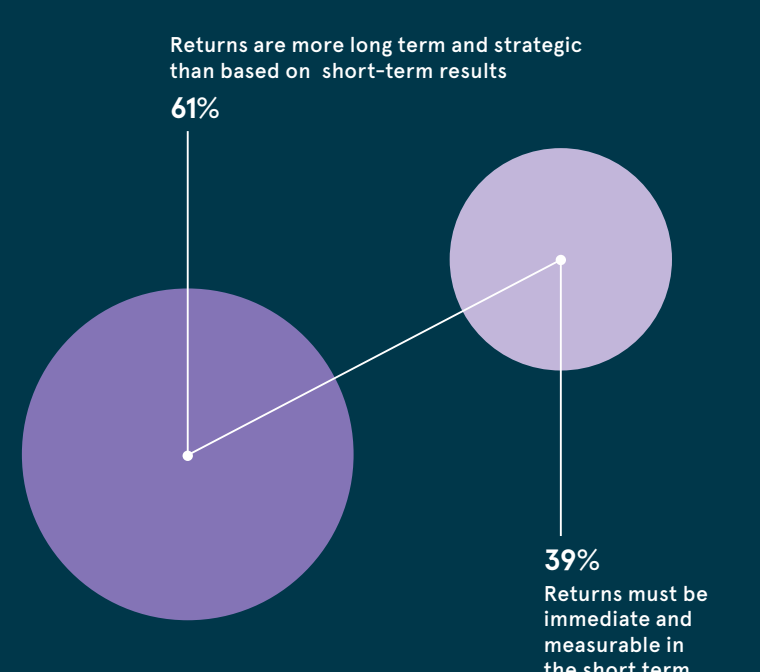
Global survey of senior IT executives



BMC/Economist Intelligence Unit 2018

SHORT OR LONG-TERM RETURNS?

How companies view the return on investment from digital transformation



Masergy 2019

Commercial feature

Q&A
Inside the tech set-up at ROKiT Williams Racing

1ms
for Acronis Active Protection machine-learning model to make a decision

2–5s
for Acronis Active Protection to react in a user interface. The restoration takes seconds as well

400k
users worldwide were protected by us in 2018

Graeme Hackland, chief information officer of the ROKiT Williams Racing team, opens up on biometrics, quantum computing and the dangers of running a motor racing team on data

Q Who is more important in F1, the driver or the IT team?

A Wow, good question, but you are asking the chief information officer. There's no doubt data plays a huge role in Formula 1 and it's always increasing. We have 300 sensors on the car and run 1,000 channels of data, collecting 800 gigabytes on a race weekend. We use IT to optimise everything we do. We run aerodynamics in virtual wind tunnels. During the race our sensors can tell us how good the driver's launch was at the start and monitor the performance of each tyre as it changes throughout a lap to work out our race strategy. We use data to improve lap after lap. I remember Felipe Massa saying, "There is nowhere for the driver to hide." But I suppose the car wouldn't move without a driver. I'll admit that.

Q Tell us about your IT team.

A You've used the right word, it is very much a team. We employ 25 people in the ROKiT Williams Racing technical team, from trackside analysts to support back at base. We also have our sister division, Williams Advanced Engineering, which focuses on the commercial sector. It advises clients in retail, healthcare and defence, employing 350 people. In total, we have almost a thousand staff members across the group.

Q Do you take all your kit with you on the road?

A We take two racks of equipment to the races in our mobile datacentre. We plan so that if there is no internet we can still take the telemetry off the car and compete. We have a partnership with Tata Communications and run a 100 megabits per second MPLS circuit back from the track. It takes 0.3 seconds to get the data from the car in Australia to our UK base or 0.1 seconds from Europe.

Q What new tech are you looking at?

A 3D printing, 5G, biometrics and artificial intelligence (AI) are all interesting. 3D printing is not as new as people think; we've been using it since the 1990s. Parts of our front wing and around the camera are 3D printed. We print parts at 60 per cent scale to use in wind tunnels. The technology is improving so fast we hope to print carbon fibre and metal parts in the next three to five years. AI is becoming more important. We want to use it for strategy, for example, for a question such as calling a pit stop. Right now a human takes 60 to 90 seconds to factor everything in and make the judgment. Make it too late and you've missed the chance, and can fall from first to third place. That happened in a recent race. AI could help automate much of the decision-making, but we are still some way off replacing humans altogether.

Q And biometrics?

A This year the drivers are using biometric gloves for the F1 Doctor's use. An optical sensor is woven into the glove. It measures pulse oximetry to monitor the heart beat and oxygen level in the blood. The data is sent by an industrial version of Bluetooth with a 50-metre range that can send 20 packets of data a second. To be honest, the drivers don't enjoy having their data made public. It's too personal. We are experimenting with biometric sensors on our pit crew. We can see that when we call a pit stop, normally with three corners to go, their heart rate spikes. Then it's stable. They are so well trained at their jobs they don't panic. Two races ago we set a record at 1.92 seconds. Biometrics may help us to go even faster. And we are also thinking of using biometrics on our office staff. If they have a virus, we can tell them not to stay late that night so they can recover.

> **We were hit with two ransomware attacks, but we got lucky and we were able to restore our data from backups**

Q How vulnerable are you to hackers?

A In 2014, when I joined, we were hit by two ransomware attacks. They almost caused a disaster. But we got lucky and we were able to restore our data from backups. We then reviewed our situation. We found we generated too much data, even for the latest backup disks. If the team needed something older than six months, it would be stored physically off-site. That was a risk. We needed something new, so we partnered with Acronis.

Q What does Acronis do for you?

A Acronis provides us with cyber protection and takes care of our backups. There are three benefits. First, backups are done through the cloud, which is a huge advancement from our old set-up. It doesn't matter how much data we generate, it is all stored off-site at a UK datacentre. Second is the speed. We are able to restore in minutes. It used to take hours or days to restore, which wasn't good enough for an F1 team. Finally, there is AI-assisted malware protection. If a ransomware hacker targeted us again, Acronis' AI would detect it and block the intrusion. Even if the Acronis AI hasn't seen that precise type of attack before, it can identify threatening behaviour and intervene. Working with Acronis means our backups are protected, so we are safe from ransomware attacks and other threats.

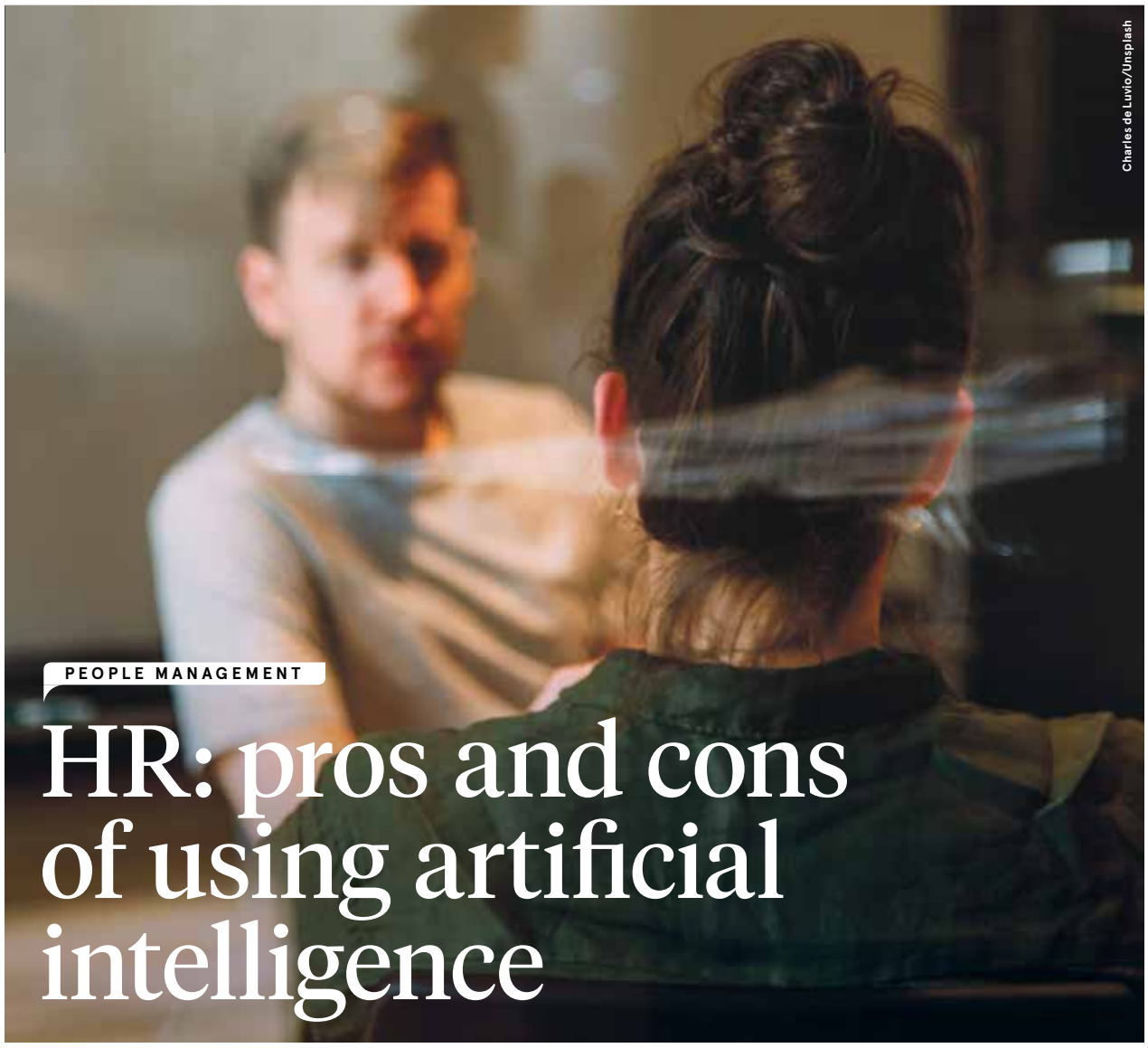
Q What's the next big thing in F1?

A Augmented reality could be huge. Can you imagine an engineer who normally sits in our base looking at images, putting on a headset and being able to look at the car at the track? That could be massive. And quantum computing has potential. We crunch a lot of data together, from computation fluid dynamics, driver simulator data and wind tunnel data. Quantum computing can help us do it more quickly. But right now it's immature and so expensive. But I hope it will be viable in three to five years. For a race team like us, who are so dependent on data, anything that gives us an edge is tremendously exciting.

To find out what Acronis can do for your company please visit Acronis.com

ROKiT WILLIAMS RACING
OFFICIAL PARTNER

Acronis



Charles de Luvio/Unsplash

PEOPLE MANAGEMENT

HR: pros and cons of using artificial intelligence

Artificial intelligence is already making an impact on the human resources function, but adoption comes with both opportunities and challenges

Virginia Matthews

Pros

After several stop-starts, artificial intelligence, or AI, is now the single most important driver shaping the future of work, but has proved itself to be evolutionary rather than revolutionary. So says Ian Jones, co-founder and chief strategy officer at the business software developer AMPLYFI.

While it cannot transform a firm overnight, nor be "a silver bullet to business leaders' painpoints", it can deliver "incremental improvements to productivity or planning" provided realistic expectations are set, Mr Jones says.

AI in HR can make a positive impact across everything from recruitment and retention to fostering staff wellbeing, enriching jobs and protecting against brain drain, he believes.

As information overload intensifies, the ability of AI to process big data at a speed, scale, and accuracy that humans cannot match will reduce stress among all know edge workers.

Use of AI to monitor the emotional health of staff has already led some call centres to introduce automated feedback. AI systems are also able to recommend breaks if employees look stressed, frustrated or tired when dealing with customers.

To Dan Marsh, director of people at e-learning provider Sponge, "the roles that businesses are recruiting for today may not exist in the near future". He notes that AI enables learning platforms to replicate the approach of consumer content providers such as Netflix, thereby "improving learning and outcomes at a time of reduced shelf life for human skills".

Sue Lingard, marketing director at HR software vendor Cezanne, agrees. "AI in HR may well play a valuable role in helping employees work more productively or suggesting training courses to match career preferences," she says.

Ms Lingard notes that LinkedIn Learning already recommends courses based on users' profiles and training histories, and she predicts more of the same.

Andrew Spence, HR transformation director at Glass Bead Consulting, sees great benefits in using technology "to capture a broad range of personal data at work" and says organisations that "remain transparent, empower the workforce and share the benefits" will win out.

"I see employees harnessing HR technology to make better decisions, match projects and tasks on digital work platforms, and use coaching tools to improve insight and performance," Mr Spence predicts, adding that the entire nine to five will inevitably be redefined.

"Work will be carried out by people, networks, contractors, augmented humans, robots and automated systems all working together," he believes.

Too many AI initiatives start with businesses feeling pressurised to "implement AI, blockchain or the internet of things simply to keep up with the herd", says Mr Spence.

"My advice is to go back to business strategy and refuse to allow your organisation to be distracted by all the hype and shiny new tools."

> AI in HR may well play a valuable role in helping employees work more productively or suggesting training courses to match career preferences

Cons

Cezanne's Ms Lingard notes wryly: "Businesses are yet again being told to change their HR technologies and, as always, some are predicting that those organisations which fail to do so will go the way of the dinosaurs." While she agrees that AI in HR will become increasingly important, she identifies three fundamental problems.

As the recent pulling of Amazon's new recruitment AI system, which deselected female candidates on the grounds that data indicated most existing tech workers are male, has demonstrated, inherent bias in AI is hard to eradicate.

"It's not just about the fact that historic data isn't necessarily a reliable predictor of the future," she says. "It's also about how the framing of a problem, how the initial choices are made and the social context, or lack of it, will all influence what a machine appears to 'discover' on your behalf."

For computers to learn and replicate, they need to crunch a lot of data. With hundreds of thousands of people-related datapoints at their disposal, the AI tools deployed by major corporations may indeed "find patterns that could help predict flight risk or future potential", says Ms Lingard.

In contrast though, smaller companies just don't have enough data to benefit from true AI, unless it's aggregated across a number of organisations and even then there may be problems.

While some recruitment software vendors offer augmented AI video interviewing tools to help streamline mass-recruitment exercises, "most experienced HR directors will have horror stories of candidates who ticked all the boxes, but failed to thrive in a particular business culture, or outliers who looked to be a high risk, but turned out to be superstars," she says.

> The framing of a problem, how initial choices are made and the social context, or lack of it, will all influence what a machine appears to 'discover' on your behalf

The question of whether machines should be allowed to make decision about the future of human beings remains paramount in her view. "Of course, people managers need to get to grips with AI, not least because of the impact it is already having on the workforce, but all HR professionals must be prepared to ask the tough questions," Ms Lingard adds.

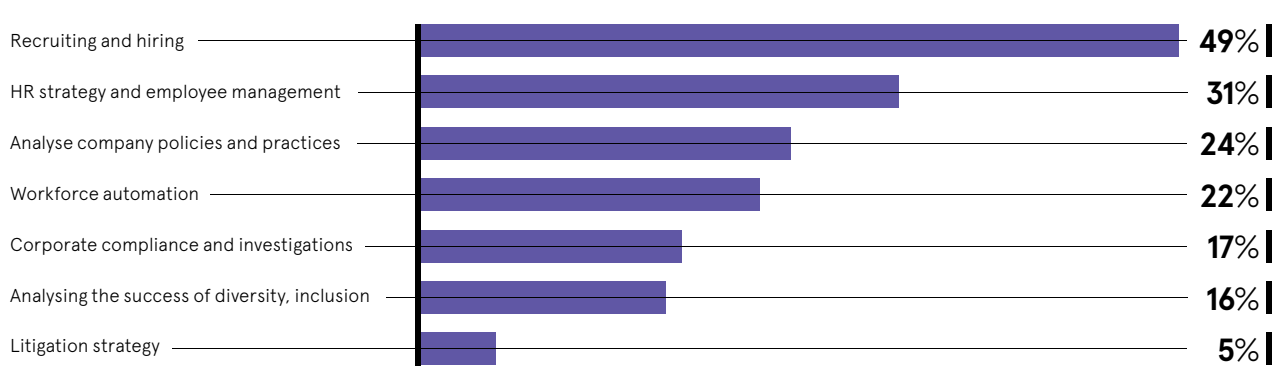
Tech adviser Barry Flack believes HR professionals will eventually "use algorithms to locate the right candidate for a role in a matter of seconds", but says it is the often-corrupted data relied on by the business community which is of greater concern.

While taking time to clean existing datasets of inherent human bias is now long overdue, full-scale adoption of AI in HR "will remain a figment of the over-active imagination of marketers and geeks for the foreseeable future", Mr Flack concludes.

ARTIFICIAL INTELLIGENCE AND DATA ANALYTICS USAGE

Areas where AI and data analytics are being used to improve workforce management decisions

McKinsey 2018



FINANCE

Why so many finance automation projects stall

Anthony Marsland / Getty Images

Progress is slowly being made in automating finance activities and processes, but common sticking points often stand in the way of companies achieving their true potential

Emma Woollacott

Three years ago, a Bank of America report forecast there was a 90 per cent chance of accountants being replaced by robots come 2025. But automation in finance has so far grown more slowly than expected. According to an Accenture survey carried out last year, chief financial officers (CFOs) expect fewer than 50 per cent of all finance tasks to be automated in the next two years, despite the fact that as much as 80 per cent of backward-looking accounting could be.

However, progress is being made. Robotic process automation (RPA) is increasingly being used for applications such as bank reconciliations, travel and expenses payments or automatically creating timing or accounts payable accruals for enterprise resource planning reports.

"There are several major finance activities and processes that benefit greatly from automation," says Kapil Chandra, senior partner at McKinsey & Company.

"Examples include financial planning and analysis, payroll administration, accounting, accounts payable and accounts receivable, for example generating and validating invoices and creating reports like accounts receivable ageing."

However, many organisations are dragging their heels when it comes to getting automation in finance properly off the ground, says Rupert Alston, partner with Deloitte.

In terms of RPA, he says, many companies have now moved from proof-of-concept into pilots with a small number of robots active. But this is where many projects have stalled.

"I think we were certainly expecting to see companies scale robotics more quickly than has been the case," he says. "I think one of the reasons for this is that robotics was initially very appealing because it sits on top of the existing IT and interacts with it in the same way as humans do.

"But when you start to scale it and make sure it works, you then need to have the right governance backing up your IT function so if somebody changes the system or the user interface then it doesn't affect the robot."

There are several factors which organisations should consider if they are looking to increase their chances of successfully digitising their finance function, says Mr Chandra.

"Successful RPA requires firms to fix existing broken processes first, developing a stringent end-to-end system. Secondly, applying RPA to selected pilot processes is good, but the benefits are increased by rolling it out to all the processes within a specific finance activity or function," he says.

"It's also vital to build internal capabilities; implementing RPA requires a sound knowledge of the underlying processes and a good understanding of RPA tools and techniques."

Finally, he says, while automation in finance can enable big efficiency savings in daily processes, these efficiencies need to be managed actively if there is to be an impact on the bottom line.

Certainly, cost reduction is usually the initial impetus for finance automation and generally it delivers. According to Accenture, 82 per cent of CFOs say they see measurable business return on investment from digital finance investments.

Leading companies, Accenture says, are now spending 0.6 per cent of revenue on finance, compared with an overall average of 1.2 per cent.

However, the real advantages of automation in finance come from the improvement of processes, says Deloitte's Mr Alston, citing the ability of retail firms to automate the production of a report and then use natural-language generation capabilities to create comment in readable English.

"Finance have to produce these reports, so typically they're running data dumps over the weekend and then somebody has to come in at five in the morning to open up the systems, download them, cut and shut, make sure it's accurate and then produce a report," he says.

"Nobody's had time to analyse it properly. But if you can automate that and then also add artificial intelligence, so you've already got some commentary, then it can be available at six or seven in the morning."

Capabilities like these can even create the opportunity to change or accelerate traditional business cycles. According to Harvard Business School, companies report an average of 132 metrics to senior management every month and three-quarters are based on lagging indicators.

"A lot of businesses are run on a particular cycle, so if you're a consumer business you're probably running on a quarterly cycle, while if you're a retailer it tends to be a weekly cycle," says Mr Alston.

"We can see that with the availability of the technology and of digital, there is the opportunity to break these cycles, maybe making resource allocation in a different way."

Meanwhile, when finance departments introduce advanced analytics and a CFO takes a leading role in digital transformation, it becomes possible to uncover new ways of creating business value.

> **When you start to scale it and make sure it works, you then need to have the right governance backing up your IT function**

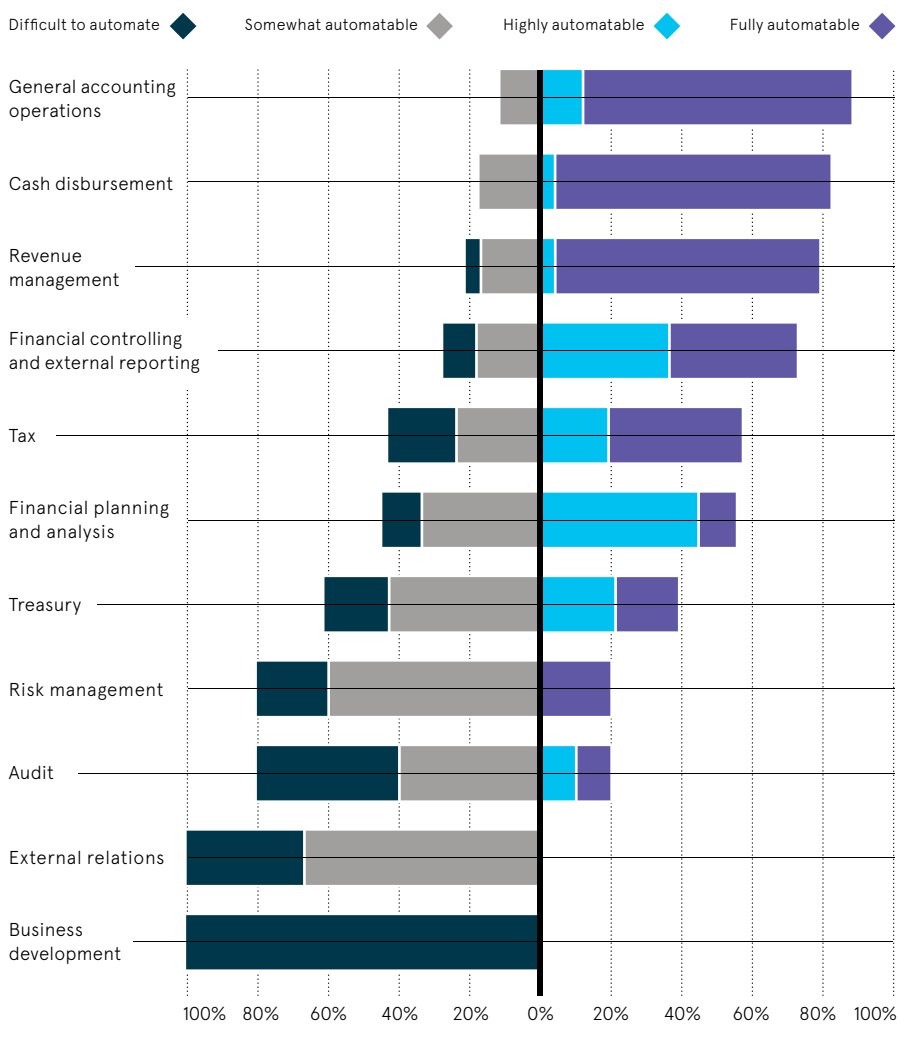
According to a McKinsey survey, CFOs would prefer to spend less time on traditional finance activities and more on strategic leadership, such as organisational transformation, performance management, and big data and technology trends.

"It's certainly my belief as an accountant that finance is the best home for a large proportion of the analytics, because it already has a fundamental capability of being the conscience of the business and taking a step back to make genuine decisions about adding shareholder value," says Mr Alston.

"There are some companies where finance is really leaning in and building their analytics, and that is then allowing them to take advantage of the availability of that data, turn it into information and drive better shareholder value."

AUTOMATABLE FUNCTIONS IN THE FINANCE DEPARTMENT

Proportion of the following tasks that can be automated using demonstrated technologies (%)



McKinsey 2018

OPINION

'Digitalisation is not a project to be planned and managed; it is a way of behaving and thinking'

Digital is not technology; it's empowering people, organisational culture and new behaviours. As a leader it's clearly within your role and skills set, but it has confusing, excluding language and challenges you with constant change.

To put this all in context, the waves of digital change have been rocking our collective boat for some time and many of us now know that inaction will result in a capsize. As digital leaders we are turning our boats into the waves and are starting to make our way.

So far there have been three waves, one behind us, one we are going through and now a third.

The first wave of digital change to hit us was about our organisation's user interface, the front end, putting a modern digital front door on an old model and updating how we interact with customers and citizens. Led by marketing or the IT team, it still felt like a project, remote from leadership and with an end-date and budget.

The second wave to strike us was digital transformation. No longer about the front end and not about tech, but a whole organisation rethink from end to end. It was change in response to new alien economic factors and disruption that comes from unexpected places. Certainly a project for a leader, but not a project in the sense that it had knowable parameters, timelines or costs, but now mission critical.

To quote WPP founder Sir Martin Sorrell: "As an existing business, digital transformation is like changing the engines on a plane while flying."

There is constant change, so the route to becoming a digital business is not a project to be planned and managed; it is a way of behaving and thinking. As much quoted cases have shown, like Blockbuster video's, being the incumbent and having a strong brand can't protect you if the business culture is wrong.

Your competition is digital-first and is rethinking your industry. They are uninhibited by profit and loss to determine their value and access to capital. Take WeWork, already the second-largest occupier of office space in the UK after the government, they opened 40 new offices in London in the last few months. They are reinventing the workplace and rewriting the landlord-tenant relationship.

On the *Digital Leaders Podcast*, we recently interviewed Leni Zneimer, general manager, UK and Ireland, for WeWork. Far from being a grandee of London's property sector, she is a 27-year-old psychology graduate.

As a digital leader, you need to get out of your industry echo chamber. You won't meet what's going to kill you at your industry's annual conference. You need to network with people from across all sectors and access thought leadership written by people who don't know anything about your industry. Yet this advice contradicts so many traditional norms.

As a leader, you need to give your people permission to change, test and innovate, and you need a supply chain that behaves the same way.

Inconveniently and before we are ready, a third wave is breaking over us and it's even more disruptive than the first two. Automation, artificial intelligence, big data, immersive tech, the internet of things and 5G are going to offer you and your competitors new and dramatic opportunities for business growth. As a digital leader, you may now be better prepared than for the previous waves, but rest assured you will need all the new skills you have learnt so far and more to make a successful transformation. Good luck. ●

Robin Knowles
Chief executive and founder
Digital Leaders

Commercial feature

Why AGMs are ripe for digital disruption

Digital participation in AGMs, traditionally only accessible by physical attendance, is enabling companies to increase engagement across their shareholder base

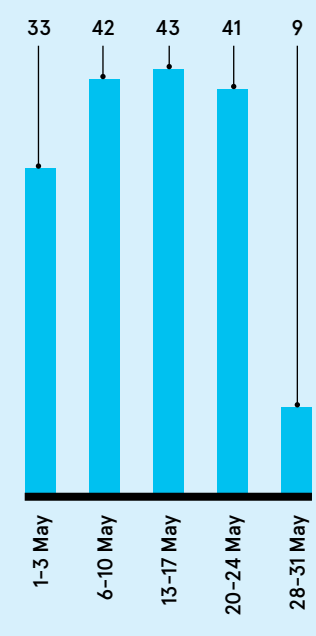
The AGM is an important governance process companies must go through to ensure transparency as well as provide an opportunity for real-time, two-way communication between shareholders and board directors. As the digital evolution continues to affect all kinds of business communications, there is a clear opportunity for AGMs to also benefit.

AGMs ACROSS THE FTSE 350 DURING THE BUSIEST MONTH (MAY)

168

total number of AGMs held in the month of May

BREAKDOWN OF AGMs ACROSS MAY



Does this question whether the traditional way of holding an AGM can be a barrier to maximising shareholder engagement? Traditionally, shareholders are notified of the meeting time, venue and business, and can cast their vote up front by giving it to a proxy or attend and vote in person. Only by attending have they had the opportunity to put questions to the board.

"Holding AGMs in one physical location can limit the engagement of that meeting," says Lisa Graham, head of meetings, at Equiniti. "Business today is more global than ever. Both board members and shareholders may have to travel extensively to attend, perhaps even internationally, leaving a large environmental footprint."

Shareholders can also often face the issue of having multiple AGMs happening at similar or overlapping times. At the height of proxy season this year, Equiniti confirmed as many as 18 AGMs in one day, which means shareholders have to choose one meeting over another. This compromise is particularly prevalent with institutional investors whose multiple investments make it impossible for them to engage and be more involved at multiple AGMs.

Sheryl Cuisia, managing director at Boudicca Proxy Consultants, which was acquired by Equiniti last year, says: "At the height of the AGM season in May this year, there were 43 AGMs in one working week. Hybrid AGMs provide both the corporate and the shareholder, especially an institutional investor, the means to communicate even if the shareholder has multiple investee AGMs happening on the same day or time."

The opportunity for digital evolution enables wider shareholder participation and a broader representation of sentiment from the spectrum of investors. Allowing owners to engage more actively in meetings in which they're invested is surely an improved outcome for all stakeholders.

> **At the height of proxy season this year, Equiniti confirmed as many as 18 AGMs in one day**

The creation of the hybrid AGM combines electronic and physical participation. Companies still have a physical place of meeting, but also enable virtual attendance, allowing investors to listen to the proceedings, ask questions and vote at many more meetings than previously possible.

By introducing the digital meeting, organisations make their AGM far more accessible and seamless to attend. This not only increases participation, but also creates opportunities to leverage the additional engagement to promote more shareholders into being customers; customer acquisition and retention being a key strategy for so many businesses.

"Looking forward, we are sure to see the use of digital services be adopted more widely across organisations of all sectors, seizing the range of opportunities they provide," says Ms Graham. "In the coming years, the hybrid AGM will be an important step for companies to really open up participation, not just at the AGM itself, but with shareholders all the year round."

For more information please visit equiniti.com/uk/services/eq-boardroom/

EQUINITI

HEALTHCARE

The AR firm hoping to revolutionise surgery forever

Virtual and augmented reality headsets may currently still be a novelty in the healthcare realm, but they have the potential to completely transform how surgeons operate

Marina Gerner

Supamotion/Shutterstock

Why don't surgeons have coaches, just like top athletes and singers? Medical professionals are expected to deliver care in a fast and cost-efficient way, while keeping up to date with the most recent technologies.

Even the best-trained professionals can benefit from coaching to improve their skills, according to surgeon and author Atul Gawande. Virtual reality (VR) and augmented reality (AR) are set to be in the vanguard.

In VR, a person typically wears a headset that depicts an immersive, digital reality. In contrast, AR shows our actual reality, while overlaying digital elements on to it. AR can work through a headset, but also through a smartphone screen or as a holographic image.

The mobile game *Pokémon Go*, for example, used AR to superimpose Pikachu on to real streets and meadows. In the same way, AR in healthcare can mean doctors see digital images of veins, anatomy and data on real bodies.

Taking inspiration from Mr Gawande's call for surgical coaching, Nadine Hachach-Haram co-founded Proximie, a software that allows clinicians to communicate remotely during surgery in real time.

It enables the coaching surgeon to see the patient through a screen, while pointing her pen at a sheet in front of her. The surgeons in action can see the coach's hand on a screen overlaid on to the patient and follow the expert's instructions.

"We're living in a time where we're talking about exponential medicine," says Ms Hachach-Haram. Meanwhile, for patients on a national and global level, there's still a postcode lottery. Better access to training can help to solve this issue.

VR is used for training purposes too. At the Children's Hospital Los Angeles, medical students and staff are trained in low-frequency, high-risk situations through a virtual reality scenario, designed by Facebook's Oculus.

Medical students are tasked to save the life of a child in the presence of their panicking parents, while getting information from emergency medicine technicians and giving instructions to assistants. The idea is to recreate a situation that is very rare and very stressful.

AR and VR are used in many industries. In 2018, the UK government announced it is investing £33 million in the technologies across sectors including entertainment, education and tourism. Healthcare could be one of the most promising areas. The industry for VR and AR in healthcare could be worth $5.1 billion by 2025, according to Goldman Sachs.

The main challenge for augmented assistance technologies, such as Proximie, is the reliability of the communications network, says Matthieu Poyade, who leads post-graduate studies in medical visualisation and human anatomy at Glasgow School of Art. This is because images have to be transmitted, for example, between a surgeon in India and an expert in the UK in real time.

> **One millimetre might not be a big deal in this case, but it is if a surgeon has to make an incision close to an artery**

While headsets such as Microsoft's HoloLens, Magic Leap and Daqri are pricey for the general user, AR doesn't have to be expensive as you can use a mobile phone. But, in a professional context, other than cost, what are the stumbling blocks in the way of emerging VR and AR in healthcare?

Medical professionals are very optimistic about AR and VR technologies, says Dr Poyade. "They are eager to know more," he says, adding it's important to explain the limitations of technologies to both doctors and their patients.

At this stage, technology still has a long way to go. If you put on a headset and look at a table, which is covered with a digital table cloth, the projection may not be fully aligned with the table. "One millimetre might not be a big deal in this case, but it is if a surgeon has to make an incision close to an artery," says Dr Poyade.

But it's just a matter of time for technologies to improve, and it has become easier to develop medical visualisation software. Development platforms have become much more user friendly, enabling more people to create apps. "Most of our students come from a life science background and they don't need five degrees in computer science," he says.

However, a criticism of AR is that, as with any form of digitalisation or automation, it might inadvertently diminish the skills of the people using it. In his book, *The Glass Cage*, Nicholas Carr argues that while air travel, which has been at the vanguard of automation, has become safer on the whole, pilots have become perniciously dependent on software.

But VR and AR in healthcare are only just emerging. For now, a benefit of AR is it gets people involved with medical information, through apps that can detect early symptoms of rheumatism, for example. Dr Poyade concludes: "AR is quite novel for patients; it still generates a wow factor."

Three emerging AR technologies

1. AccuVein is a handheld device that scans a patient's skin to show nurses and doctors where veins are located. It helps with blood tests, for example, particularly with patients such as children, the elderly or people with obesity, whose veins might be harder to spot. The company estimates that its device makes finding a vein on the first attempt 3.5 times more likely.

AccuVein

2. NuEyes produces pairs of hands-free, electronic smart glasses that aid people, who have low vision or are vision impaired, to see well enough to perform everyday tasks. The company aims to cater for an ageing population.

3. Brain Power is an app that aims to help people with autism develop their social interactions, behaviour and language skills. Users wear a set of smart glasses that give them visual and auditory feedback based on situations they encounter.

Making digital transformation a success

Digital transformation has rapidly become a priority for organisations wanting to gain an edge over their competitors

A report by AppDirect shows 79 per cent of companies are currently undertaking a digital transformation, yet the study found 90 per cent of businesses face major challenges doing so.

It's clear there can be serious obstacles and pitfalls from embarking on ambitious digital transformation initiatives that don't fully prepare for the challenges created from such a fundamental business change. Unsuccessful initiatives have the potential to not just drastically slow down or undo a transformative process but also cause an organisation to waste millions of pounds.

Alex Fishlock, chief executive of Catapult CX, an agile and DevOps consultancy with practitioners who help organisations modernise their IT, has seen countless organisations experience major transformation failures.

While significant, multi-year transformations may appear on the surface to be an effective approach, once these one-off projects are completed, the result may not be fit for purpose as the business landscape has changed.

"To succeed, businesses should adopt an agile approach to digital transformation, which allows companies to change quickly and react to customer demands. By creating an environment where continuous learning and improvement can thrive, organisations can constantly evolve," says Mr Fishlock.

Legacy processes can get in the way of evolution; companies need to change to become primarily focused on customer value and ensuring the delivery cycle time in that value stream is fully understood. Catapult CX can support companies to optimise for speed and enable the business to re-engineer legacy processes and focus on creating more effective value streams.

If the business does not have an appropriate forward-thinking culture, it will be an uphill struggle to make this process a success. It's vital for companies to bridge the gap between IT and the business as a whole to enable digital transformation, which in practice will mean aligning the organisation around value streams, necessitating significant organisational restructure.

By prioritising around value streams, new features can be delivered more rapidly, on an hourly or daily basis rather than commonly adopted quarterly schedules, helping the company culture to evolve, which subsequently forces the technology to catch up with the cultural shift.

Creating multidisciplinary teams that hold both skilled business and IT professionals can remove the traditional silos which limit communication and effective collaboration. Other staff members involved in revenue creation should also play a role in this team so insights from different business areas can be understood directly from those who are closest to the customer and have practical knowledge.

Enabling staff to receive feedback directly from the customer can then be fed back to corporate leadership and ultimately inform the wider business strategy and help deliver a great customer experience.

As long as the focus remains on rapid delivery, in time all the rest will follow. Teams will become empowered, energised and excited, and the organisation will continually improve and become innovative.

In more connected organisations that are able to innovate and deploy successful releases faster, leaders and staff alike will realise the value of this improved speed. After only a few releases have been quickly deployed, IT can build credibility with the business function, which establishes a mutual level of confidence and closer collaboration that leads to both IT and the business being able to co-create value.

A strong relationship between IT and the business is essential, especially in the current age of innovation when companies can often feel the need to buy the latest tech and then look for where it can provide the most value for their business.

Practical business benefits are not delivered simply by adopting new technology. Working practices must be established to recognise the value of continuous innovation; the right work culture delivers benefit to the business and staff alike.

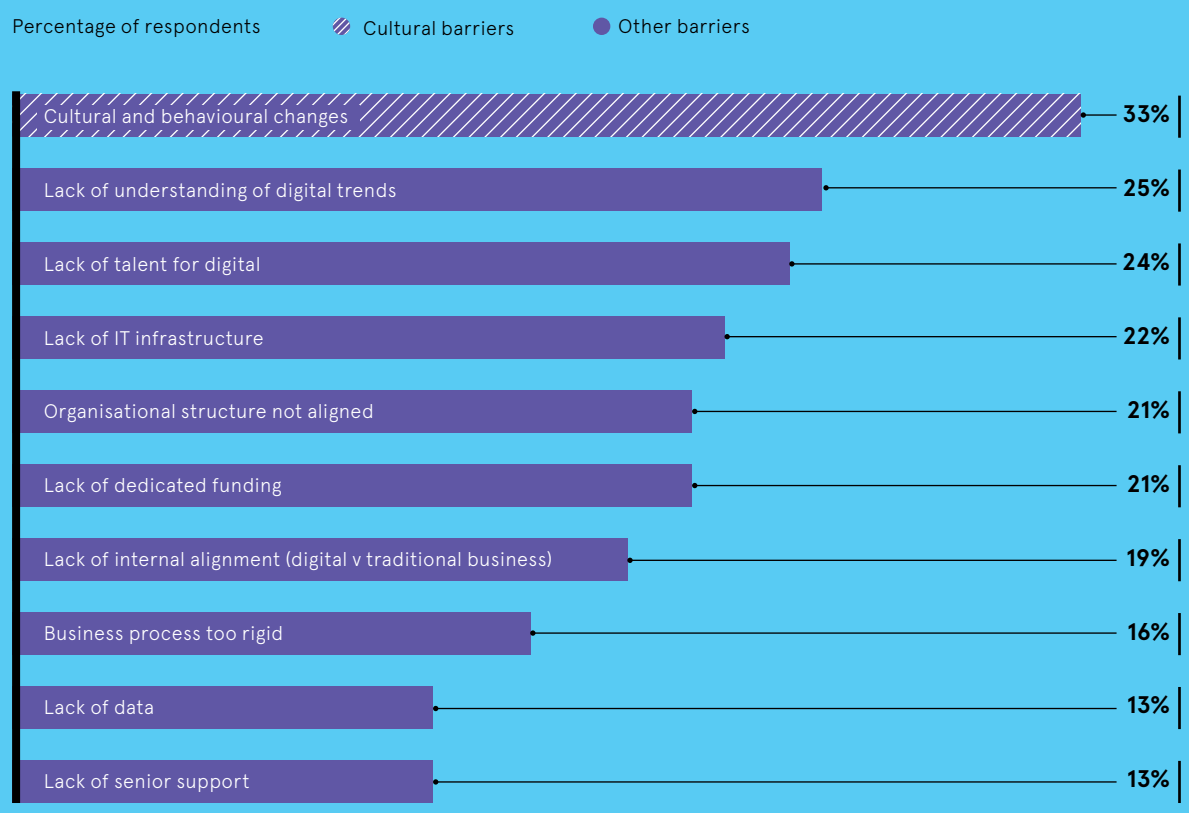
Businesses need to continually ask themselves what technology should they deploy to improve the customer experience and what technology is available to support the business in acquiring and retaining new clients.

Their significant and diverse experience delivering business benefit through digital transformation sets Catapult CX apart from other players in the IT consultancy space. Catapult CX has also helped clients fix massive legacy systems that were slowing them down and making them less competitive.

"For more than 20 years, we've focused on helping clients resolve serious challenges and found many of their problems could have been prevented long before they became major incidents, through improving engineering quality, delivering small incremental changes and creating a culture that values continuous learning, continuous improvement and continuous delivery," says Mr Fishlock.

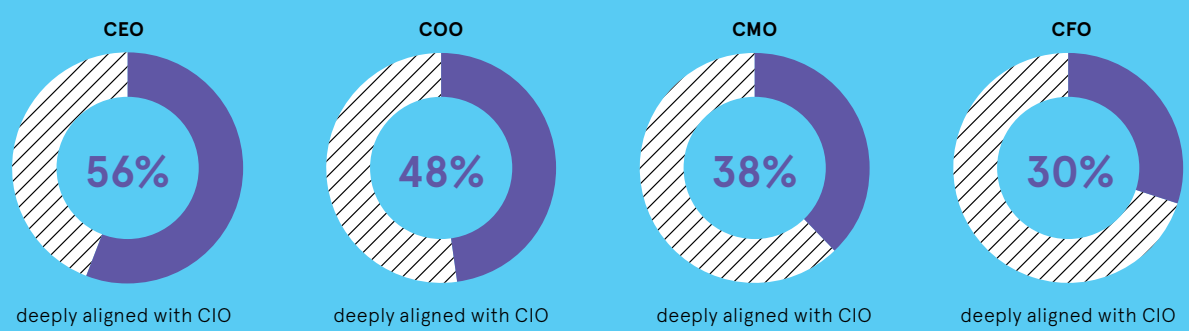
"We know intimately both the technical and business problems associated with poor-quality systems. Therefore, we are ideally placed to work with businesses to create an agile way of working for their staff and become a partner in implementing this culture throughout the organisation. Our core offering is truly based on our history and our proven experience."

WHAT ARE THE MOST SIGNIFICANT CHALLENGES TO MEETING DIGITAL PRIORITIES?



McKinsey digital survey of 2,135 people, 2016

NOT ALL MEMBERS OF THE C-SUITE ARE DEEPLY ALIGNED ON TECHNOLOGY/DIGITAL TRANSFORMATION STRATEGY



Financial Times, 'Disruption in the C-Suite - How Digital Transformation Imperative is Changing CxO Dynamics and Technology Strategy'

> **Businesses should adopt an agile approach to digital transformation, which allows companies to change quickly and react to customer demands**

For more information, please visit catapult.cx

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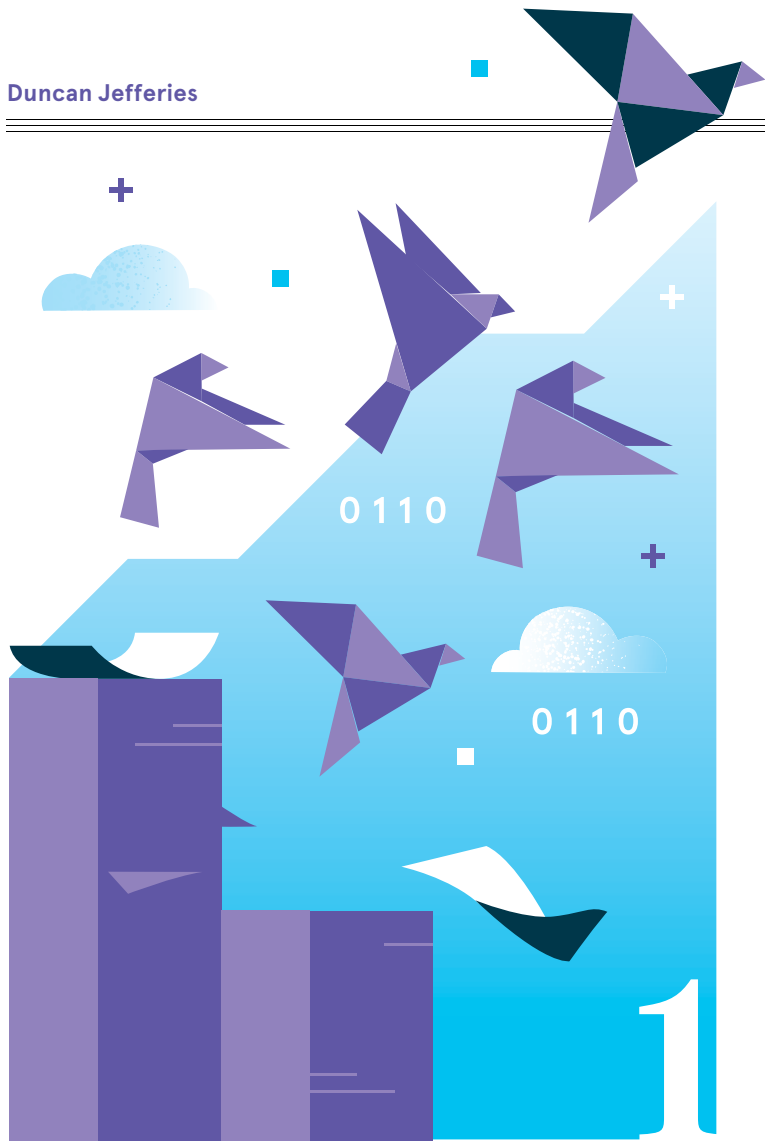
DIGITAL FATIGUE

Five tips to avoid digital transformation burnout

Fatigue can easily undermine digital transformation projects. These five tips should help organisations stay the course

Duncan Jefferies



Know why you're transforming

Research from Econocom shows that digital transformation failures are all too common, with one in four UK projects failing to realise their desired goals.

"There is a big risk that transformation projects can run out of steam. They're typically quite long and they're usually disruptive to ways of working, so it can seem like an uphill battle," says George Marcotte, managing director at Accenture Digital, UK and Ireland. "However, if you take the right steps at the beginning of the project, you can stop these challenges turning into negativity towards the transformation."

The first of these steps is arguably establishing why you actually want to digitally transform the in the first place. "Establish the why. Reinforce the why. Validate and evolve the why. Communicate it again and again," says Ben Hart, founding partner of business futures practice Atmosphere. He adds that this "why" must be "compelling, clear, believable and motivating".

Indeed, organisations that don't develop a strong "why" may struggle to convince employees of the benefits of digital transformation. "Without a clear focus and a dedicated workforce, projects will fail, resulting in transformation lethargy and a consensus among staff who 'have seen it all before' that 'nothing will ever really change'," says Irene Molodtsov, chief executive of business transformation consultancy Sia Partners UK.

Share goals, successes and failures

Even when organisations do have a strong vision in place, poor communication can still lead to digital transformation failures. "Far too often a transformation project is launched with a fanfare," Ms Molodtsov at Sia Partners UK explains. "Then time passes, nothing is heard and the project is forgotten. So when a staff communication is finally sent out, it is not met with the enthusiasm that is required to ensure long-term success."

Messages from senior leaders should be short and simple, she adds. "Remember that the frequency of these messages is also important to help ensure staff are kept up to date with progress." Leaders should also strive to be open. "All transformational projects suffer setbacks. This is normal. Tell staff; they will appreciate both the honesty and humility. Otherwise, both rumour and lies will undermine the success of the project," says Ms Molodtsov.

Ideally, everyone should feel able to get behind the company's strategy. "If you don't have people on board with the change and driving it all levels, then you're going to get hit with natural resistance points, particularly at the middle-management level," says David Holliday, partner at Gate One, a digital and business transformation consultancy. "That can be a big challenge."

Don't overemphasise tech's role

"Digital transformation that hinges around technology, as opposed to the benefits and outcomes it will achieve for people, talent internally and customers externally, will almost certainly fail," says Atmosphere's Mr Hart. "Fatigue can set in quickly when technology leads and people are expected to 'get it' without investment in new people-led skills, attitudes and behaviours for digital success."

Devolving responsibility for digital transformation to the IT department can also cause digital transformation failures. "In many cases, digital transformation is still entrusted to the IT department alone, which must balance this responsibility with day-to-day maintenance and pursuing innovative new concepts that drive the company forward," says Ian Fairclough, vice president of services, office of the chief technology officer, Europe, Middle East and Africa (EMEA), at MuleSoft. "This leaves IT with an insurmountable task that, unsurprisingly, often leads to burnout."

Inefficient use of existing resources can compound the problem. "All too often, IT staff will spin up new digital projects from scratch, without first looking to use digital capabilities that might already exist elsewhere within the business," says Mr Fairclough. "Effectively, this involves IT staff doing a lot of the same foundation work over and over again, creating a 'Groundhog Day' scenario that makes digital transformation projects take longer than they need to."

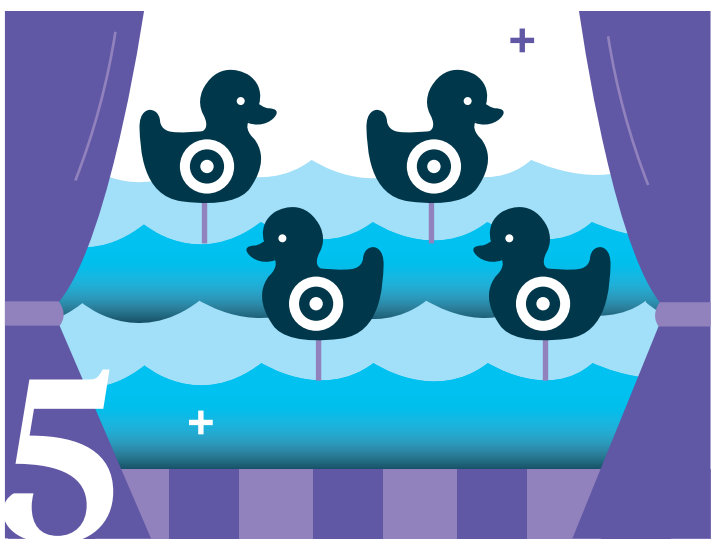
Encourage everyone to contribute

When digital transformation becomes the preserve of one department or certain teams, it's almost inevitable that those on the outside will lose interest, resulting in digital transformation failures. Indeed, as Mr Hart at Atmosphere says: "Being heard, involved and having a voice helps to increase engagement, reducing fatigue."

Engaging with interns or graduates who've grown up in a world of rapid digital change can also help to counterbalance the lethargy of senior staff who are wedded to current ways of working or cynical about the need for digital change. "In many organisations, the thought leadership, development and fresh thinking on digital, AI and robotics has migrated to this [younger] age group," says Sia Partners UK's Ms Molodtsov, who believes these individuals are likely to feel anything but fatigued by the digital vision and agenda set at the top of the organisation.

The IT team can also help to democratise innovation by connecting the organisation's digital assets with application programming interfaces and exposing them on an application network, so anyone in the business can easily discover and harness them. "In this way, anyone, not just the IT team, can start building new digital products and services based on existing capabilities," Mr Fairclough at MuleSoft explains.

Look for quick wins and build on them



If your digital transformation strategy doesn't allow for measurable successes early in the process, it can start to feel "like a long slog towards a moving target that can appear persistently distant", says Atmosphere's Mr Hart. "If this occurs, for months or even years, people can quickly lose sight of why they are even doing this in the first place."

Felix Gerdes, EMEA director of digital innovation at Insight, advises businesses to remember the story of the tortoise and the hare if they want to avoid digital transformation failures. "They must pace themselves when it comes to digital transformation, making sure they do not burn out by embarking on too many initiatives at the same time," he says. "It makes sense to first focus on a small number of projects that can generate quick wins as this helps to develop highly motivated champions in the organisation."

Mr Holliday at Gate One believes there is often a misconception at board level that digital transformation is a destination with a defined end-date. "There's a constant need to evolve, to adapt, to explore new innovations. So it's not a sprint. It's not even a marathon. It's a full-time commitment to a new way of working. And I think that gets right to the heart of the question of fatigue," he concludes. ●

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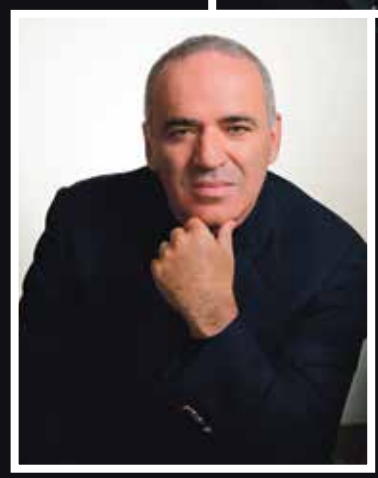

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