



THE DAWN OF A NEW DIGITAL AGE

FOREWORD

If the UK doesn't yet think digital-first, the shift is both inevitable and imminent.

Moreover, the revision of how the nation works will be radical: every decision within every business must start with the online world of mobile, social, data and, increasingly, the likes of artificial intelligence and edge computing.

Three adaptations will be key here.

First, invest. No business is small enough to ignore the change. Indeed, where larger competitors' technological savviness can see them outmanoeuvre slower rivals, smaller companies must keep pace.

Second, embrace the change. Along with threats like cyber-crime come huge opportunities. The cloud and automation are just two examples of how IT can help the budget-constrained compete at larger scale, but attitude to change, not a single technology, will determine success.

Third, think ahead. As the UK embraces a technology-led future, firms' levels of confidence vary widely as to whether they will come out on top. Those who set aside resource, prioritise skills and champion innovation will be best placed to do so.

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Is the UK waking up to tech's potential?

Digital-first will soon be business as usual across the country

The next few years will see sweeping changes in Britain, with tech decision-makers confident that the way we work will be digital-first within the next decade.

The poll of 1,027 IT leaders, conducted by YouGov between 2017 and 2018 on behalf of Brother UK and the Telegraph, focused on the nation's attitudes to new, digital ways of working. While digital transformation began decades ago in the UK, in many companies paper-based transactions and manual processes persist despite widespread innovation offering faster, safer, cheaper and more secure ways of doing business.

But not for long. Almost half (48pc) of respondents believe UK businesses will be digitally transformed within the

next three to 10 years, the final vestiges of analogue work being replaced by digital and especially online alternatives, from accounting to advertising.

The main benefits companies hope to gain from digital transformation are to be more productive (68pc), more customer-focused (62pc) and more secure (62pc).

Up to a third of workers at small companies fear their company is not ready, however. While small businesses often trade on their ability to be agile and adaptive, this raises the concern that many feel unable to keep up with the pace of technological change.

Some respondents remarked that they were too small to worry about IT. Such an attitude is an invitation for your sector to move on without you,

notes Dr Rick Robinson, digital property and cities leader, at the construction consultancy Arup.

"Digital transformation is reshaping entire industries," he explains. "We're seeing new, nimble companies being founded with technology at the very heart of their offering. Existing organisations have to play catch-up to remain competitive."

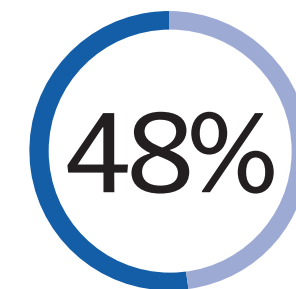
THE BEST, AND THE REST

Digital transformation is happening quickly. Over a quarter (27pc) of British workers foresee it in their business within three to five years, and one-in-five predict it in six to 10 years.

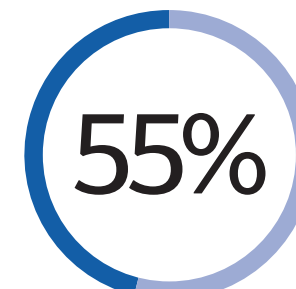
Some small businesses are having a big impact through their adoption of new technology, however. Simon McCalla, CTO of the domain name registry Nominet, says: "We are seeing challengers and disrupters in every business sector, from the app-based banks taking on the incumbents to the sharing economy innovating within the travel and leisure sector."

AccorHotels UK & Ireland is intent on staying ahead of such innovators. Thomas Dubaere, its chief operating officer, says the company concentrates on investing only where technology

DIGITAL TRANSFORMATION



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will enhance guests' experience, such as a new mobile operating system for check-in staff. "This freed our people to approach and greet guests personally on arrival," he says.

The biggest obstacle to innovation for most companies is budget (55pc) followed closely by skills and training at 47pc, then company culture at 35pc.

Again, company size affected responses, with workers at large companies more likely to say that company culture is an obstacle, while those at smaller firms felt limited by their budget – 55pc of them had no innovation budget at all.

Among budget-constrained companies though, emerging technology is still widely available off the shelf. Empowering staff to take advantage of opportunities to embrace technology is one way to modernise a business, if managed correctly, says Richard Slater, principal consultant at the cloud solutions business Amido. "Cloud has allowed inexpensive products to be delivered at scale," he says. "Business leaders need to let go of the 'command and control' approach and empower teams to be accountable in their purchasing decisions."

KEY INVESTMENTS

Most workers felt that the biggest obstacle on the road to digital transformation was the skills gap, with 23pc of those interviewed citing this as a factor. It's closely followed by budget (22pc) and company culture (19pc).

While budget constraints are acute for smaller companies, skills shortages remain a major problem which is affecting the whole country, says Susan Bowen, director of Britain's Tech Talent Charter, which aims to increase tech diversity within the UK.

She describes "a looming digital skills crisis" in the UK, noting the 2017 House of Commons Science and Technology Committee report that 745,000 additional digital skilled workers will be needed in 2018. "It is key that investment is put into the STEM industries to ensure that the next generation is equipped," she says.

Most workers believe that training in digital skills should go right to the top – 56pc believing that their board still needed strengthening in this regard.

One lesson worth teaching, says James Haycock from design and innovation consultancy Adaptive Lab, is that digital transformations are never truly complete. "The world outside isn't standing still so businesses need to constantly reinvent themselves."



Artificial intelligence is tantalising UK plc

AI could help businesses punch well above their weight – but too few know how to take advantage of the complex technology

British businesses are looking forward to a future driven by artificial intelligence (AI) and many believe that it could be the keystone technology of the next industrial revolution. However, many workers worry that their employers may not be ready to seize the opportunity.

Almost half of IT decision-makers (45pc) believe that AI will drive the biggest business innovations of the next three years.

Melissa Di Donato, chief risk officer at SAP Cloud ERP, says this should come as no surprise. “Once in a generation a disruptive technology arrives and changes everything. This time, it is artificial intelligence. The real risk UK businesses face is not embracing AI and the productivity benefits it can provide.”

Respondents believed that AI was more important than other “buzz”

technologies such as the internet of things, virtual reality (VR) and augmented reality (AR).

LABOUR SAVING

Kriti Sharma, vice president of artificial intelligence at Sage, notes that “businesses in the UK spend on average 120 days a year on administration.

“AI can shoulder the burden of back-office administration tasks, such as logging expenses and crunching data, freeing up people to focus on what matters,” she says. “Trillions of pounds will be saved annually.”

Yet, despite the promise of AI, many respondents felt that their employers are not ready. More than

Once in a generation a disruptive technology changes everything

half (56pc) said they felt that their employer was unprepared for artificial intelligence, compared to just 19pc who were.

Even at larger companies, a mere 10pc of respondents said they felt the business was “completely ready”, the poll found.

However, there are many businesses in Britain that are already reaping the rewards from AI, particularly in the finance sector, says Xavier Fernandes, analytics director at financial specialists Metapraxis. “The financial services sector is already strongly implementing AI, and the UK, with the City of London at its heart, is positioned well to continue to be a leader in machine learning and other forms of artificial intelligence.”

But other sectors are not far behind. The Ordnance Survey says it has used machine learning to train a machine model to identify roof types from aerial shots used to generate its maps.

“Machines are much faster at processing images than humans,” says Isabel Sargent, a senior data research scientist at OS. “AI has the possibility to significantly increase the efficiency of our surveying operations, freeing up the surveyors we have on the ground to focus on complex tasks.”

Countless applications for AI are waiting to be tapped in to, but for now it appears those that unlock the value of staff are the most worthy of study.

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Confidence is back in security

Prioritising cybersecurity will allow British businesses to invest in innovation without fear of attack

Cyber-resilience and security are the top technology investments that businesses in the UK should focus on over the next three years, according to IT leaders, with 69pc of respondents saying it was their business’s priority investment, ahead even of key technologies such as artificial intelligence.

James Burns, cyber product leader at cyber insurance firm CFC Underwriting, says the threat is clear for businesses of any size. “Although ransom fees are generally higher for larger businesses with more valuable data, smaller companies can find it hard to get back on their feet or to simply stay in business following an attack,” he says.

Many firms have invested time and money into understanding their exposure to risk and where data exists that could be of value to criminals. The arrival of General Data Protection Regulation (GDPR) has already gone some way to enforcing this attitude across all businesses, but clearly improvements must be continuous as cyberthreats evolve.

GAINING CONFIDENCE

Despite the number of high-profile attacks in 2017, the majority of British workers remain confident that their employers are ready to meet the challenges of cybersecurity.

Nearly half of respondents believe that their employers are ready to meet the challenge (46pc) with just 22pc saying they felt their organisations were either “unequipped” or “very unequipped”.

Small businesses are nearly twice as likely to worry about cybersecurity, with a third saying they believed their businesses were not ready, compared to 15pc at larger companies.

But with threats evolving rapidly, businesses must think ahead and invest in people as well as technology, says Professor Mark Skilton of the information systems and management group at Warwick Business School.

“Businesses need to focus on staff training and online risk awareness, and in an era of machine intelligence with multiple connected smart gadgets, they need greater awareness of what



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SECURING THE FUTURE



More than two-thirds say cybersecurity is their business’s priority investment, ahead of “buzz” technologies such as AI.



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data is actually held in devices,” he says.

With Britain facing a cybersecurity skills shortage, talented employees are highly prized, with 32pc of respondents saying that cybersecurity skills should be prioritised in employees, just behind coding and programming on 37pc.

As cybersecurity grows in importance, cyberskills should be taken equally seriously, says Matthias Maier, security evangelist at big data analysts Splunk. “Businesses need to

ensure that the security officer or team gets a seat at the management table and that they are included from the ground up in all business decisions,” he says.

Such an approach can help shape cybersecurity as an ongoing effort, says Darren Thomson, CTO & vice president of technology services at security experts Symantec, who calls for cybersecurity risk strategies, not “a series of projects”.



Are we seeing a new war for talent emerging in tech?

There may be nearly a million unfilled digital vacancies by 2020, and skills may prove the difference in the job market

For those firms that feel prepared for digital transformation, the key factor giving them confidence is the skills and training they have access to.

Among those upbeat about their business's immediate prospects, 54pc felt well equipped with skills. This compares to just over a quarter who were happy with their budgets for any necessary technology developments.

Of those firms feeling unprepared, 47pc cited a lack of skills, which was their second-biggest concern, topped only by budget constraints.

Gillian Tans, CEO of travel site Booking.com, agrees that employee development should play a key part in helping a business to adapt to a changing environment.

"Without providing appropriate training, businesses will not be able to nurture the skills of their workforce and will ultimately fail to drive productivity and innovation," she explains.

ARE WE AT WAR?

Among those firms that believe they will be ahead of their competitors in the next three to five years, hiring talent is currently their second priority, after innovation itself.

Looking a bit further ahead at those firms expecting to be ahead of the pack in 10 years' time, hiring talent is the greatest focus.

The problem here for all firms is the IT skills shortage, which is set only to get worse. When asked about the greatest challenge for firms and their tech implementation plans, the skills gap was top of the list, cited by almost a quarter of respondents, ahead of budgets at 22pc and company culture at 19pc.

According to tech start-up group the Coalition for a Digital Economy, the UK will have 800,000 unfilled digital vacancies by 2020, highlighting the fight ahead for companies when it comes to attracting and retaining the best technology talent.

The shifting nature of the skills gap is also putting extra pressure on companies. Nick Williams, managing director, consumer and commercial digital at Lloyds Banking Group, notes that mobile developers were the most difficult vacancies to fill at Lloyds when he joined four years ago.

"Today, the gap is in data science and artificial intelligence, machine learning and robotics. The skills gap is a definite area we, as an industry, as a society, need to think about how we're going to help close," he says.

From AI developers to self-driving car engineers, individuals with the right experience and expertise will have the luxury of cherry-picking their ideal employer in the coming years.

SHORT ON DIGITAL SKILLS

54%

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Thinking small

Smaller firms need to innovate if they want to become more productive and competitive

Small firms are the backbone of the British economy. Of the 5.7 million businesses in the UK, more than 99 per cent are small businesses employing fewer than 50 staff, according to a recent report for the House of Commons.

Yet small businesses are way behind their larger counterparts when it comes to investing in innovation. This could in turn have a huge impact on their ability to adapt to new digital ways of working and reduce their productivity.

Over half (55pc) of small businesses haven't set aside any budget for the next year to invest in technology. This compares to only 14pc of medium-size companies and 8pc of larger businesses.

Furthermore, "being more digital" is only important for 38pc of small businesses, compared to 54pc of medium companies and 64pc of larger businesses.

According to Stephen Roper, professor of enterprise at Warwick Business School, digital

innovation can help small firms to punch above their weight.

"The web and social media offer small firms the opportunity to look bigger than they are and sell globally, or to very niche international markets," he says. However, "recent evidence shows smaller, family-owned and run firms in particular adopt less sophisticated management practices and are therefore less productive."

A LACK OF LEADERS?

In smaller companies, IT leaders are often personally leading digitisation efforts, and many note insufficient resources to hire extra talent to help drive innovation.

Despite limited budgets, all businesses need to invest in the future, reckons Sharon Baker, co-founder of small business ad tech consultants, Mighty Social.

"Investment in innovation and talent is the key for business growth, regardless of the size of the organisation," she says.