Nimbus Ninety

The independent community for disruptive business and technology leaders

DIGITAL TRENDS REPORT 2019



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NOTE FROM THE FOUNDER

We live in interesting times. To turn on the news, “uncertainty” sounds like a blight to business – with Brexit, and concerns about profit downturns in companies such as Apple.



2018 saw vast changes in the technology world. In 2019, with the prominent rise of machine learning and automation, opportunities for progress grow alongside threats of cyber attacks. Developments in blockchain promise renewed standards of trust. Across the board, we’ve seen leaps and jumps in all areas of technology.

With more Nimbus Ninety members describing themselves as disruptors than ever before, our community is both leading and responding to change.

For that reason, we are putting together two of our biggest-ever summits in March and September 2019, *Chief Disruptor LIVE*. These will pull together an astounding range of disciplines and thinking; from modern-day customer experience to practical steps towards machine learning and data science.

There will be expert briefings on modern warfare, quantum computing and “Enlightenment 2.0” as the way we consume information, both as businesses and individuals, changes.

I would like to thank all the contributors to this report: everybody who completed the survey or helped set the direction of questions for this year. A special thanks goes out to our interviewees who added a huge amount of value to this year’s report.

They include Dr Cécile Wendling, Group Head of Foresight at AXA; Felipe Penacoba Martinez, CIO at Santander UK; Dr Kath Middleton and Dr Sunir Gohil, AI Medical Experts at Babylon; Christine Ng, Talent Acquisition Partner for Product and Technology at the Financial Times; Ryan Davies, former Global Head of Customer Loyalty at New Look; and Will Scougal, Director of Creative Strategy for EMEA at Snap Inc.

We wish you a fruitful and interesting 2019.

EMMA TAYLOR
FOUNDER AND MANAGING DIRECTOR
NIMBUS NINETY

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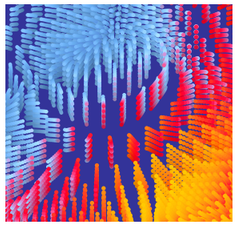
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WELCOME TO THE DIGITAL TRENDS REPORT 2019

At the end of every year, we survey the digital leaders of our community to explore what the priorities and challenges are for the year ahead.



Throughout 2018, we saw our digital civilisations evolve and grow, as the promise of artificial intelligence (AI) and platform technologies shape our societies. Greater connectivity between people and things has given prominence to the sharing economy, and with it, a challenge to incumbent organisations. Digital entrants across sectors are accelerating technology innovation; simultaneously, consumers have more autonomy than ever before.

Technology-driven change has held huge political ramifications over the last year. Data privacy has moved beyond the ethical into the realms of the political, and the end of net neutrality law in the US have incited debates around regulation of online platforms.

Meanwhile, poor handling of sexual harassment claims at multiple tech giants have led to a backlash against tech corporations. It has become clear that unimaginable innovation means a shift in culture and power, and the trajectory for this in 2019 will be a global phenomenon.

The most surprising takeaway for me was that data management will be a larger challenge in 2019 for organisations than Brexit. This suggests that the challenges that our members face are immense; and that the rewards for good digital management are commensurately large.

It is our privilege to aid organisations as they navigate these changes. I hope the following findings help aid your understanding as you chart the course.

ADAM STEAD
HEAD OF RESEARCH AND EDITORIAL
NIMBUS NINETY

THE DIGITAL TRENDS

1.

DATA IS A BIGGER CHALLENGE FOR ORGANISATIONS THAN BREXIT.

Respondents regard generating and using insight from data effectively as a big challenge: 45% considered it the biggest challenge for their organisations in 2019, whereas only 19% considered Brexit upheaval the biggest challenge for the same year. Improving data management and strategy was ranked as the highest priority for organisations overall, with 84% of respondents considering it a high or very high priority.

2.

THE COLLAPSE OF PHYSICAL WILL HAPPEN FASTER THAN WE THOUGHT...

By 2022, most respondents believe a consumer will be more likely to access their services through mobile, website or an app than a physical location: just 33% of respondents cited a physical location as a place in which their product will be possible to access. From the leisure and retail sector, 50% of respondents still viewed physical space as an important channel for customers in 2022.

3.

...AND CUSTOMER INTERACTIONS WILL BE TRANSFORMED ENTIRELY.

51% of respondents said that customers will be able to access their service via a chatbot, alongside 48% who cited voice as a method of access. Augmented reality was cited by 32% overall, only 1% less than a physical place.

4.

LARGER ORGANISATIONS ARE AUTOMATING; SMALLER ONES ARE MORE FOCUSED ON CUSTOMERS.

For large or extremely large organisations, improving operational efficiency was considered the highest digital priority with 85% of respondents considering it a high or very high priority. On the other hand, 85% of medium and smaller organisations saw improving customer engagement as a high priority in their digital strategy.



5.

DEALING WITH SKILLS GAPS IS NOT A PRIORITY.

Although 63% of respondents agreed that their organisations were struggling to attract the right skill sets, only 20% ranked staff training as a very high priority in 2019; the lowest of any listed priority. This may have something to do with increased implementation of automation.

6.

MEMBERS STILL WORRY ABOUT DATA; LESS ABOUT GDPR.

Just 4% of respondents said they do not worry about customer data. 33% cited their biggest worry as a data breach. In the run up to GDPR, concerns around compliance reached its peak. In 2018, respondents ranked this as challenge at 35%, up from 15% in 2017, and dropping again to 18% in 2019.

7.

SPEND IS STILL ACCELERATING.

Digital spending over the last three years is increasing. 70% of respondents expect to see their budget increase this year, up from 67% last year and 54% the year before. The biggest area of spending continues to be in big data analytics.

8.

"PERSONALISATION" IS A FRAUGHT TERM.

Respondents ranked an intuitive user experience and highly personalised products/services as most important to their customers at 27% and 25% respectively. However, improving personalisation was one of the lowest ranked priorities, with only 58% ranking it as a high priority.

9.

AI IS ON ITS WAY TO WIDESPREAD IMPLEMENTATION.

Machine learning was ranked as the most disruptive technology for 2019 at 54% (a decline from 61% last year). However, the number of respondents who described machine learning as among their top three areas of spend increased from 11% to 27% from 2018 to 2019.

10.

TRULY DISRUPTIVE ORGANISATIONS ALLOW PUBLIC FAILURE.

The statement 'my organisation forbids public failure' was met with mixed responses, with the highest peak over neutral (38%). Self-described disruptors were the exception, in which the majority (52%) disagreed, suggesting that disruptive organisations have a more accommodating attitude to failure.

WHO ARE THE RESPONDENTS?

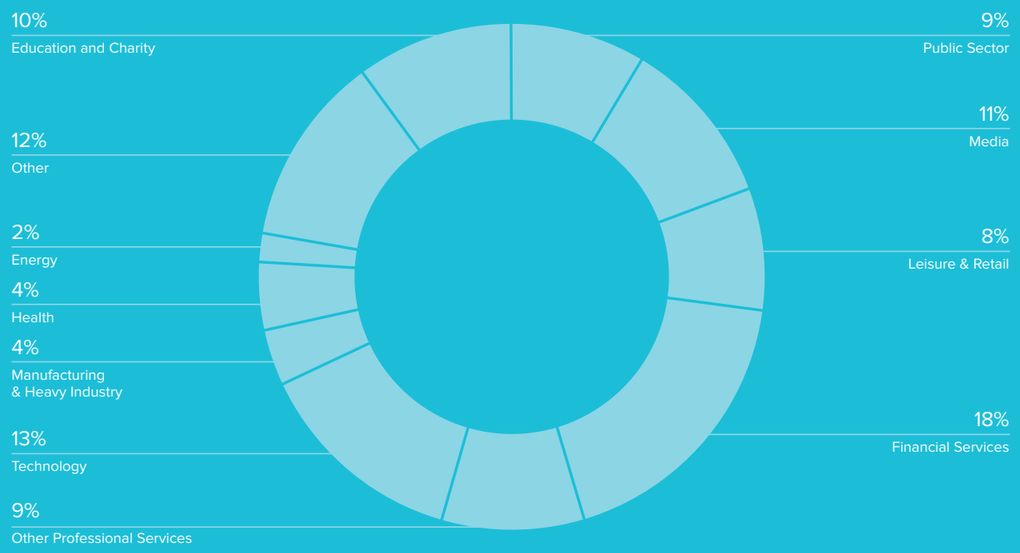


Fig. 1: Industry sector

Respondents came from across multiple sectors, with the highest number from the financial services, media, technology and the public sector. (Fig. 1)

Organisation size varied from start-up to extremely large organisations. (Fig. 2)

Remits most commonly included Digital, Strategy & Planning and IT & Technology. (Fig. 3)

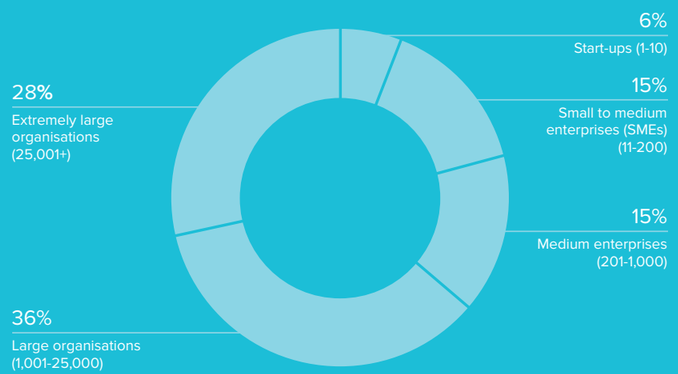


Fig. 2: Organisation size (by number of employees)

279 digital leaders, from a wide range of roles, organisations, and industries, contributed to this year's survey.

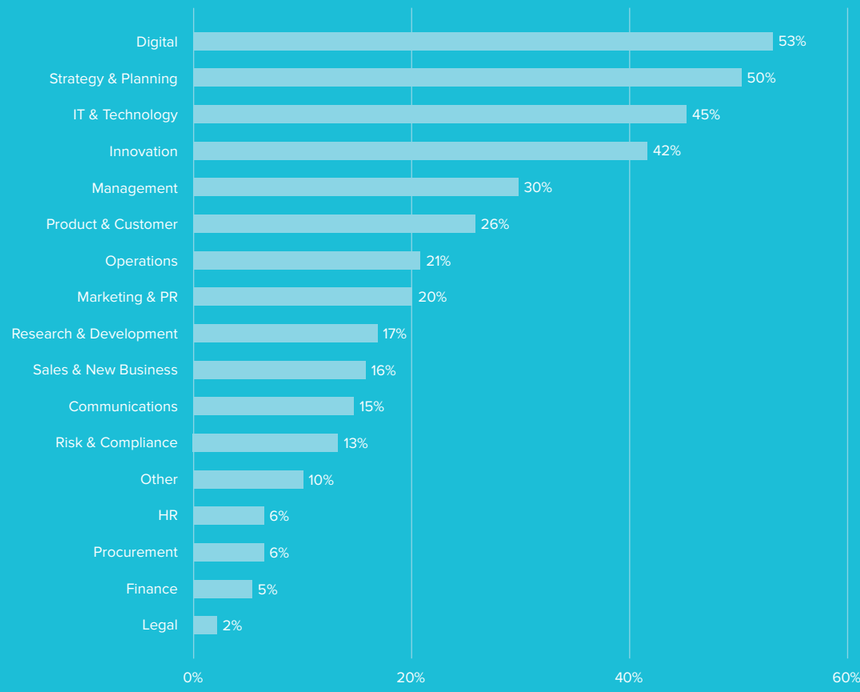


Fig. 3: Job remit

We asked respondents to class their organisation's attitude to change. Most organisations described themselves as disruptors or proactive defenders, with fewer describing themselves as reactive defenders. (Fig. 4)

With this variety of size, industry and attitude to disruption, we have drawn out some key insights throughout the report by contrasting different types of respondent.

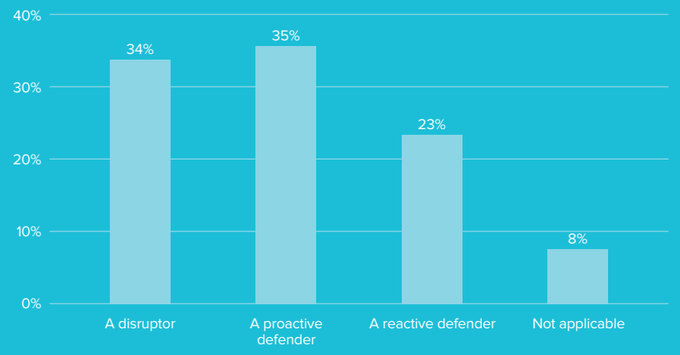


Fig. 4: Thinking about your organisation's approach to change, would you class your organisation as...

FROM INSIGHT TO FORESIGHT

In 2018, Toys “R” Us filed for bankruptcy after failing to keep up with rivals like Amazon. Preparing for the unknown in the future is difficult; but it is ultimately necessary for organisations to survive in the long term.

Digital leaders must anticipate both changes in the marketplace and new developments in technology to remain competitive. In the first part of the survey, we wanted to ask respondents big-picture questions, particularly to ascertain attitudes to artificial intelligence (AI), which is often touted as the most disruptive technology of our age.

Machine learning and automation

54% of respondents selected machine learning as the most disruptive technology for 2019, a decline from the 61% who selected it in 2018. (Fig. 5) As we see in the 'Investment' section, despite this drop in stature, organisations are investing in machine learning at an increasing rate.

Automation saw a rise from 13% in 2018, to 32%. In the 'Skills and Workers' section later in the report, we will see that automation is increasing as a priority for organisations.

Platform technologies and digital ecosystems were also highly ranked, both at 30%, up from 23% and 18% respectively in 2018. (Fig. 5a) Media

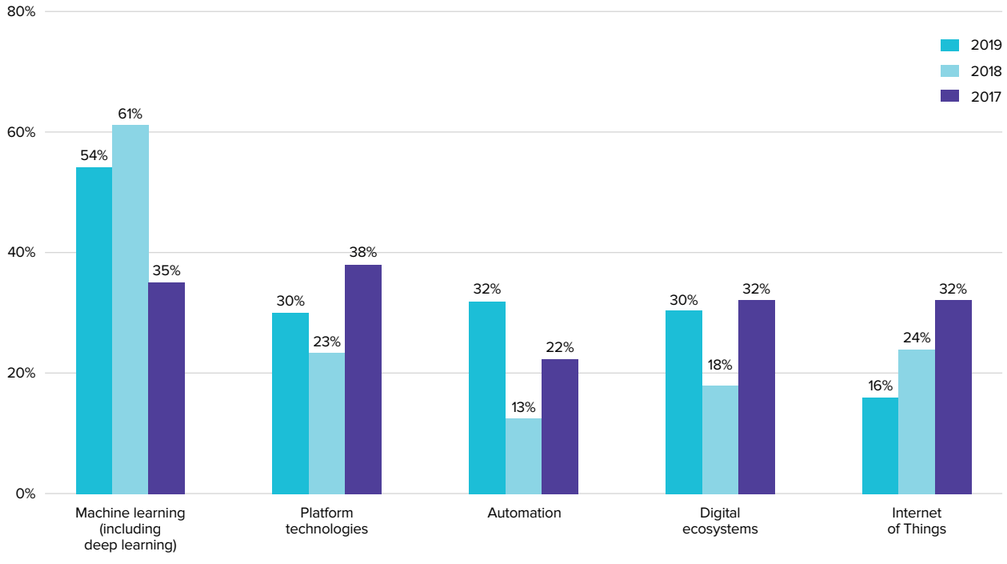


Fig. 5: Which of the following will most disrupt your industry this year (2019)?[1]

was among the industries most likely to perceive platform technologies as disruptive to their industries.

Machine learning was ranked as 2019's most disruptive technology for the majority of industries. The public sector, however, ranked cyber defence as most disruptive (54%), particularly among military respondents. (Fig. 5b)

Implementing artificial intelligence

Although machine learning and automation were ranked as the most disruptive technologies for the forthcoming year, many organisations faced other significant challenges implementing new technologies.

The implementation of AI is hindered by several challenges, with 26% of respondents considering lack of skills to be the biggest. (Fig. 6)

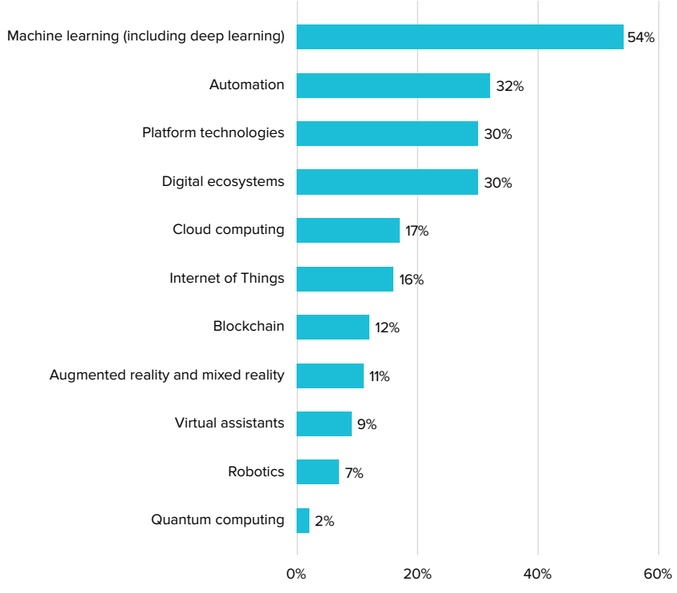


Fig. 5a: Which of the following will most disrupt your industry this year (2019) ?

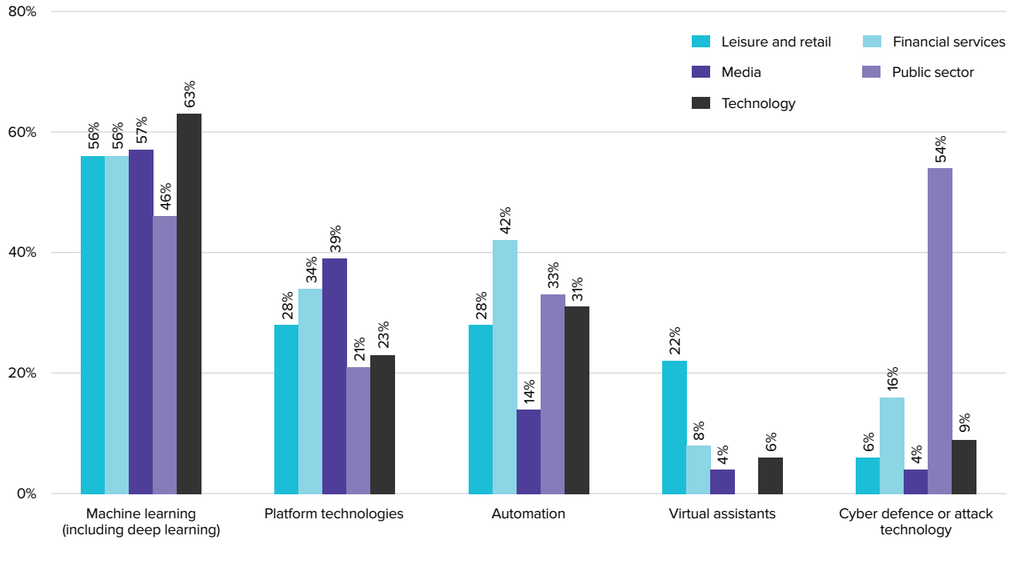


Fig. 5b: Which of the following will most disrupt your industry this year (2019)?

The perceived obstacles to AI being implemented were more dependent on size of organisation than industry sector. Start-ups and SMEs were more likely to rank lack of applicability to the sector as a challenge (25%), while 18% of large organisations found the limitations of the technology to be the biggest challenge after lack of skills (30%). (Fig. 6)

Priorities and challenges

Respondents were also asked to choose the biggest challenge facing their organisation in 2019.

Generating and using insight from data effectively was ranked as the biggest challenge for organisations, selected by almost half (45%) of the respondents. (Fig. 7)

Compliance, one of the bigger challenges from 2018 at 35%, dropped to 18% in 2019, most likely a result of the General Data Protection Regulation (GDPR) taking effect. Leisure and retail, media, and the public sector, all face a significant challenge with legacy technology, which respondents from those sectors ranked at 47%, 57% and 70% respectively. (Fig. 7a)

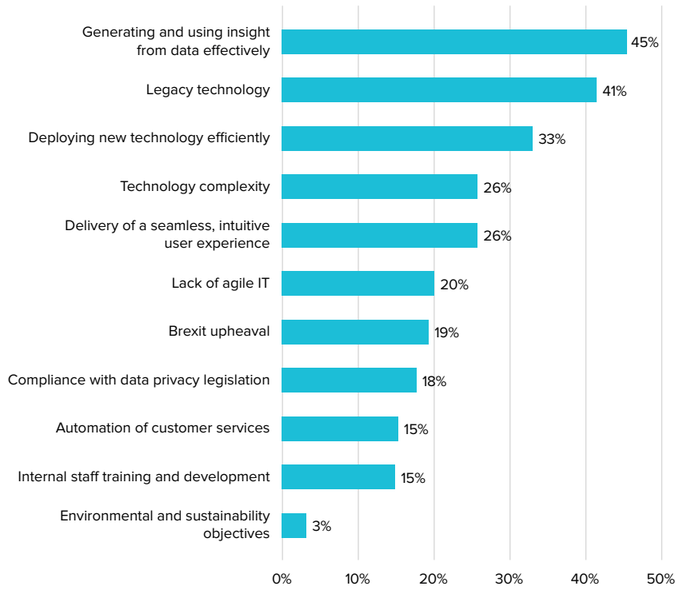


Fig. 7: What will be the biggest challenge facing your organisation as a whole in 2019?

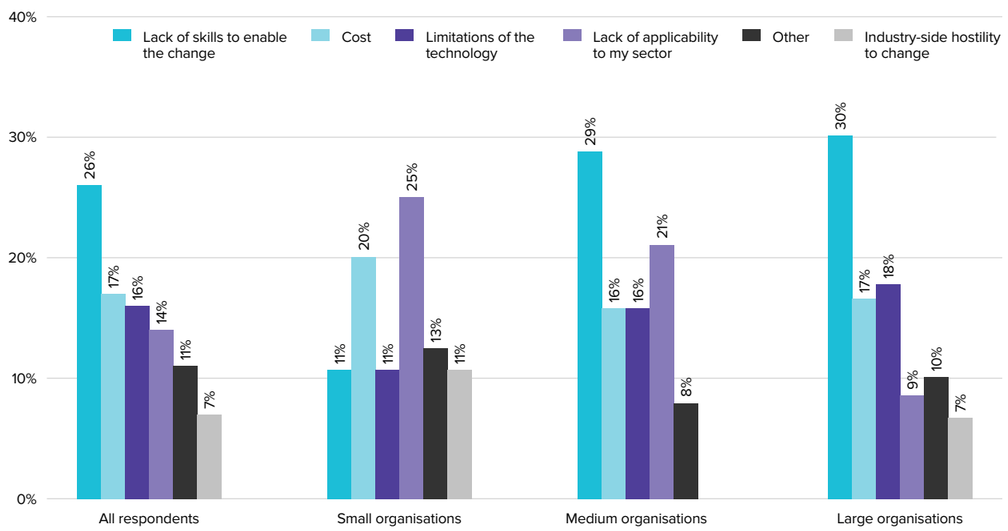


Fig. 6: What limits the effective deployment of AI within your industry?

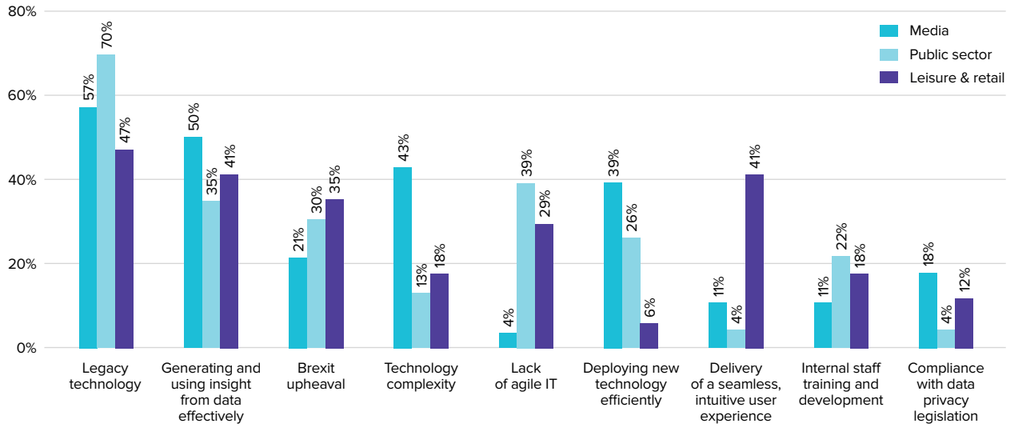


Fig. 7a: What will be the biggest challenge facing your organisation as a whole in 2019?

Brexit upheaval is perceived as a relatively smaller challenge at 19% – a surprisingly low figure given the prominence of Brexit news coverage.

Improving customer experience and engagement remained the top priority for organisations in 2019, and remained consistent from 82% rating it a high priority in 2018 to 84% rating it high or very high in 2019. (Fig. 8)

Replacing legacy technology and staff training and development were the lowest ranked priorities, with only 24% and 20% of respondents respectively ranking them as very high. (Fig. 8)

Extremely large organisations are slightly more likely to rate improving operational efficiency and implementing automation as a high priority. (Fig. 8a)

The year ahead

Overall, organisations have similar priorities to previous years, but are more likely to be ready to invest in AI and automate parts of their organisation than they were last year.

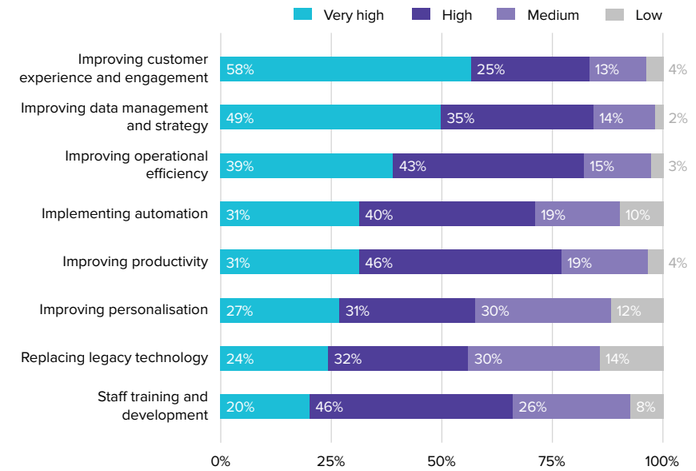


Fig. 8: Please rank these digital initiatives according to priority.

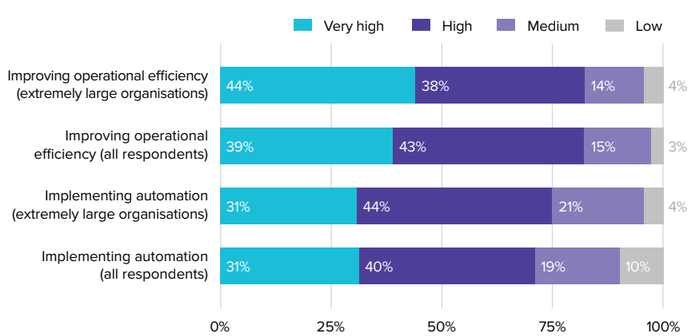


Fig. 8a: Please rank these digital initiatives according to priority.

PREDICTING POTENTIALS

WITH DR CÉCILE WENDLING, GROUP HEAD OF FORESIGHT AT AXA.

FOR ORGANISATIONS TO SURVIVE IN THE LONG TERM, THEY NEED FORESIGHT AND AN UNDERSTANDING OF FUTURE DISRUPTION. WITH YEARS OF EXPERIENCE AND RESEARCH IN FORECASTING AND RISK MANAGEMENT, DR CÉCILE WENDLING KNOWS WHAT PREPARING FOR THE FUTURE LOOKS LIKE IN THE INSURANCE SECTOR. SHE TELLS OUR EDITOR, SHAMMAH BANERJEE, ABOUT WHAT TO EXPECT IN 2019.

In 1455, movable type technology brought the first printed book to Europe: the Gutenberg Bible. Today, we've seen 130 million books printed globally.[2] 1969 marked the year that computer scientists at the University of California sent the first message over the ARPANET network to their colleagues at Stanford: the first imagining of the internet. Today, over 80% of the developed world are regular internet users.[3] At the time of breakthrough, it's almost impossible to know just how big a technology will be.

On the other hand, the idea of "artificial intelligence" has been fuelling visionary imaginations since Alan Turing's pioneering of computational theory in the 1930s. Asimov's 1940s series 'I, Robot' imagined a potential future of android-human interaction as soon as 2035.

With hindsight, it's easy to see how the potential for technologies can be vastly misjudged in terms of timescale; but plotting potential along a timeline is vital for being prepared to deal with it.

Today, we're living through breakthroughs in AI and blockchain, and are on the cusp of quantum computing totally changing our world. Predicting the potential of these is necessary for survival in the 21st century – it is the job of Cécile Wendling to do precisely that. I caught up with her to find out how she does it and what insights she can share for the upcoming year.

DISRUPTION IS COMING

I asked Cécile what she considered the big upcoming disruptions to be.

Cécile launched into a list of technologies. 'My job is to work on long-term topics,' she said. 'The things that can disrupt AXA in ten years. If I had to pick out the main things…I would start with quantum computing. I think quantum computing could change how security works and could end certain data protection methods that already exist. Second, I would say voice: today we interface with a keyboard, tomorrow we will interface with voice. You will have to consider, what is the voice of your company, is it male or female – so on and so on.'

'The third is "affective computing",' Cécile continued, by which she meant AI designed to affect emotion. 'How can you play with emotions on a digital interface? I think that's very important – you can nudge people, change their behaviour. We've seen how this can be dramatic with Cambridge Analytica. Finally, the real change of machine-to-machine interface will also be very important in the long term.'

> "I think quantum computing could change how security works and could end certain data protection methods that already exist.

I wondered how all of these things were going to impact the world of insurance. In finance particularly the security threat posed by quantum computing, for example, is ominous: if not managed carefully, it could create global economic chaos. How is the insurance sector dealing with potential risks?

'The model of insurance is pooling risk among a group of people,' Cécile replied. 'It's all about solidarity and bringing people together, to share risks together. Bringing people together makes them better together. In the face of disaster, you can be stronger if you have each other sharing information on prevention. This is why it's so important that people understand that you cannot know individually what is a risk, because in insurance, part of that risk is always a mystery: you don't know what can happen. This is why together, we are stronger.'

IT'S HAPPENING NOW

In her list of upcoming disruptive technologies, Cécile hadn't mentioned what I had thought were the big ones: AI and blockchain. I asked her where she thought these two technologies figured in terms of disruption.

'That's not the future, that's the present,' she said. 'That's what's happening now. AI has three ways it's changing the insurance business. First of all, the way we operate inside the company is changing – the way we do fraud detection, analytics. Secondly, it changes the way we interact with the customer: we can interact through a chatbot and other elements. And third, it changes what we have to insure; for AI and tech-led companies, we have to insure their data.'

I liked Cécile's methodical approach to answering my questions: it seemed appropriate for someone whose job demands a logical process of consideration. Coming back to her point on customer interaction, I wondered if chatbots are entirely satisfactory as a customer interface – surely people having problems with their insurance would want to speak to an actual human?

'Yes, I don't think chatbots are that good,' she agreed. 'Especially in the field of insurance, because the natural language [processing] is very difficult. It's not like booking a train ticket or something, for example – that's a lot easier. Trying to identify on the website what is the real need of the customer is difficult. It's easier to interact via chatbot over buying a ticket, than an insurance exchange.'

One of my concerns with AI is with the analytics Cécile had mentioned. It is not uncommon to hear about algorithms becoming biased against certain demographics because of imbalanced data. I asked Cécile how this was managed at AXA and if we are seeing the solutions for this perpetuation of biases.

> "Ethical use is not just about data protection and cybersecurity, it's really what we do and what we don't do with the algorithms.

'Yes, we are working a lot on responsible AI; we're financing a lot of that research. We have produced a guide on trusting AI, we interview people who are in that work. The big question is about diversity and inclusion. When you do machine learning, you can have implicit discrimination if, for instance, your data set is not representing the whole population. If it's presenting more male than female, the recommendation or the outcome of the algorithm will be different in its impact for male and female. So working on that tool, the metrics of it, is very important to dealing with bias in that asset.'

'Second of all, it's very important to have a governance of AI, where you ask yourself what you do and don't do with it. There are lots of debates in society, for instance, on facial recognition. It's very important that we all decide what we do from a perspective of defending the red line – [you have to] know the things you won't do because they don't defend your values. On the other hand, you must share the values that you have: if diversity and inclusion is one of those values, you must walk the talk always – and that also means with AI. So ethical use is not just about data protection and cybersecurity, it's really what we do and what we don't do with the algorithms.'

'That's why you need to work on what I call "responsible AI by design". You need to, by design, set up a process where you take into account the context of data collection, the engineering of the algorithm, the X plus metrics to reflect that it's not biased and there is no deviation. So there are technical tools that you need to put in place, and also governance tools, where you decide what you do and don't do. We need to work on both.'

IT'S ABOUT THE PEOPLE

We moved on to discussing the other big technology of the moment: blockchain. I wondered if blockchain was coming into the solution for risk management?

Cécile nodded. 'Yes, there are several uses of blockchain at the moment. We have launched a product called Fizzy in order to provide smart insurance contracts. That means, for example, if your flight is delayed it will automatically trigger a payment compensation.'

'The second way blockchain is influencing the insurance sector is with what we call "RegTech" – regulation technology. You can use blockchain to know your customer. It can also be a way for your customer to store a proof of insurance. If they are in the middle of a catastrophe, anywhere on earth, they can see the proof of that. There are millions of user cases where blockchain can really help. It's also very important for alliances of insurance, where there needs to be a transfer of information, portability of contracts.'

> "You cannot just have the data scientist working on it, you also need the compliance expert, the lingual expert, the customer expert.

I wondered what difficulties had been encountered when trying to implement initiatives around new technologies into her organisation.

'First of all, you need to educate people on the technology,' she said. 'If no one is familiar with how the neural net is working or how blockchain is working, it will be very difficult. You have to explain all of that. Second of all, it needs to be transdisciplinary. You cannot just have the data scientist working on it, you also need the compliance expert, the lingual expert, the customer expert. You have to acquire transversal thinking which is not always easy.'

'Third, you need to have the right brain. There is a war for talent: it's very difficult to recruit and retain the people who are necessary and who have the right understanding of these new technologies. And fourth, you need a lot of foresight: you can be really good in data science but if the next generation is quantum computing, it's not going to be the same skills. You need to be adapting your skills very quickly.'

People certainly slow down implementation of technologies: they aren't educated enough, they enforce bureaucracy. In that vein, did she think Brexit was going to pose a difficulty for technology progress? With such a big AI base in the UK with companies like DeepMind and SwiftKey, would a break with Europe impact them?

'For me, there is one big issue and that's sovereignty,' said Cécile. 'Are we sovereign in Europe when it comes to AI? My answer today is no. If you think of big investments that become sovereign, most of the time they are dual investments – to do with defence and to do with products. My fear with Brexit is that the military or security aspects of the partnership between European countries is weakened – there'll be less dual innovation, less dual investment. We need a lot of investment and energy for building an AI-sovereign EU and with Brexit that could be more difficult.'

Foresight seems to be a dual occupation: tracking the technologies is really about tracking how it will impact human behaviour. Cécile had reminded me that while the trajectory of different technologies can be hard to predict, humans are even harder.

It's what humans do with the technology that is uncertain – and, as we've seen, the potential is huge.

THE COMPETITIVE LANDSCAPE

The lifespan of an S&P 500 company fell from 67 years in the 1920s to less than 20 years in 2017.[4] This is an indicator of a long-term increase in levels of disruption for large companies. It implies that the rate of change in the services we consume and the way we consume, provides small challengers with the opportunity to usurp ageing incumbents.

There is no reason that this trend should continue indefinitely. In this year's Digital Trends Report, we wanted to test the pace of disruption in different industry sectors.

Competitive change is still accelerating

The number of respondents who describe the biggest period of disruption for their industry as happening now has increased from 52% to 59% over the last year. (Fig. 9)

This included 54% of public services, 56% of financial services and 61% of retailers. Media is most acutely disrupted, with 82%

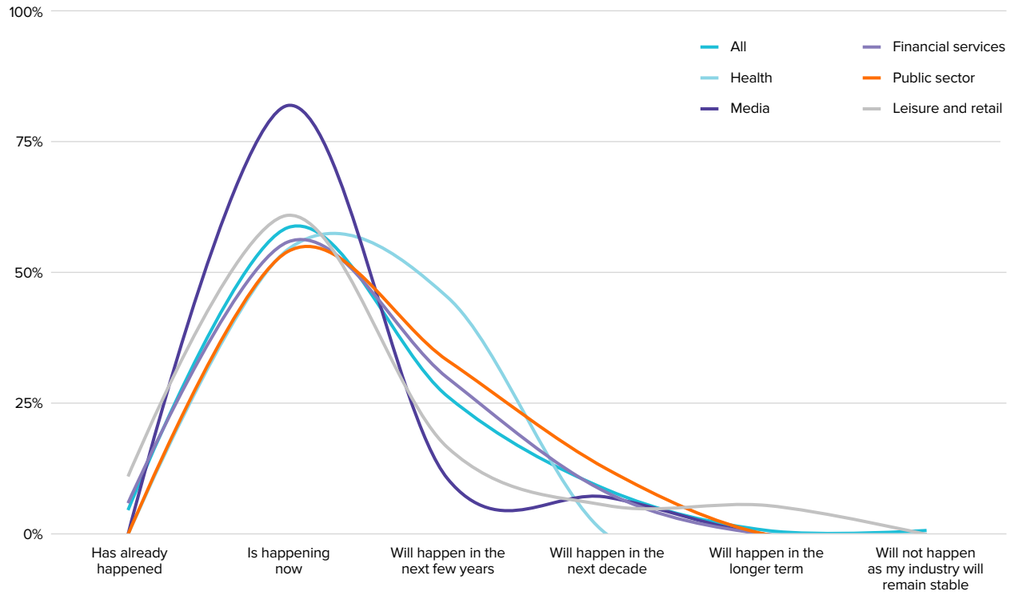


Fig. 9: The biggest period of disruption for my industry...

of respondents believing most disruption is happening now. (Fig. 9)

Just 5% of respondents answered that most disruption in their industry was in the past. (Fig. 9) Therefore, industries that have seen historic disruption (for example, media) view it as ongoing.

Respondents are driving disruption

Respondents took a positive view of their propensity to change their industry, as 34% of respondents described themselves as a disruptor compared to 18% last year. The decline in reactive defenders from 2018 suggests a more positive attitude to change. This is despite other indicators of organisational approach to change remaining consistent to previous years. (Fig. 10)

Levels of investment in new technologies are on the rise; digital budgets have increased for three years running. (Fig. 11)

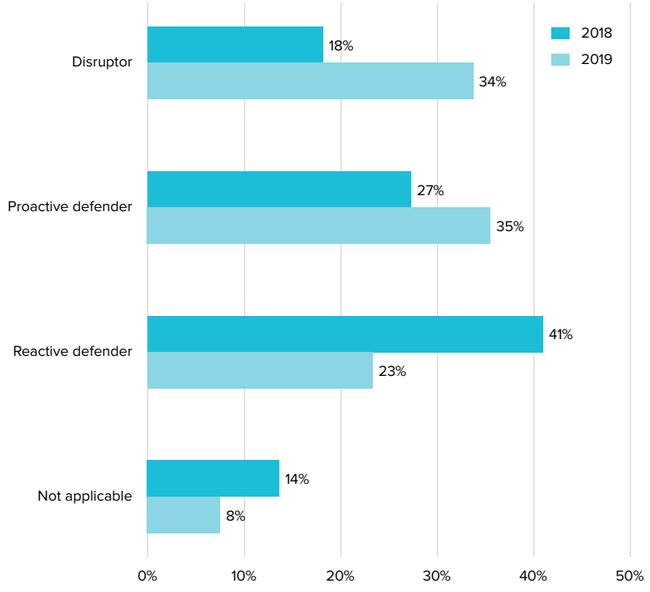


Fig. 10: Thinking about your organisation's approach to change, would you class your organisation as a...

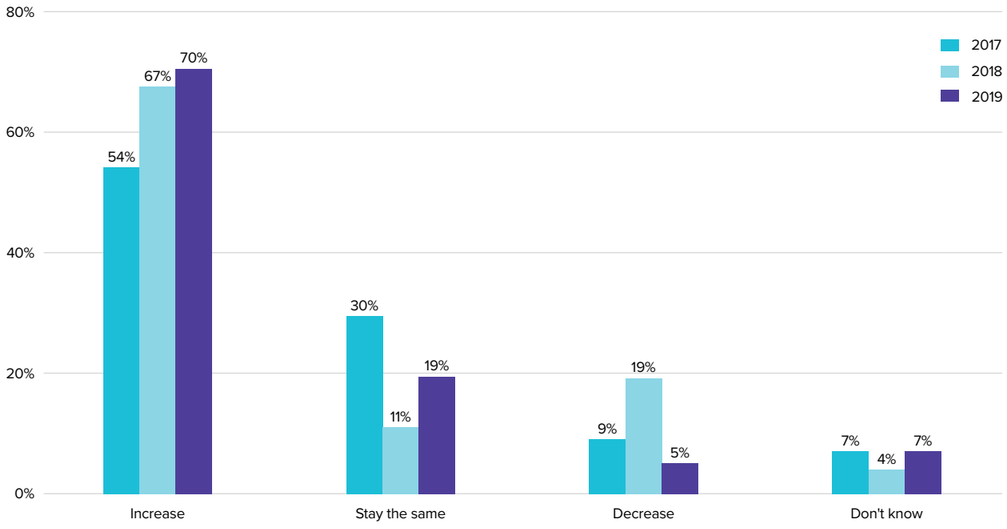


Fig. 11: In 2019, do you expect your spend on technology to...

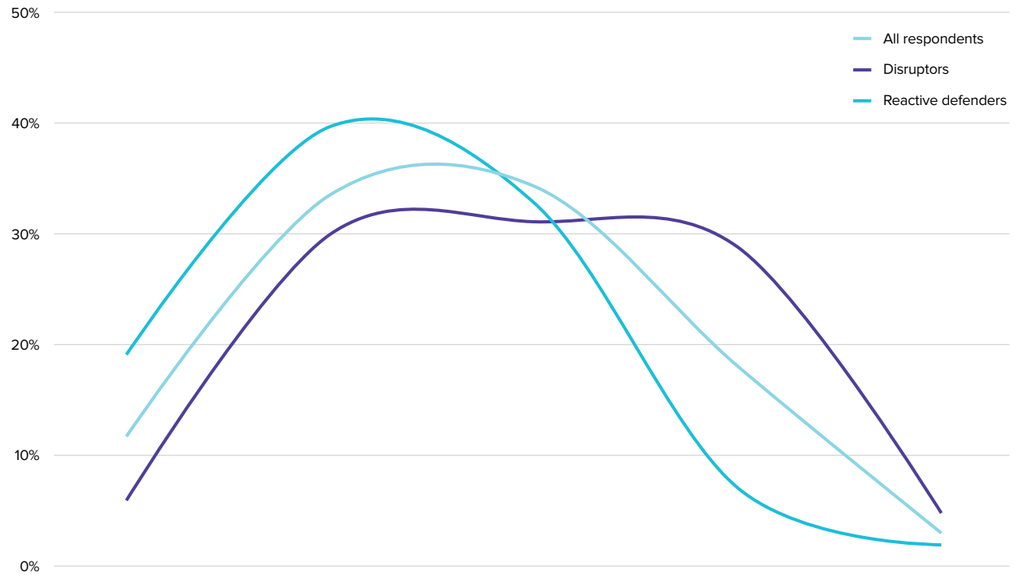


Fig. 12: 'The digital projects we must deliver are becoming harder year on year.'

Respondents were more likely to agree than disagree that the projects they were being asked to deliver were becoming more difficult year on year at 45% versus 21%. (Fig. 12).

The orientation of competitive threats is changing

In the short term, 47% of businesses were more likely to rate a traditional competitor as their biggest threat.

However, in the long term, an organisation which does not yet exist was perceived as the greatest competitive threat, cited by 32% of respondents. (Fig. 13)

The competitive environment is therefore tightly fought and disruptive. Budgets are increasing year on year, but the projects that organisations must deliver to keep up with their competition are becoming more difficult.

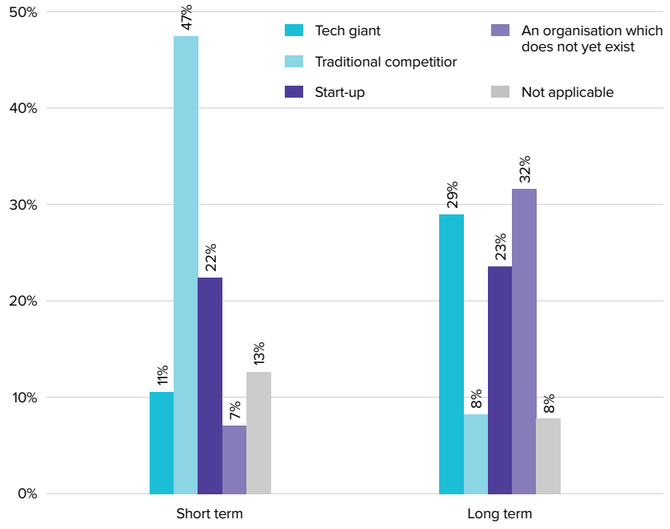


Fig. 13: Who do you expect will be your competitor in the short term and in the long term?

DEALING WITH COMPETITION

WITH FELIPE PENACOBA MARTINEZ, CHIEF INFORMATION OFFICER, RETAIL AND BUSINESS BANKING, AT SANTANDER UK

SUCCESS AT AN ORGANISATIONAL LEVEL HINGES ON AN UNDERSTANDING OF THE COMPETITION AND THEIR STRATEGY. FOR FELIPE PENACOBA MARTINEZ, CHALLENGER BANKS HAVE POSED A NEW THREAT TO BANKS LIKE SANTANDER. WE SENT OUR EDITOR, SHAMMAH BANERJEE, TO FIND OUT HOW COMPETITION IS EVOLVING IN FINANCE.

The rise of challenger banks has cast banking in a new light: possession of a neon debit card has gained cult status amongst Gen Zers. Start-up bankers can go to work in jeans and a t-shirt.

Customer experience has been stepped up with fun marketing ploys like “golden tickets”. These are sadly not trips to a magical chocolate factory, but rather a queue-jump ticket for a friend to get to the top of Monzo’s waiting list. Banking has become colourful, glamorous, even charismatic. The last decade has witnessed a huge culture shift.

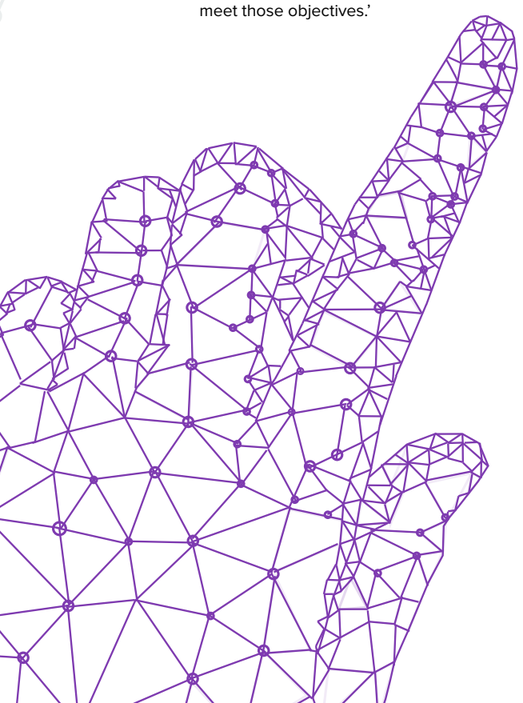
For those trailing behind in functional monochrome, the threads of competition have become numerous and messy. Where customer trust was once based on a bank’s competence, security and reputation, “digital” and aesthetics have now tangled it all up. The traditional bank must share the space with a new type of bank that prides itself on being “truly digital” and wholly transparent.[5] It’s left to the customer to interrogate those claims and choose a bank.

As Chief Information Officer at Santander UK, Felipe Penacoba Martinez is all too familiar with the challenges presented by competing in the same arena as banks that trade on novelty. I caught up with him to learn about how incumbents remain stable in a market that is shifting beneath their feet.

BECOMING DIGITAL

Felipe explained to me the climate of the financial sector.

‘Obviously we have competition coming up with the new banks, fintechs, new players. We have a lot of pressure from them so we have to react by becoming more efficient with cost and finding new ways to cater to customer needs. In order to meet all those objectives, you need to innovate. It’s about how you can leverage the new modern technology to offer more relevant products and services for our customers, simplifying your processes so that you serve their needs better. Innovation is the fundamental enabler to meet those objectives.’



> “[Challenger banks] have an unfair advantage. They have built from scratch recently...

I wanted Felipe to be more specific. Could he tell me more about these new technologies? How were they impacting infrastructure and strategy?

‘One thing which everyone’s talking about now is open source technologies,’ Felipe explained. ‘Being “open source” means that different solutions can be integrated seamlessly from different vendors. In the past, some of these technologies wouldn't be compatible and wouldn’t work when you put them together. Open source works with APIs – a standard interface that makes it easier for one system to talk to another. New systems are built directly into the cloud: they are what we call “cloud native”. That means that they’re cost-effective, scalable and can support any kind of volume; they are also more reactive when something goes wrong in the infrastructure. That’s more agile, more resilient.’

AGILITY IS COMPETITION

Being young and relatively new is, digitally, an advantage to challengers. Their model is the freshest on the block – they’ve been able to start with a clean slate. In contrast, adapting a large organisation like Santander to new technologies, Felipe argued, is a huge operation. Interestingly, he saw the optimistic side of this.

‘It’s a threat, but it’s also an opportunity, no? Those banks are doing great things. They do things much better than we do, because they have an unfair advantage. They have been built from scratch recently with the most modern technology. And they can advance faster, which also means being more efficient and cheaper to maintain.’

‘Large banks, however, are sitting on older systems. We have millions of customers already, lots of branches, huge contact centres: you can’t just move overnight from one technology to another. We must transform without impacting existing customers. Not only are these new entrants doing their jobs really well, they are appealing to customers with their proposition. We need to learn from them and we’ll surely have opportunities to partner with them too. Even if they’re a threat, they’ve created the right incentives for traditional banks to invest in the right things.’

With two types of banks that were so vastly different – incumbents existing mainly via branches and people, and challengers running on apps and mobile interfaces – I wondered whether partnering and learning from them was really all there was to it? Are we overestimating the challengers’ hold on the market? What do the traditional banks have that they don’t?

‘I don’t think it’s that simple,’ replied Felipe. ‘It depends on if we’re talking about current accounts or mortgages or credit cards. There are so many buyers, so many different modalities of those products. As a traditional bank, we have a long history we can learn from and we also have good presence – not only in digital but in branches and contact centres. Customers do still value the possibility of picking up the phone and calling someone, or visiting a branch – especially when things go wrong.’

He paused. ‘What I’m trying to say is that it’s probably a mix of all the ventures that we see on both sides. The new digital banks being agile, investing in the right technology, defining the customer journey and experience, together with the knowledge of the traditional bank. Digital-only banks mainly design optimistically, assuming that things will go well, but there are so many things that can go wrong. That’s why this blend of the two can be really valuable.’

IT’S ABOUT REDEFINING MODELS

“Customer” has become an empty term. Everyone is obsessed by customer journeys and experience to the point that the jargon begins to lose its meaning. I wanted to know how Felipe conceptualised the customer, since his bank needs to retain them as their battle plan for incumbent survival.

‘It’s not so much about trying to predict what customers want,’ he asserted, ‘but more about building a model where you can actually see how they behave and interact with the bank, their expectations, their tastes, as they happen. Then we can draw insight and action it immediately.’

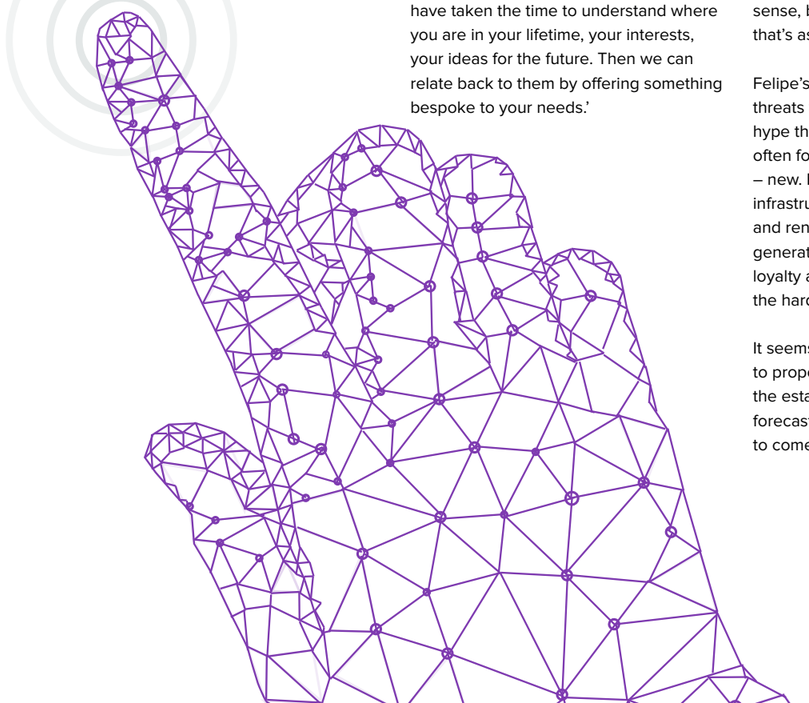
I was pleasantly surprised: Felipe’s attitude to the customer was about logical tech models, backed by data and actionable insights. His conception of the “customer” was a clear and precise photograph, not a smudged charcoal sketch.

‘It’s very important to build the right platforms where we capture all the data,’ he continued. ‘And it’s also important to use the data in a smart way, with the right algorithms to get actions from it. We need to understand when is a better moment to offer certain products, or when we need to implement more infrastructure capacity because of a peak of transactions on any given day.’

How does generation make a difference to understanding customers? What about vulnerable customers?

‘To offer something truly personalised, you do need to understand what moment in their lives they are at.’ He gestured to me as the generic model of a recent graduate. ‘I know you are taking your first graduate role in technology and you want to invest in buying new equipment. And that means you may need a loan but you don’t have property – so I am offering you a secure loan on the basis that you will have a very good salary in a couple of years’ time and you will pay it back.’

He leaned back, finished with his roleplay. ‘That is really proving the point that we have taken the time to understand where you are in your lifetime, your interests, your ideas for the future. Then we can relate back to them by offering something bespoke to your needs.’



> “It’s about how you can leverage the new modern technology to offer more relevant products and services for our customers.

‘It’s the same for customers who are going through financial difficulties. We have a high degree of flexibility to understand their needs. For example, we have invested on very specific solutions for the instance of a bereavement, to make sure that the legal process and everything they have to go through is sorted out for them. It’s about being especially sensitive to that.’

‘We’ve also invested in talking ATMs, where blind people can use the machines seamlessly. It’s part of our commitment to support all our customers to manage their money independently and confidently. We have had very good feedback on that – perhaps it doesn’t make economic sense, but it does make social sense and that’s as important, if not more so.’

Felipe’s calm outlook on challenger threats was reassuringly optimistic. The hype that builds around new entrants often forgets that they are exactly that – new. Newness means up-to-date infrastructure, flashy neon interfaces, and renewed engagement with younger generations. But it also means building loyalty and trust from scratch – perhaps the hardest part of banking.

It seems that the challengers have yet to propose a genuine challenge to the established giants. Although it’s been forecast, the fall of the titans is still to come.

WHERE TO INVEST

Technology is proliferating across business functions; as it does so, it is not surprising that spending on technology increases. More interesting is that parts of the business "stack" are becoming commoditised by technology.

Members responded that they mainly use in-house resources to deliver their digital strategy, but also that they are increasingly likely to buy off-the-shelf solutions than to develop them in-house. Perhaps as technology becomes cheaper, it becomes an invisible layer which supports strategy rather than a feature that drives it.

Who spends what

Spending is accelerating. 70% of respondents expected to see their budget increase this year, up from 67% last year and just 54% the year before. (Fig. 14)

Start-ups and SMEs were more likely than other companies to see their budgets increase for 2019, at 86%. The slowest acceleration from 2018 to 2019 has been among large organisations of 1,001-25,000 employees. (Fig. 14a)

Tools for data analysis dominate the spending landscape. This is true for both disruptors and defenders.

For both self-described disruptors and reactive defenders, machine learning and big data analytics are the key areas of spend. However, the internet of things remains the technology dominated by disruptors. (Fig. 15)

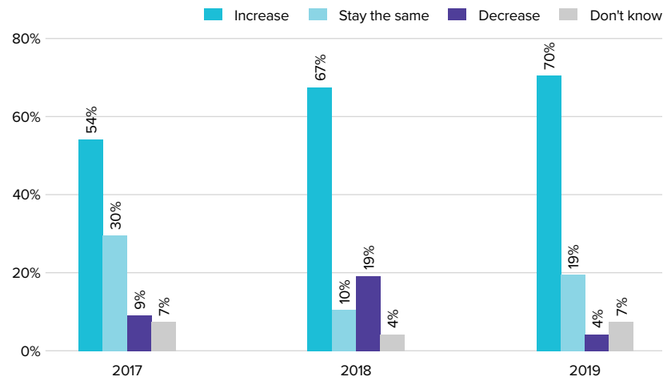


Fig. 14: In 2019, do you expect your spend on technology to...

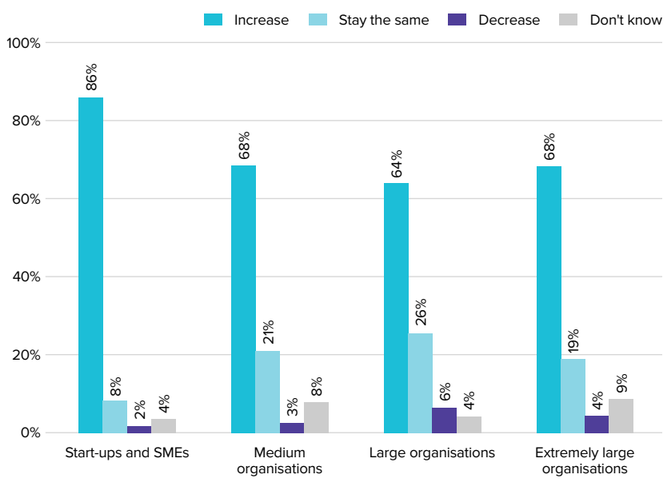


Fig. 14a: In 2019, do you expect your spend on technology to...

Direction of spend

Overall big data analytics remains the top area of spend at 45%. (Fig. 15a) This capability is supplemented by AI, which, defined expansively, has become the area with the second highest technology spend, more than doubling its share of respondents over three years. (Fig. 16)

The nature of the AI described has changed, as AI defined with machine learning or deep learning components has become a bigger proportion of overall spend. (Fig. 16)

In contrast, mobile has continued to decline as a share of spending from 45% in 2017 to just 17% in 2019. (Fig. 16) This is surely not due to the technology's lack of relevance, but could to be due to a shift in costs from respondents setting up mobile interfaces to maintaining and upgrading them. In the section entitled 'Users and Trust', we learn that respondents think mobile will be the most common way for users to access services by 2022.

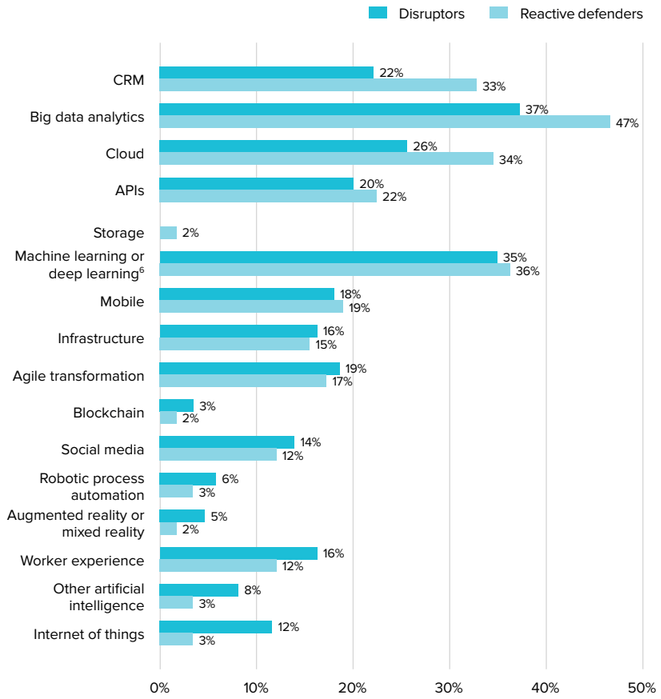


Fig. 15: Where will your digital or technology spend be focused in 2019?

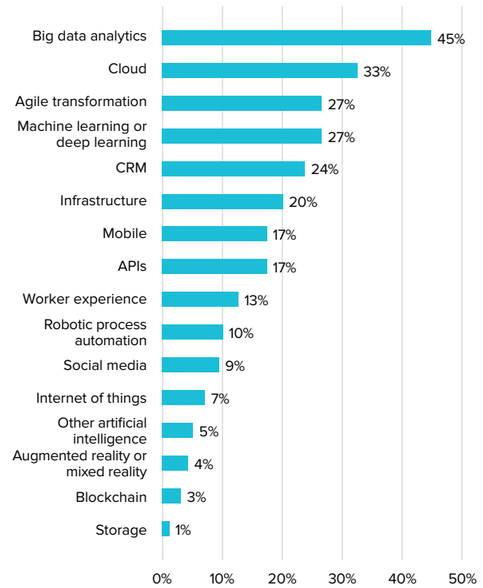


Fig. 15a: Where will your digital or technology spend be focused in 2019?

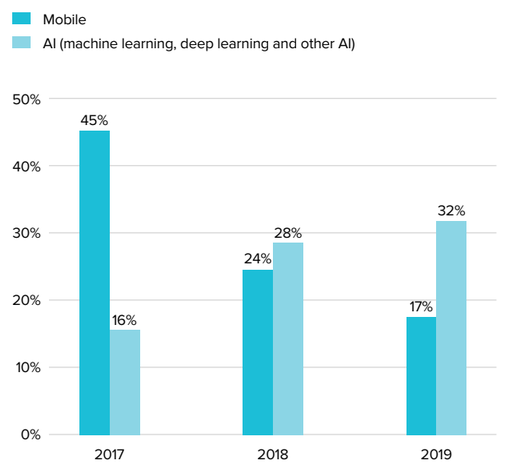


Fig. 16: Where will your digital or technology spend be focused in 2019?

The budget holder has remained relatively consistent with last year's results, with the Chief Information Officer and the Chief Executive Officer as the most important stakeholders in the digital budget. (Fig. 17)

Clients and customers have become the most likely external contributors to digital strategy this year. When asked what most contributes to digital strategy and allowed multiple answers, 74% of respondents chose in-house resources as one of the major contributors. (Fig. 18)

Buying off-the-shelf

Half (48%) of respondents agreed or strongly agreed that we are increasingly likely to buy tech solutions off-the-shelf rather than develop them in-house compared to just 27% of respondents who disagreed. (Fig. 19)

This trend was less pronounced among disruptors (although they were still more likely to agree than disagree) and highly pronounced among the middle bloc, proactive defenders, 57% of whom agreed with the statement. This trend was not strongly affected by variables such as organisation size. (Fig. 19)

Budgets are rising, while technology becomes cheaper. Our research has shown that respondents are investing in more complex technologies over time.

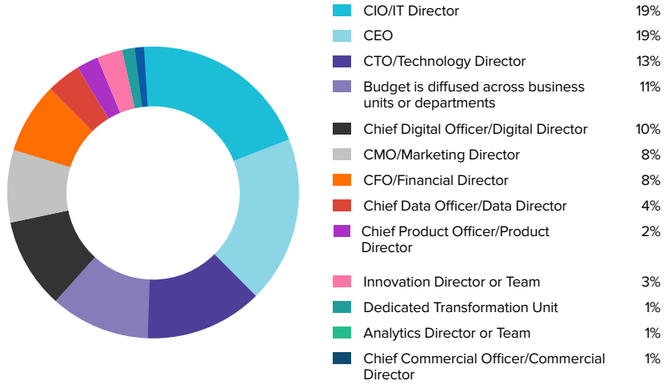


Fig. 17: Who is the main budget holder for your digital strategy?

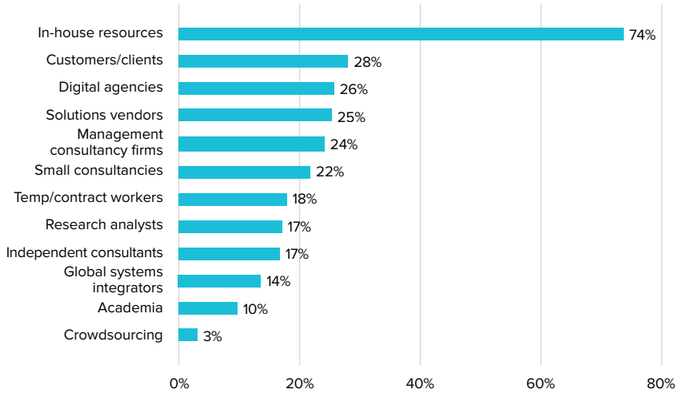


Fig. 18: Who contributes to your digital strategy?

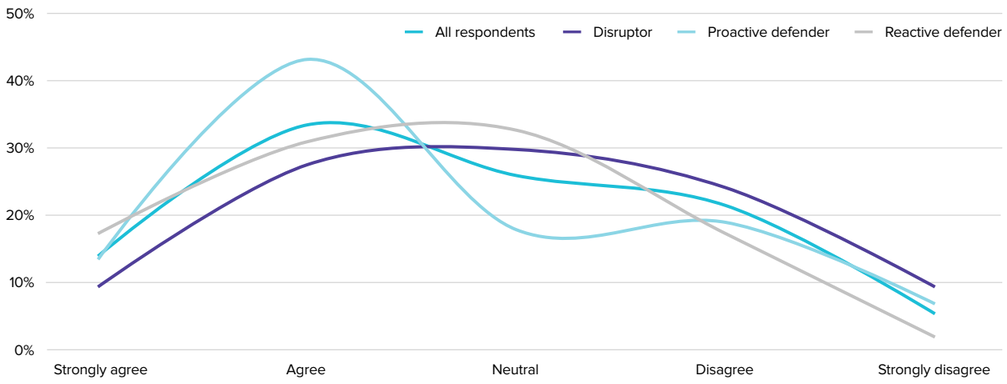
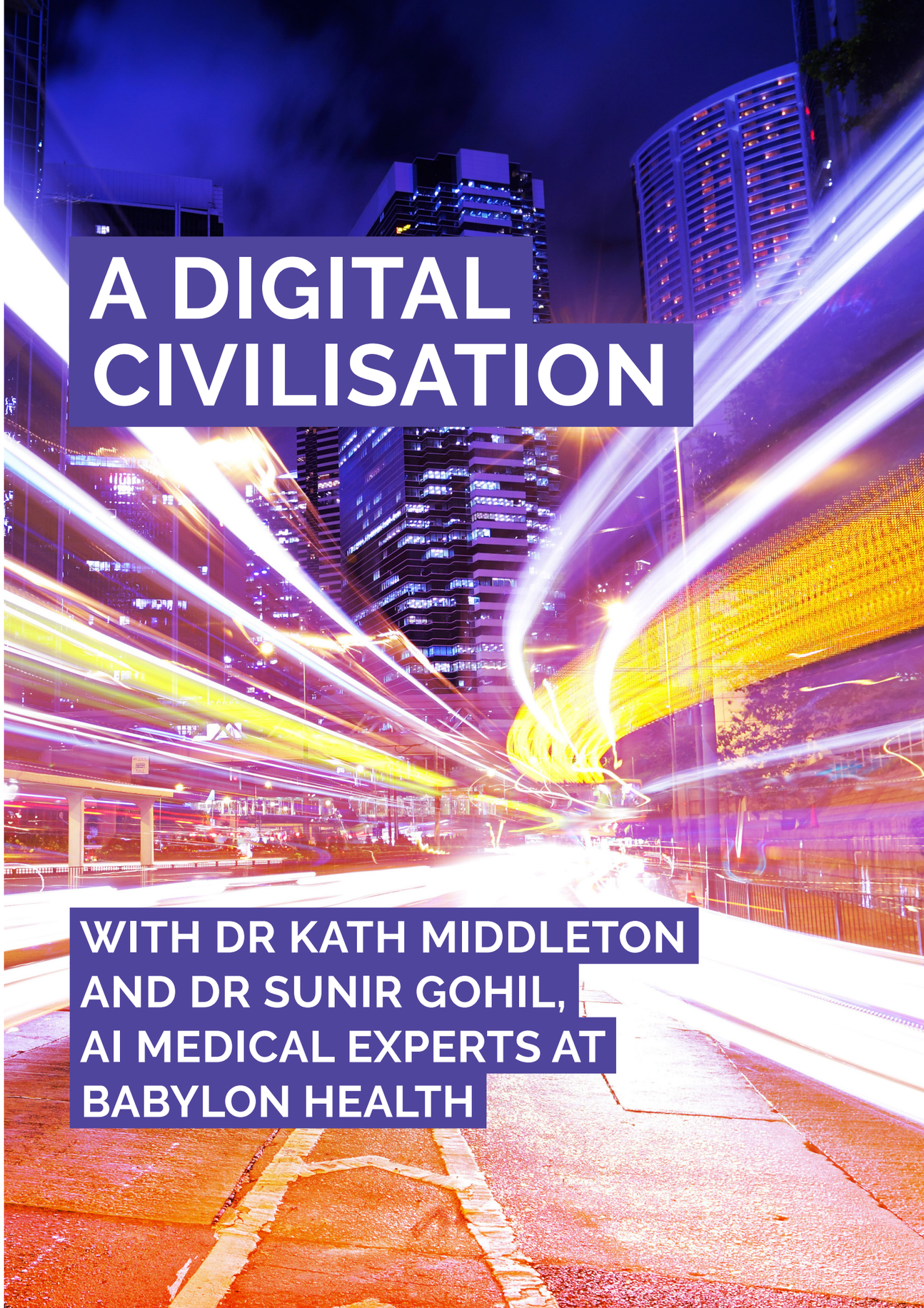


Fig. 19: 'We are increasingly likely to buy tech solutions off-the-shelf rather than develop them in-house'.



WITH THE RISE OF NEW TECHNOLOGIES, BUSINESSES HAVE TO RECONSIDER THEIR STRATEGY AND INVESTMENT AGENDA. IN HEALTHCARE, ADVANCEMENTS IN AI HAVE MEANT A NEW DIRECTION OF SPENDING FOR THE SECTOR. BABYLON HEALTH IS A LEADER IN AI, SO OUR EDITOR SHAMMAH BANERJEE WENT TO FIND OUT ABOUT HOW THEY'RE DRIVING THIS CHANGE.

All over the underground tube at the time of writing, you could see fresh, young faces smiling out from purple posters that tell you that it's possible to 'see a doctor *now*'.[7]

Connecting patients to doctors through a phone app, Babylon has ticked all the boxes for healthcare in the modern world. The urgency and convenience conveys an understanding of the busyness of patients, while their interface claims the digital street cred that comes with having a sleek app.

The whole package is appealing in terms of both aesthetics and speed. In an age where platforms like Instagram and Amazon have conditioned us to value both these things highly, Babylon has seen huge success.

I was curious to find out about the machinations behind this glossy exterior. Since its birth six years ago, Babylon has become one of the largest global networks of clinicians, mathematicians and engineers, and leads AI research and development in the UK. I went to meet two of the AI medical experts, Dr Kath Middleton and Dr Sunir Gohil. While Kath specialises in disease risk, Sunir works on machine learning and natural language processing. Together they explained to me how Babylon is transforming the healthcare sector.

PREVENTION AND CURE

Operating in the digital space of its incumbent counterpart, the NHS, Babylon seems to be the answer to the huge pressure on the nation's healthcare system. The problem with UK healthcare is an infamous lack of funding married with low efficiency: a deadly combination. How did Babylon interact with the NHS? What problems was it addressing?



'Yes, we work with the NHS,' replied Kath. 'We have our separate model that's a stand-alone service but we work together. The NHS is, depending on who you speak to, under-resourced and over-demanded. It's over-worked. The problem with people trying to access healthcare is sometimes physical barriers, like getting to the surgery and A&E, or the notes not being transported between places. And really, you can collect all that information via the phone. That means that virtually anywhere a patient might be, they can immediately speak to a doctor or access their information.'

> "That's about trying to make sure [patients] use the right healthcare resources so they're kept safe, but also the healthcare system as a whole is kept more efficient.

'This involves two strands,' she continued. 'The first is providing clinical service over the phone – video and phone consultation. The second is making AI products that the user can interact with in order to sort a few different functions. One of those is to learn about their health, what they might be at risk of, how to improve their lifestyle and prevent them from getting unwell. Another is AI to help them when they get unwell. That's about trying to make sure they use the right healthcare resources so they're kept safe, but also the healthcare system as a whole is kept more efficient.'

A group of gym-goers walked past us, armed with Lycra and yoga mats. The Babylon office seemed to be the epitome of health and wellbeing; its employees were the picture of the healthcare goal it aimed for. I wondered what drove the business – what's the mission behind the organisation?

'Our long-term goal is to provide affordable, accessible healthcare to everyone on earth,' said Sunir, reciting the motto that hangs over the entrance. 'In the real world, what that means is providing healthcare through a phone. Just as music is something you can get through your phone, banking is done through your phone – Babylon is providing healthcare in the same way.'

A MISSION ON A GLOBAL SCALE

While the idea of getting healthcare "to everyone on earth" is certainly a good goal to have, I wasn't convinced that phones were the way to do it. Of course, almost everyone in the developed world has phones, but they also are the ones who have access to healthcare. I wondered how Babylon tackled accessing the communities that are most in need of healthcare, and also without phones. Was their mission statement too idealistic?

Kath explained. 'With every region we go to, there's lots of things we have to think about and how we have to change the product. That might be language, it might be the diseases we cover – tropical diseases for tropical regions – it might be the infrastructure of the healthcare systems [already in place]. And yes, one of the things you have to think about is penetration: how many people have smartphones, how many have no phones, is there WiFi connectivity – that sort of thing.'

> "With every region we go to, there's lots of things we have to think about and how we have to change the product.

'In Rwanda, we already have the clinical service [video consultations] and we are also implementing AI there,' she explained. 'We know that the healthcare system is arranged by village. So often you'll have one healthcare worker that sort of oversees everyone, and they might have a device but other people don't. So we have to fit our services around that, and just adapt it to the country's needs.'



> "Any interaction with a healthcare professional or the healthcare system can populate the user graph. It's a very detailed version of their medical history.

REASONABLE AI

I'd heard about the knowledge base that Babylon had set up, essentially a pooling of all medical knowledge. Everything in it was connected: an intelligent representation of knowledge. Even the individual user has their own digital representation, called a "user graph". Where did all the data come from? How did AI come into this?

While Kath had keenly answered my questions, Sunir had been a little quieter. With the discussion now focused on his speciality, he brightened. 'The user graph takes information from other places as well as patient's data,' he explained. 'Any interaction with a healthcare professional or the healthcare system can populate the user graph. It's a very detailed version of their medical history.'

Taking information from all areas possible is necessary to create the most accurate and encyclopedic knowledge base. But what about the sensitivity of patient data? And how can they avoid biased algorithms?

'So the models we use are fully interpretable,' replied Sunir. 'By law, they use machine-only methods which take the data and only interpret from the data. We use information from doctors as opposed to just [patient] data. The data helps to inform the decision but does not dictate the decision. We can see how our AI has come to that reasoning, and that reasoning is based on expert opinion and doctors giving information rather than patient data.'

With AI helping on the knowledge side of things, how was it shaping interaction with patients?

'We have a team of people,' said Sunir, 'made up of doctors and natural language processing scientists, research engineers, and experts in this field. There are two sides to this. The first is that we want the AI to understand better what the patients are saying.'

'Someone saying "my back is killing me" is very different to "my wife is killing me". Or "left hand side" versus "left side of my hand". We understand that instantly but we need the machine to understand that. The second part is how do we convey back to the patient what the computer means? We have to deal with both sides.'

In constructing a platform that matches doctors to patients, and augmenting its capabilities with AI, Babylon has innovated where there was great need. The careful design of natural language showed an understanding of the human element, while the knowledge base is an idea that could not only revolutionise healthcare, but also education.

It was clear that the company is proud of its namesake. The pillars in the office were adorned with plastic foliage and potted trees waved in the air-con breeze – an indoor recreation of the Hanging Gardens of Babylon. It seemed that they were bringing their ancestors forward – into digital and healthcare democracy.

After this interview took place, Forbes released an article raising concerns around the accuracy of Babylon's chatbot diagnoses.

Babylon refutes the claims made in Forbes' article, which they claim dismisses evidence from multiple government regulators and implies that Babylon's NHS doctors leave their ethics at the door.

SKILLS AND WORKERS

Younger technologies are improving rapidly and prove fertile ground for innovation. Recent improvements in AI, such as facial recognition and voice assistance, are beginning to enter the market as commercial products.

But they face barriers to doing so: new technologies must be programmed by workers, implemented by workers and, in some cases, will replace workers.

Skills and workers therefore remain vital areas of focus in 2019.

Attracting and maintaining the right skill set

63% of respondents or strongly agreed that their organisations were struggling to attract staff with the right digital skills, a rise from 41% in 2018. (Fig. 20)

Self-described disruptors faced less of a challenge in attracting the right skill set than proactive and reactive defenders. This could indicate that an interesting project is just as important to digitally-skilled staff as remuneration. (Fig. 20a)

Despite the difficulty of attracting the necessary skills, staff training and development is ranked the lowest in priorities for organisations. (Fig. 21)

Only 20% of respondents selected staff training as a very high priority, despite lack of skills being the most cited challenge for implementing AI in 2019. (Fig. 22)

This challenge could be due to the rise of machine learning, for which data literacy is vital as biased data sets and flawed collection methods impact accuracy. This was consistent across organisation size.

Self-described defenders rank staff training and development lower than disruptors, which may influence the degree to which they attract digital skills. (Fig. 23)

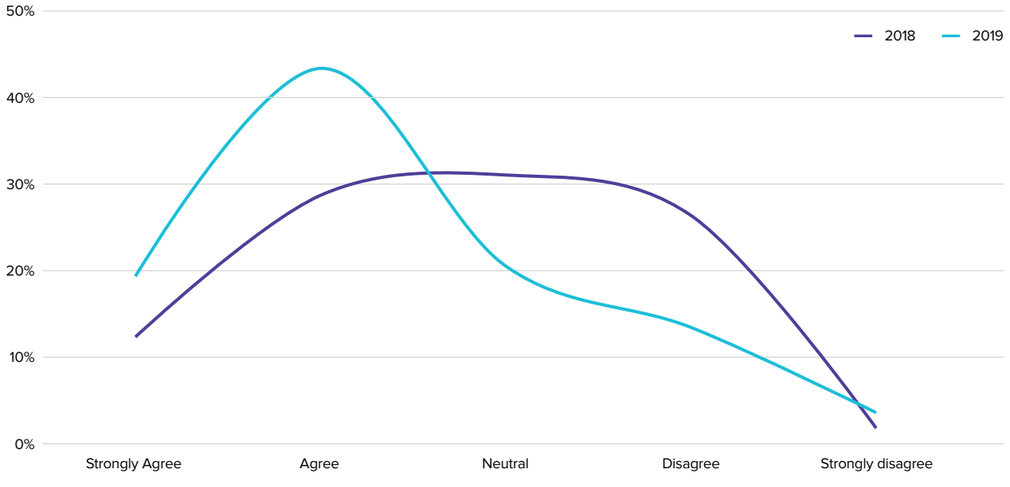


Fig. 20: 'We struggle to attract the right digital skills.'

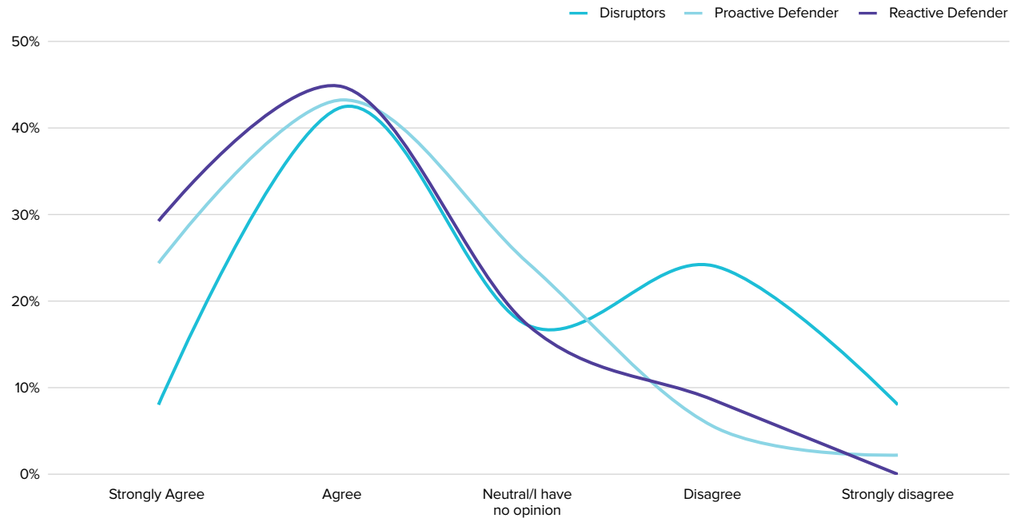


Fig. 20a: 'We struggle to attract the right digital skills.'

When asked what their biggest challenges were for the coming year, respondents did not generally perceive internal staff training and development as their biggest challenge. Concerns around using insight from data effectively and deploying new technology efficiently instead ranked highly at 45% and 33% respectively. This suggests that a lack of skills, while a hindrance to the technological strength of organisations, gives way to more urgent challenges. (Fig. 24)

However, data culture is a critical internal issue: 55% of respondents agreed that human error was a bigger risk to organisational data than intentional external threats. (Fig. 25) This is significant as the majority of respondents viewed efficiently utilising data as critical to retaining customer loyalty.

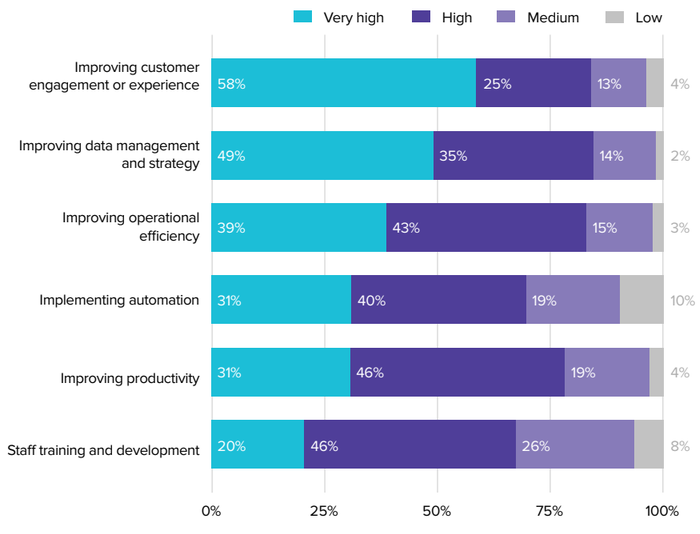


Fig. 21: Please rank these digital initiatives according to priority.

The low prioritising of staff training married with a lack of digital skills suggests that organisations across industries would benefit from addressing the skills gap.

Skills from outside

One way to mitigate weak internal security is to outsource key processes, such as payment gateways or data storage, to technology companies which take on this risk. As we have seen half (48%) of respondents agreed or strongly agreed that we are increasingly likely to buy tech solutions off-the-shelf rather than develop them in-house. (Fig. 19)

When it comes to digital strategy and planning, however, respondents were less likely to consult external vendors. 74% of all respondents said they mostly use in-house resources for their digital strategy. Reactive defenders were more likely to outsource than disruptors or proactive defenders. (Fig. 26)

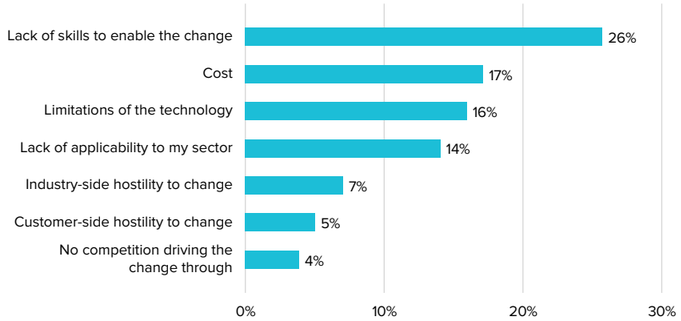


Fig. 22: What limits the effective deployment of AI within your industry?

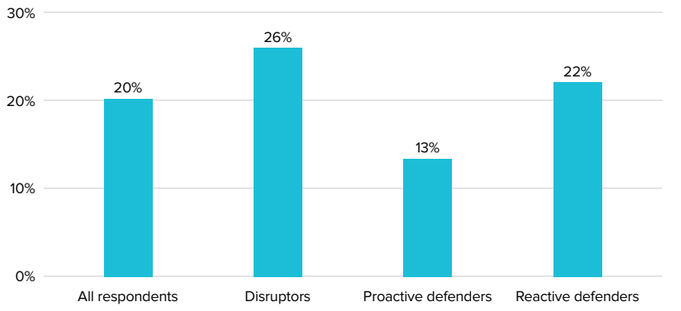


Fig. 23: Staff training and development ranked as 'very high'

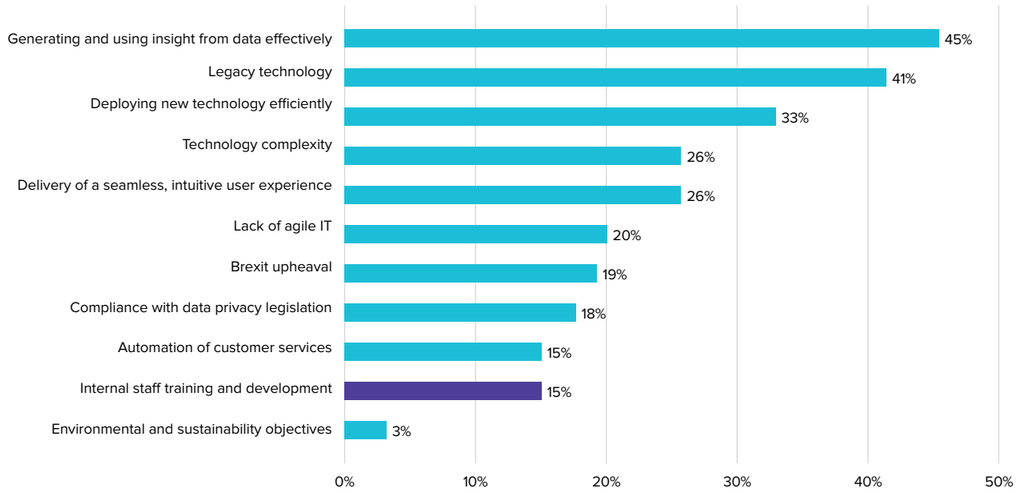


Fig. 24: What will be the biggest challenge facing your organisation as a whole in 2019?

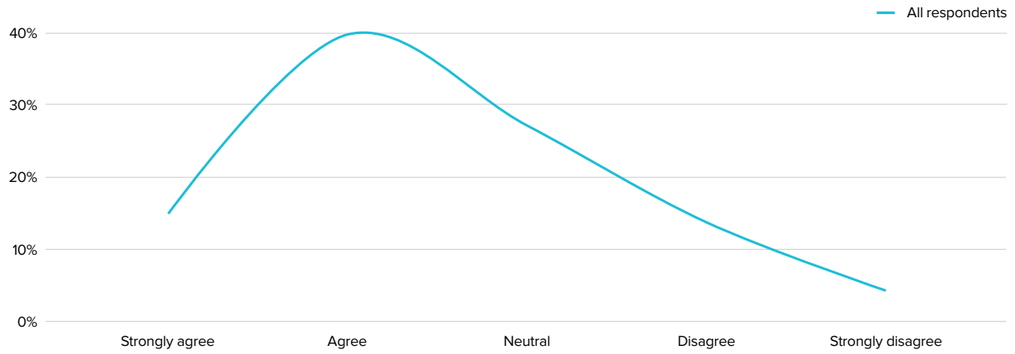


Fig. 25: 'Human error is a bigger risk to our data than intentional external threats.'

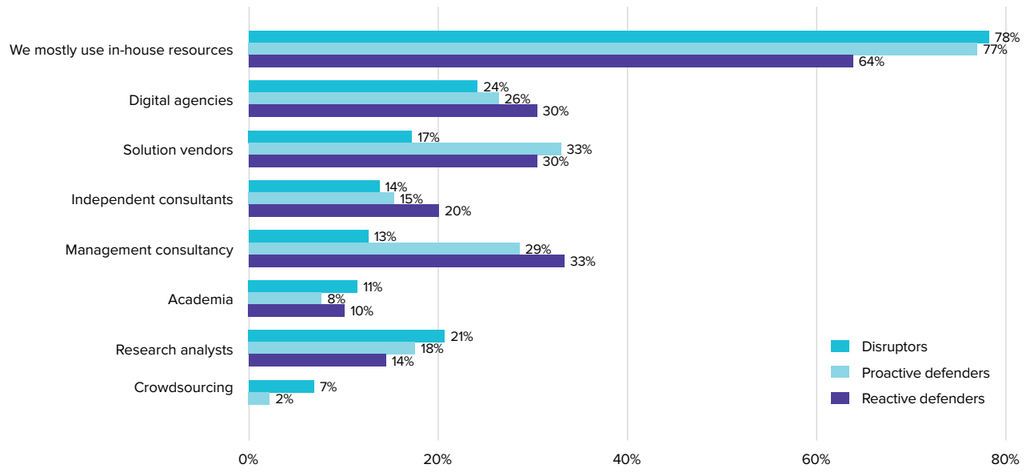


Fig. 26: Who contributes to your digital strategy?

Automation in focus

The focus on automation has grown year on year. This year, 71% of respondents have cited it as a high or very high priority, up from 57% last year and 39% the year before. (Fig. 27)

The increasing urgency to implement automation is likely to be due to software advancements over the last year. It was much more likely to be perceived as a disruptive technology this year (32%) than last year (13%). (Fig. 5)

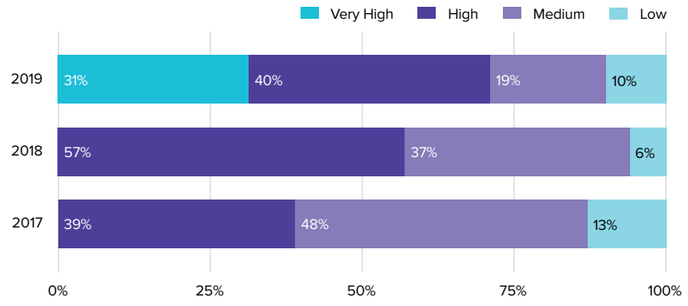


Fig. 27: 'Rank this initiative according to its priority... implementing automation'

EMPLOYERS AND EMPLOYEES

WITH CHRISTINE NG, TALENT ACQUISITION PARTNER AT THE FINANCIAL TIMES

SKILL SET DEMANDS ARE EVOLVING IN CORRELATION WITH THE RISE OF AUTOMATION. FOR CHRISTINE NG, THIS IMPACTS WHAT SHE LOOKS FOR WHEN HIRING. SHE TALKS AUTOMATION AND CREATIVITY WITH OUR EDITOR, SHAMMAH BANERJEE.

If you type “will robots…” into Google, the drop-down list suggests “take my job”, “take over the world”, and “replace humans”. Notions of AI have spiralled into a dystopian nightmare; its vast potential has cultivated an underlying fear of redundancy alongside the excitement.

Christine Ng, Talent Acquisition Partner at the Financial Times, interacts with AI in a way that is far removed from dystopian scaremongering. For her, automation is a means towards productivity and with that, a greater chance for creativity. I went to meet her at the FT offices in Southwark, London, to learn more about the skill demands for a workforce existing amid the automation revolution.

ARE WE RELEVANT?

I asked Christine what skills she looks for in talent acquisition. Are they evolving with the emergence of automation?

'Within the technology part of the FT, we're seeing a rise in more data-focused skill sets,' she explained. 'Data science and data analytics. Recently JavaScript has really taken its foothold in the market, and Python's always a good skill set to have in that area. We're also seeing Python skills outside of data so cybersecurity is also looking for Python skills.'

> "We're actually seeing a trend of non-tech people trying to learn tech skills anyway.

In technology, fluency in programming languages – such as Python and JavaScript – is always a plus. But with automation on the rise, will it still be relevant?

'Yes, I hope so,' Christine said. 'We're actually seeing a trend of non-tech people trying to learn tech skills anyway. Take our advertising team: some members of that team are actually actively interested in learning how to code. With jobs being automated, we're actually finding that we have to hire specialists to manage the automating tool. For example, we use Workday as our HR system. Historically, our teams have had to manually input salaries and of course that's automated now. But we've still had to find specialist Workday developers to develop specialist features specifically for us.'

'We have an HR bot that lives on Slack, that automatically answers questions – but even with the bot, people still want to speak to an actual person anyway. And with complex questions, we still need the technology person to incorporate the new questions into the bot. We need a conversation designer to design the flows and user journeys.'

CREATING CREATIVES

I hadn't thought of the fact that automating software still needs a human to supervise. I wondered if Christine thought that employers value creative skills over technical? Or was this just my wishful thinking as an English Literature graduate?

> "Everything seems like it can be automated but actually it turns out that some things can't.

She laughed. 'I would say, yes and no,' she diplomatised. 'I think you need creativity in order to find an opportunity as to what you can and can't automate. I think the real challenge is not automating the wrong things. Everything seems like it can be automated but actually it turns out that some things can't. Finding the right problems is genuinely costing the business a lot of time – as a large business, you may be tempted to try to find the wrong problems to solve. It certainly requires creativity.'

The technology sector is growing rapidly: the last year has seen a 60% increase in tech start-ups from the previous year.[8] Schools are implementing STEM programmes with the hope that a better grounding in science and technology will place their students in better stead for finding jobs in the tech world. But with the parallel need for creatives to design the interface between technology and humans, are we overdoing the focus on STEM?

'No, I think it's great. I think everyone nowadays should be equipped, at least, with basic HTML skills to build a website. It's funny because I still see CVs that say, "proficient in Microsoft Word" – everyone is! But on the other hand, coming into a job and being able to tinker with really cool formulas is great, but what's the point if you can't actually derive insight from them? With the key skills coming out of schools, what you have to learn at uni is, "what do I do with these hard skills? How will I make this data visually appealing to our investors?" You need to tell the story and that's really important.'

'However, you can't learn creativity. You can't teach it either. It's hard but if you create the right environment for people to all interact and collaborate with each other, whether it would be a school environment, or a work environment, I think that's where creativity will come out.'

> “We’ve got to think about these cycles, where employing for diversity comes in, and how that then affects diversity of thought.

THOUGHT POLITICS

The FT can appear alienating to anyone who isn’t a CEO, a business person or a banker in their 40s. Christine informed me that, according to their analytics team, this is actually a true representation of their readership. And it’s not just about readership – this brands the FT as an employer of the privileged, white middle class. Christine smiled wryly as I asked how the FT attempts to establish diversity of thought. We were both aware that a conversation about diversity was happening between two women of Chinese and Indian descent – our conversation was the very product of the ideas we were discussing. Does employing diverse groups of people encourage diversity of thought? Or is that too simplistic?

‘Diversity of thought does come from having more diverse groups. Historically, we used to just hire people from the top universities, like Oxford and Cambridge, and they’re likely to just have that one school of thought. Recently we’ve taken a more active approach – running more inclusive job descriptions and taking out things like “you must have a computer science degree”.’

‘We’re doing something new called “The Apprenticeship Scheme”, which is leveraging the apprenticeship levy to hire people who may not necessarily have the ability to go to university. I think this helps us to bring people in who might not necessarily be our target demographic but they will bring a different mindset as to how we can be a better business overall.’

‘We also have a really great initiative called “The Talent Challenge”, where we welcome graduates for two days on-site and they solve real-life business challenges for us. This year, they were looking at questions like “how do you appeal to millennials?” “How can the FT be a platform for learning?” “How can the FT leverage new technologies like blockchain and machine learning?” We got to see different ways of thinking: their ideas were so fresh and so imaginative.’

> “...if it wasn’t for hiring someone who was able to think differently, that would not have been on our agenda.

‘Appealing to millennials is important: they’re our new readership. We had a 19-year-old intern who was like “why is the FT not available in schools?” He went knocking on all our board members’ doors, pitched it to them and now the FT is available to 3,000 schools globally for free. That was his initiative; if it wasn’t for hiring someone who was able to think differently, that would not have been on our agenda. We’ve got to think about these cycles, where employing for diversity comes in, and how that then affects diversity of thought.’

‘FT content speaks for itself, but if people look at the FT, what do they see? What does working at the FT look like? That’s something we’re actively working on ourselves. We also want to see ourselves as competitive with the Googles and Facebooks of the world. I think we just need to be more vocal about our people – that’s what we’re working on.’

The employer standpoint hinges on a whole array of questions around education, skill set, trajectories of automation – and all of these are up in the air. The entrance of Generation Z to the workforce is redefining how employers brand themselves, in a bid to attract the best talent and a wide variety of talent. The desire to attract both the creative and the technical gives Christine, and employers like her, a big challenge.

Technology like automation doesn’t alleviate the need for people who understand data – it simply adds creativity to their skill set. The modern workforce has to balance the two disciplines. Employer and employee alike must adjust.

USERS AND TRUST

The internet empowers users. Customers can find information about the service they're considering, navigate to a competitor with minimal friction, and if they're unhappy, they can shout about it from the rooftops.

On the other hand, data empowers vendors and service providers. It enables them to build a detailed picture of their users, to better anticipate how they might behave and to understand their own offering.

Knowing your customer

Consistent with the 2018 Digital Trends Report, intuitive user experience and highly personalised products were ranked most important for customers overall. (Fig. 28)

Disruptors versus proactive and reactive defenders viewed these variables differently. Self-described disruptors viewed highly personalised products as most important to customers. Intuitive user experience, however, was ranked as more important by proactive and reactive defenders at 30% and 41% respectively. Only 17% of disruptors agreed that this was most important. (Fig. 28a)

It may be that reactive defenders are more likely to experience customer frustration around non-intuitive user experiences. Having largely mastered this, disruptors are concentrating on getting personalisation right, creating excellent experiences and raising the bar in the process.

Seamless multi-channel communication and product innovation were viewed as more important by disruptors than defenders, with only 1% of proactive defenders choosing regular and rapid product innovation as most important to customers.

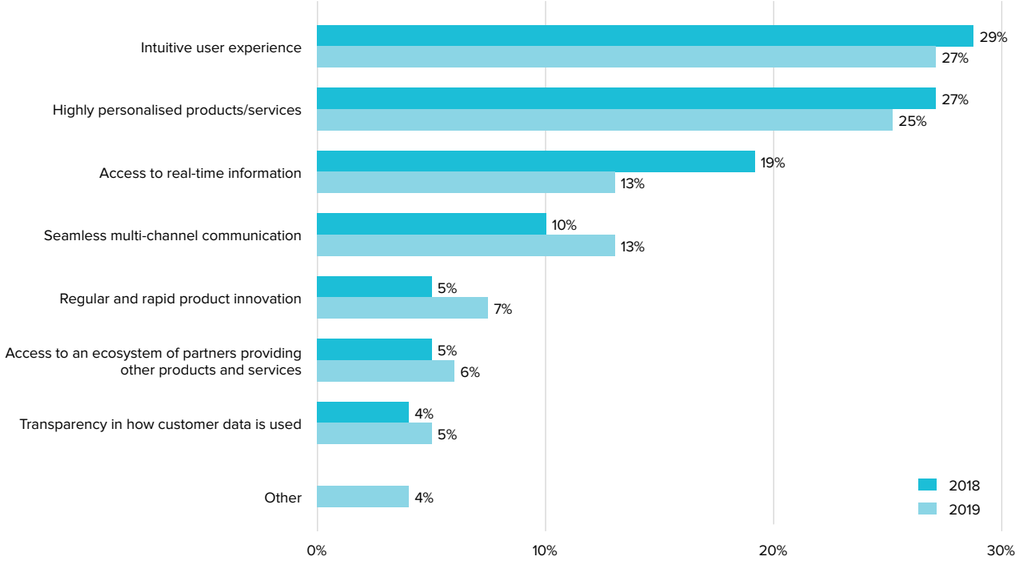


Fig. 28: Which of the following do you think is most important for your customers?

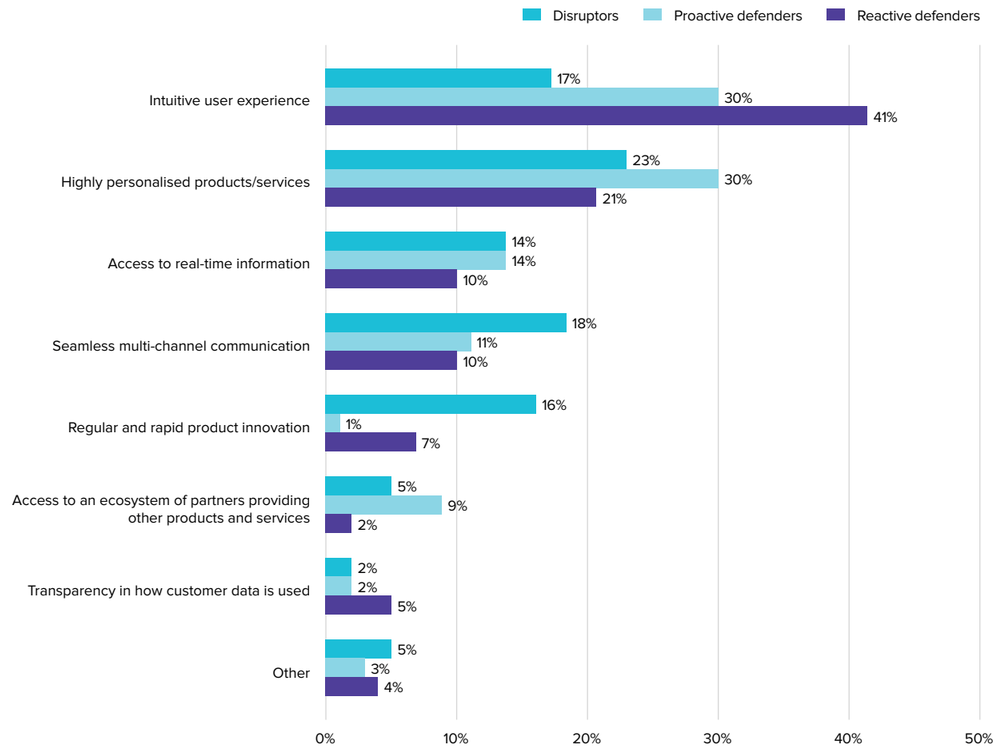


Fig. 28a: Which of the following do you think is most important for your customers?

User access in 2022

Respondents were asked how users would be able to access their products or services in 2022. Mobile, applications and websites proved the most common.

At 51%, a chatbot was seen as a more likely advisor than a human on the end of a customer service line (selected by 44% of respondents). A physical place where the user can access the service was less common still, at 33%. (Fig. 29)

Probably due to current high street battles, only 50% leisure and retail respondents placed faith in physical places being available in 2022. They were also more likely to rank augmented and mixed reality higher, with 56% choosing it as a method of customer access: an impressive forecast for AR in product discovery.

30% of financial services respondents believed that they would still have physical stores for customers by 2022; rather, mobile, cited by 80% of financial service, is predicted to become the dominant way in which financial services providers interact with their users. (Fig. 29)

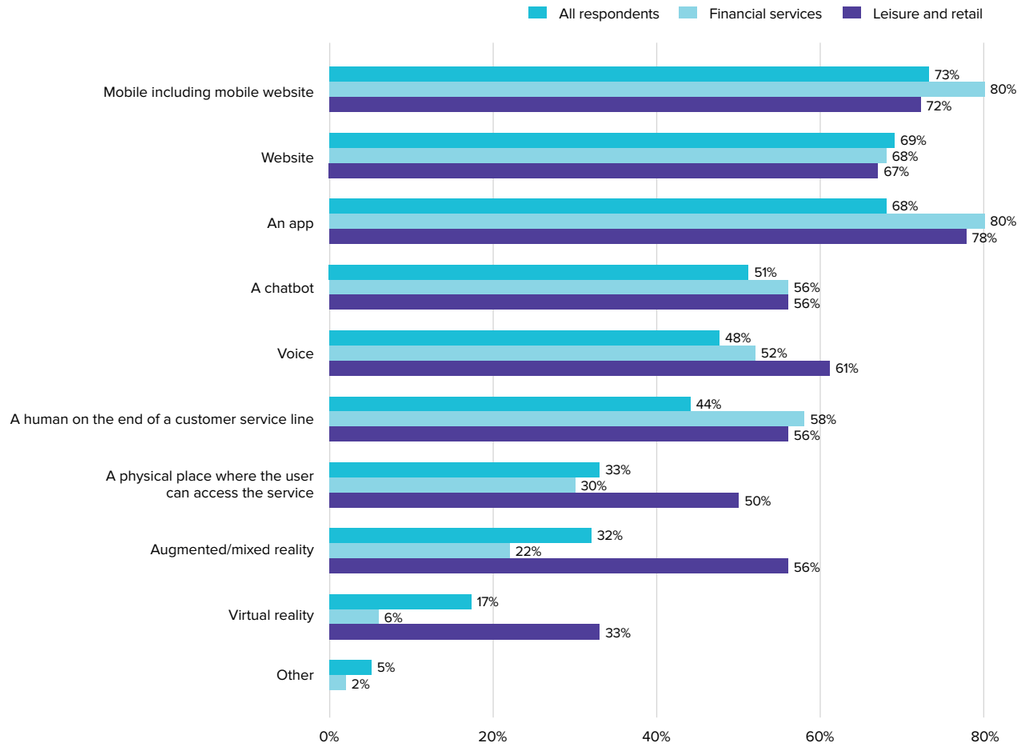


Fig. 29: How do you think your customers will be able to access your services in 2022?

Data and customers

Failure to sufficiently utilise data was ranked as the biggest internal challenge in retaining customer loyalty, at 35%. This ranked higher than inadequate trust around data and collecting data from customers combined (23%), suggesting that to achieve customer loyalty, an expansive data collection policy is still preferred. (Fig. 30)

Asked about their biggest worry regarding data, 33% of overall respondents cited a data breach. (Fig. 31)

For disruptors, only 22% agreed, whereas 31% considered the potential of perceived misuse of data undermining customer relationships as a bigger concern. (Fig. 31a) This indicates more secure, but more invasive, data strategy from organisations in years to come.

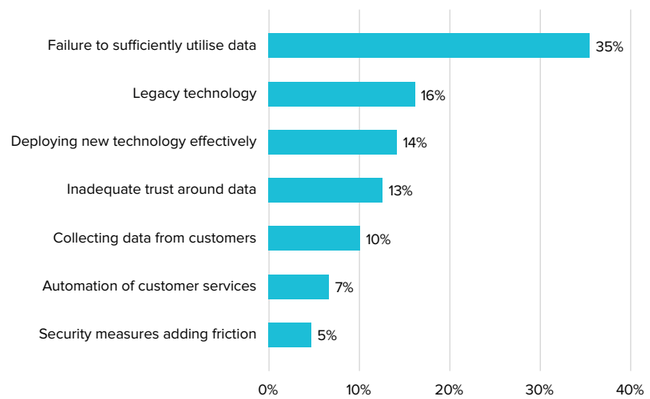


Fig. 30: What poses the biggest internal challenge to customer loyalty?

Overall, organisations did not seem to be concerned about adequately harvesting data from customers, with only 5% citing that as their primary worry. This reflects that customers are still giving data willingly, although there is uncertainty around whether this trend will continue. Just 4% said they don't worry about customer data. (Fig. 31)

All of this reinforces the vast importance of data as an organisational asset. As we have seen throughout this year's report, generating and using insight from data effectively was ranked as the biggest challenge for organisations, selected by almost half (45%) (Fig. 7); and improving data management and strategy was the second highest priority for respondents, was cited as high or very high priority by 84% of respondents. (Fig. 8)

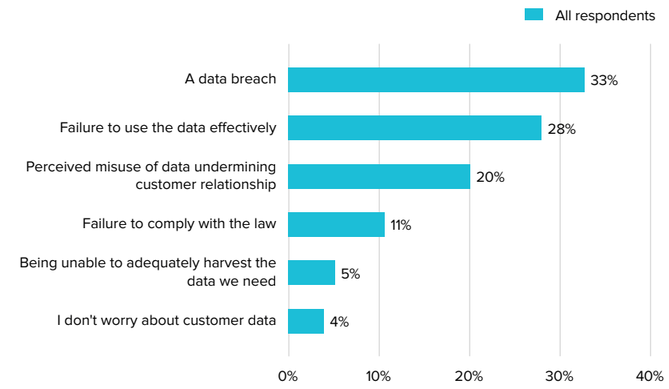


Fig. 31: What is your biggest worry about customer data?

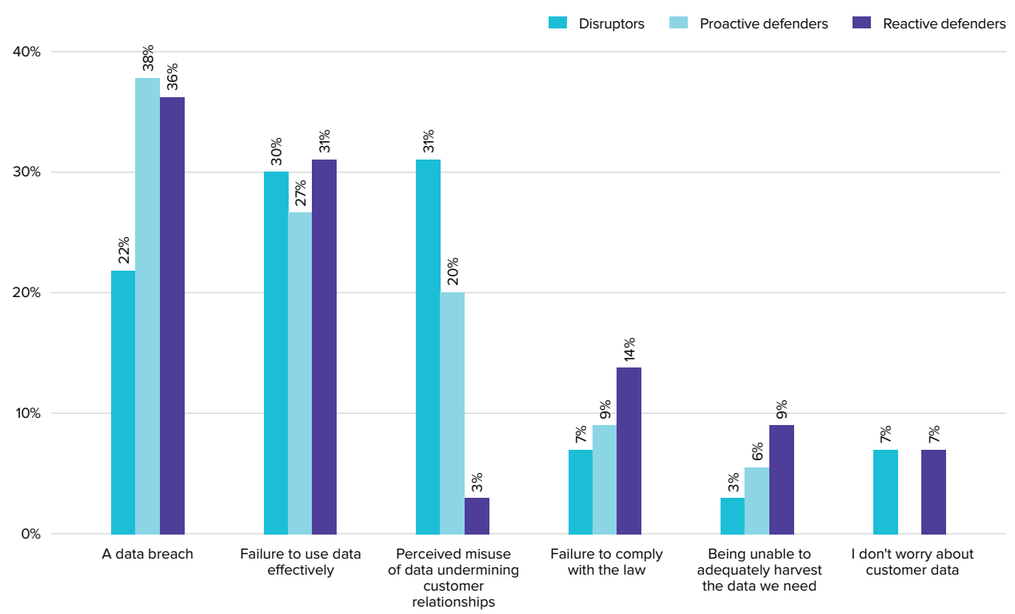


Fig. 31a: What is your biggest worry about customer data?

COMMUNICATING IN DIGITAL NEWS

WITH RYAN DAVIES, FORMER GLOBAL HEAD OF CUSTOMER LOYALTY AT NEW LOOK

CUSTOMERS HAVE INCREASINGLY MORE AUTONOMY ON WHAT THEY SPEND THEIR MONEY ON AND WHERE THEY PUT THEIR ATTENTION. IN A CROWDED MARKETPLACE, BRANDS NEED GREATER PERSONALISATION TO GRAB ATTENTION. OUR EDITOR SHAMMAH BANERJEE WENT TO MEET RYAN DAVIES TO FIND OUT HOW HE MAINTAINS CUSTOMER LOYALTY IN TIMES OF CHANGE.

The goldfish has a notoriously short attention span – it cannot hold concentration for more than nine seconds. In 2015, research into attention spans by Microsoft suggested that this was perhaps unfair on the goldfish. The human attention span had been measured at eight seconds; it had dropped from a 12-second span in 2000.[9] Human attention is fast becoming a scarce commodity.

In our digital world, communication must fit into 280 characters and no one bothers articulating how they feel when an emoji will do. Screens are colourful and attention-grabbing, and scrolling Instagram satisfies more instantly than reading a book. Digital has evolved our minds – and not necessarily in a good way.



The result: brands, organisations and governments have to adapt how they communicate with the public if they want to be given even a second of human attention. Microsoft's advice to marketers in the report was to 'be clear, personal, relevant and (quickly) get to the point'.[10]

When this communication exists on so many different platforms, creating a coherent and convenient experience for customers is a challenge. I caught up with Ryan Davies, former Global Head of Customer Loyalty at New Look and at the time of interview Loyalty Lead at Argos, to find out how he battles waning attention spans and engages customers.

ATTENTION POVERTY

The 1978 Nobel prize winner for Economics, Herbert Simon, commented that 'a wealth of information creates a poverty of attention'.[11] His theory of cognitive limits argues that humans do not seek to maximise their benefit from a particular course of action, but simply to achieve a result that is "good enough". In order to deal with information streaming in from all directions, the human mind limits itself and simply demands a fast, efficient line of progress.

I asked Ryan about how this all impacts his strategy when approaching consumers. How did digital transform retail?

'Convenience is a massive part of the customer experience,' he replied, 'as well as what drives loyalty. Recently I read a really interesting piece of research on cognitive load: customers, for the most part, don't want to think. They actually just want something that they trust and is an easy decision because they're all busy; the less they have to think about something and be confident in buying it, the more likely they are to shop with you.'

Ryan's understanding of customer needs seemed to align with Simon's theory of cognitive limits. He went on to consider interaction with the customer in terms of value – an insightful marriage of economics and psychology.

'The value exchange is then that we make this service more relevant – it's as much about what you don't show your customers as what you do. If you can work out how to offer a personalised service that fits within your brand's purpose, you're more likely to get the customer engaging with you.'

'Part of that is asking them what they're interested in – filling out what they like or dislike. If you end up just emailing them about all the things your business sells, you're actually making it harder for them to shop with you because there's too much choice. There's too much cognitive load.'

> "...customers, for the most part, don't want to think.

I wondered how these well-meaning intentions had been impacted by GDPR – there to regulate data misuse, it also gives rise to scepticism of brands collecting customer data for their customers' benefit. Had this been a problem in the mission to understand the customer?

'You have to make it clear that what you're doing is for their benefit as well,' Ryan said. 'Trust drives loyalty: I trust that when I give you information, I'll get a better experience; when I order, it'll be delivered on time; if I have any problems, you'll sort it. Trust is the shortcut that actually makes me choose you over your competitors – I trust that the quality is better, or I know you and I don't know the other one.'

A DIGITAL WONDER-LAND

One of the big struggles of tracking customers across the business is the vastness of business itself, and merging the offline and online coherently. I wondered if Ryan had seen the solutions for this?

He laughed. 'Working in big matrix retailers, the challenge is how do you get everyone aligned on the same strategy. Fragmentation can be an issue. What the individual departments don't see is the overall customer experience. There's a real opportunity there to get everyone aligned around what the customer goals are, and then getting the different departments to deliver against that strategy.'

Physical stores are increasingly supplemented by digital. Initiatives like digital receipts are both convenient for the shopper (all receipts in one place) and help supply the brand with customer data. But was digital invading the offline experience?

'A shopping experience is very tactile and emotional; you don't want digital to get in the way of that too much. But it's great for things like wishlists: barcode scanners now bring up reviews and if you want to save it for later, then it can go on your wishlist. You can actually add it to your customer profile. We need to try and use digital to enhance the channel experience rather than getting in the way of it.'

> "We need to try and use digital to enhance the channel experience rather than getting in the way of it.

AUGMENTING EXPERIENCE

Coming back to trust,' said Ryan, 'you can buy things online that are generally low-anxiety, low-tactile products. Clothes or toys are fine but with something like a sofa, customers naturally want to go and sit on them. If you are buying a telly, you want to be sure that it's going to fit in your room.'

Ryan pulled out his phone and held it up against the wall of the room. After clicking through the Argos app, an image of a TV appeared on the screen, hovering against the wall. 'See, it shows you an augmented reality picture of how that particular TV looks in your living room,' he explained. 'We're starting to do that with some sofas and things as well. So that's taking away some of those hesitations buying something you haven't seen in real life.'

I was impressed: the app bridged the gap between online and offline in such a creative way. I wondered if the potential of this was a threat to the brick-and-mortar store? Could augmented reality be the future of the high street?

'Everyone's saying the high street's dead, and it's not,' said Ryan. 'It just needs reinventing and we're starting to see that. Big flagship stores or really convenient fast-delivery pick-up type stores are such good models. I think things like interactive mirrors are really interesting, but I'm just not sure if they would scale. It's quite a lot of money for something that might get old quite quickly. I'm not sure that it would have the scale or even the real customer benefit that just having good service in the store would do in the first place.'

In a fast-paced world, it seems digital is actually necessary to seek out the scarce commodity of attention. Interacting with great volumes of fragmented information leaves the consumer weary of mass marketing emails: it seems that only brands that enact Microsoft's advice of "clear, personal, relevant" will be heard.

EXPERIMENTATION: WHAT MAKES THINGS SUCCEED?

The "Why Projects Fail" section was the most popular section of last year's Digital Trends Report. So, this year we wanted to dig deeper into the differences between respondents who felt they had been successful and those who felt they had failed.

The percentage of respondents who had experienced digital project failure this year was 42% (consistent with last year's 42%). Start-ups and SMEs were markedly less likely to have experienced failure than larger organisations, with only 25% experiencing failure in their digital projects. (Fig. 32)

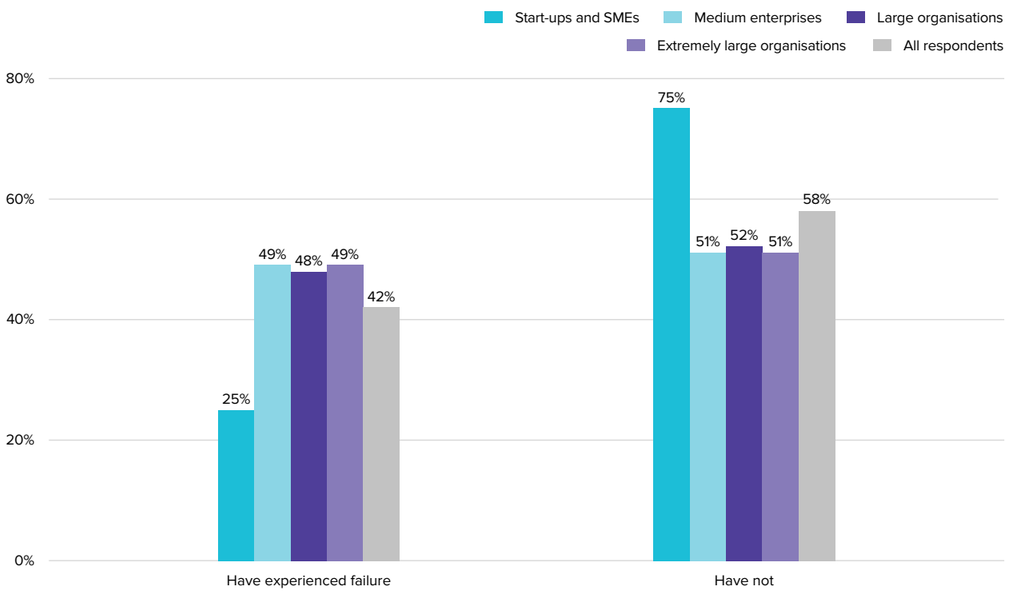


Fig. 32: Have you had a digital project fail to meet its strategic objectives?

Why did your project fail?

The most common reason that respondents cited for digital project failure is that the project did not meet customer/stakeholder needs (19%). Culture (15%), unrealistic expectations (13%) and internal bureaucracy (11%) were all rated significant reasons for failure.

In contrast to 2018, not one single respondent cited inadequate testing as a reason for failure. (Fig. 33)

When asked about the main cultural barrier to success, a focus on short-term objectives or incentives remained the most frequent answer at 33%. A lack of technical expertise had dropped off significantly as a cultural reason for failed projects, at just 5%. (Fig. 34)

What would you have done differently?

When we asked respondents to say what they might have done differently in their own words, a few key themes emerged.

The first concerns planning. One respondent wished they had 'planned better', another wanted a 'clear, realistic strategy'.

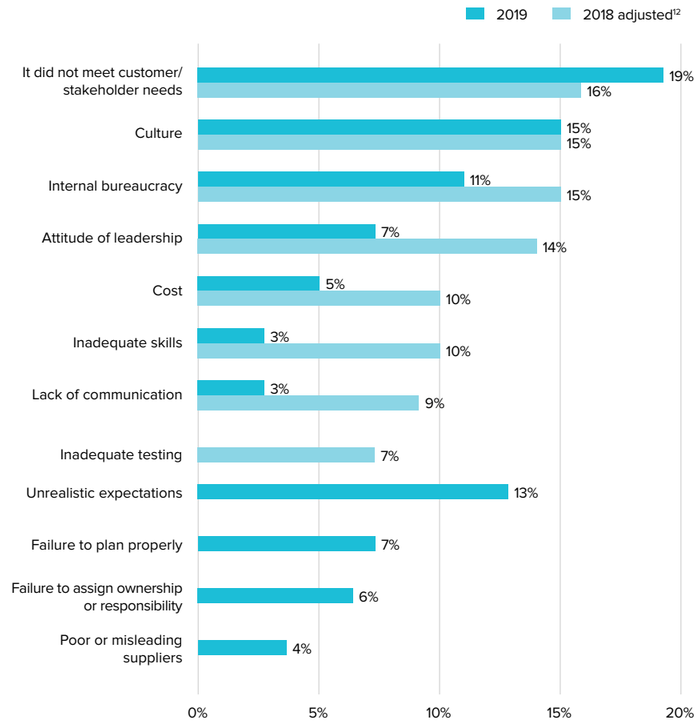


Fig. 33: Why did it fail?

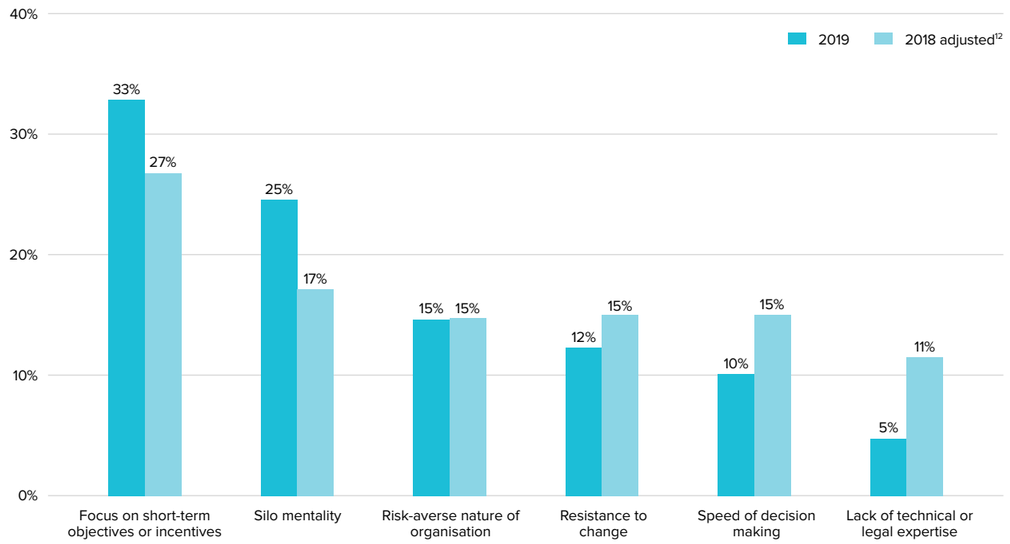


Fig. 34: What are the main cultural barriers to success?[12]

Further respondents cited ‘clarity of priorities and KPIs’, and needing a ‘clearer product vision’. One respondent wished they had ‘started the process [of change] before [implementing] the tech’.

A second theme was tight observation of iteration principles. One respondent wished they had ‘broken [the project] down into smaller chunks, done more testing on smaller risk pieces’; another advised, ‘don’t stop at [the] “go live” of a new proposition. Iterate 10 times to get propositions to maturity’.

A weak or poorly organised team was cited as a key driver of failure. Given another chance one respondent would have ‘start[ed] smaller with a more experienced team’, or would have ‘recruit[ed] the right talent and skills...[and] adapt[ed] the governance framework’.

Several respondents recommended prioritising communication across teams. One respondent answered they would ‘build in a communication strategy as integral to what was viewed as a “technology only” project’.

Respondents were mixed in their treatment of third parties. Some certainly felt let down, wishing for ‘stronger internal control of a third party’ or a different supplier. But one respondent wished they had ‘outsourced [the project] totally’, and another argued that ‘the solution should have been [delivered on] Cloud/SaaS, not on-premise’.

My organisation and failure

More respondents agreed that their organisation learned from failure effectively (43%) than disagreed (26%). Self-described disruptors were significantly more likely to learn from failure. However, not one single reactive defender strongly agreed that they learned from failure effectively and only 16% agreed at all. (Fig. 35)

Similarly, extremely large organisations of 25,000+ employees were the least likely to learn from failure effectively. (Fig. 35a)

Respondents were mixed in their view of whether their organisation forbid public failure. By this, we wanted to assess which respondents would expect to pay penalties for involvement in projects that might embarrass the company – from overt penalties such as job loss, to subtler penalties such as status loss. While respondents were overall more likely to disagree than agree, the largest single category was neutral (38%). (Fig.36)

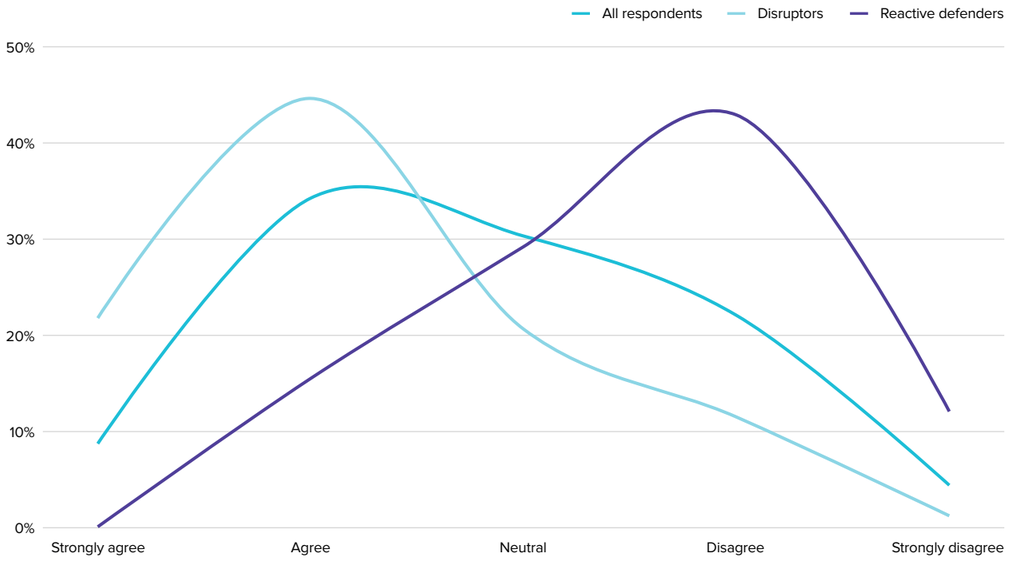


Fig. 35: 'My organisation learns from failure effectively.'

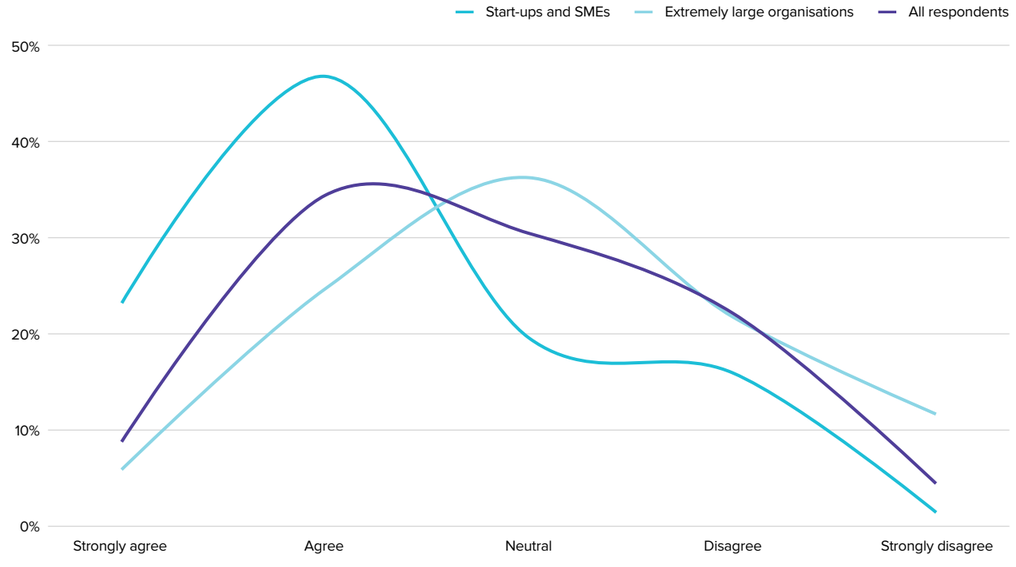


Fig. 35a: 'My organisation learns from failure effectively.'

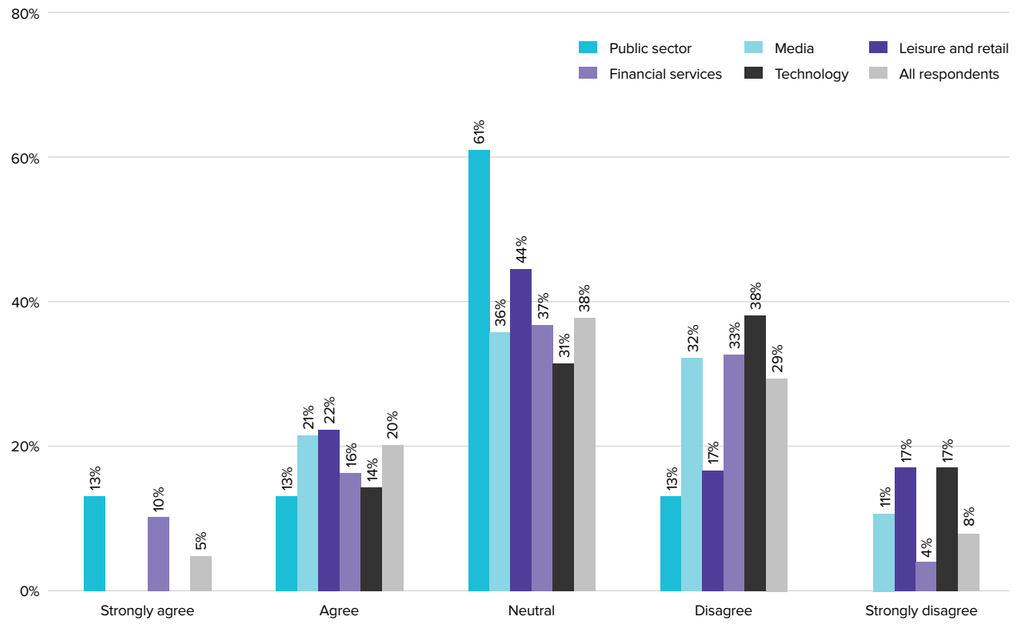


Fig. 36: 'My organisation forbids public failure.'

Various industries different on the question of public failure. Financial services had the largest proportion of respondents who agreed they were prohibited from public failure (26%), whereas the public sector saw the highest peak over neutral (61%).

44% of respondents agreed or strongly agreed that their organisation has a strong culture of iteration. (Fig. 37) Unsurprisingly, technology respondents reported a strong culture of iteration. (Fig. 37a)

Respondents generally agreed that the day-to-day running of the business prevents them from achieving digital goals. (Fig. 38)

This trend was particularly strong in reactive defenders with 62% agreeing. On the other hand, 47% of disruptors disagreed, suggesting that digital goals are more prioritised in these organisations.

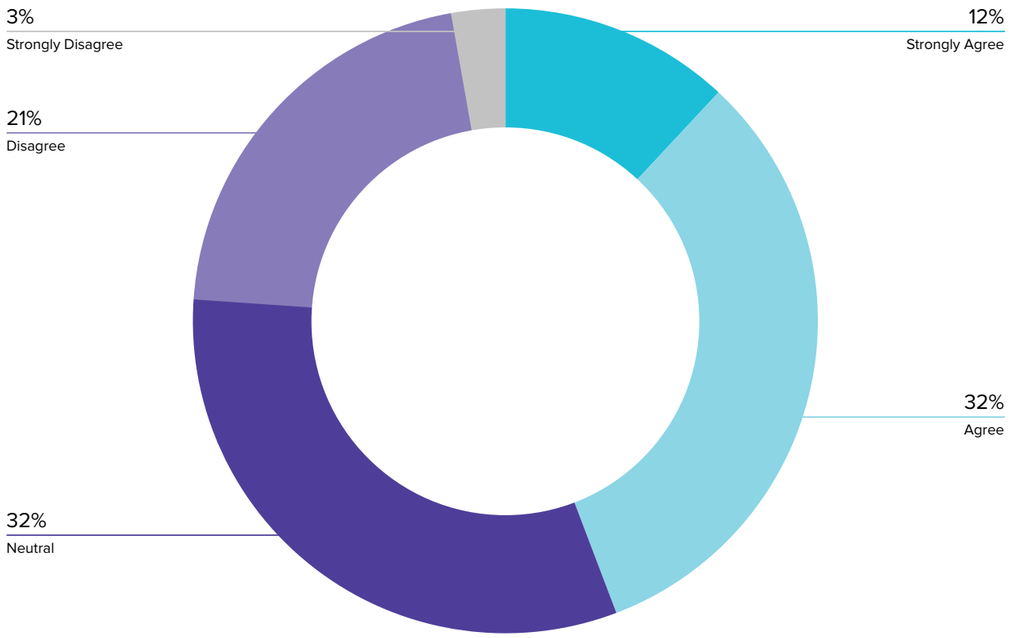


Fig. 37: 'My organisation has a strong culture of iteration.'

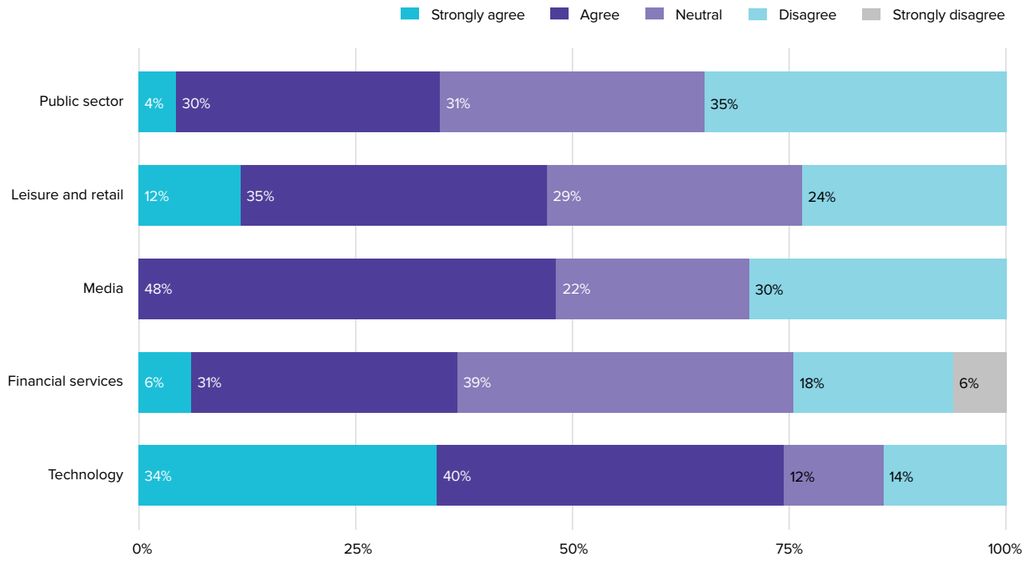


Fig. 37a: 'My organisation has a strong culture of iteration.'

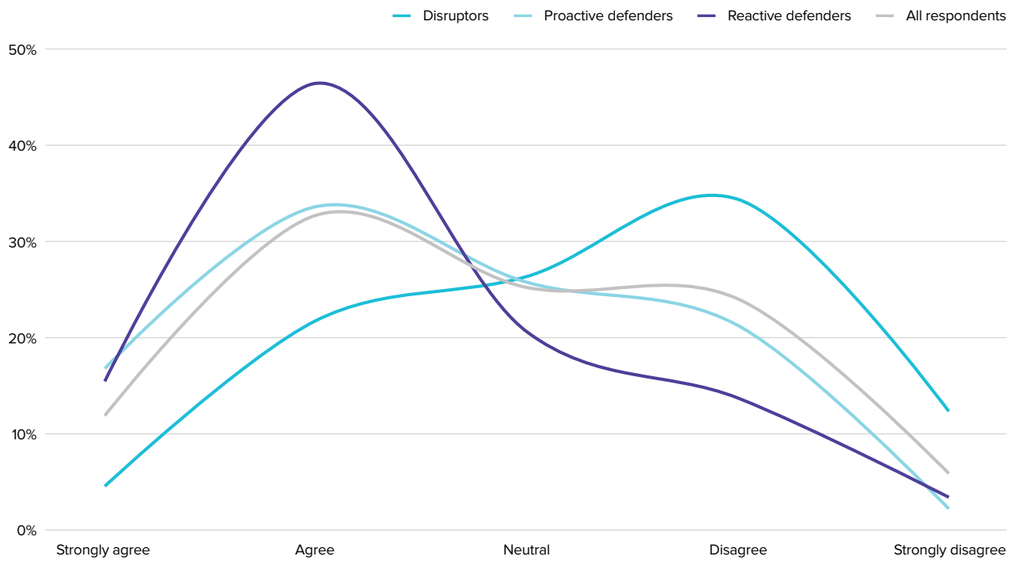


Fig. 38: 'The day-to-day running of the business prevents us achieving digital goals.'

My work is becoming harder

Overall, respondents were more likely to agree than disagree that their digital projects are becoming harder year on year. This trend was weakest among disruptors. (Fig. 39)

A sectoral analysis produces a mixed picture. Education and charity was the sectors most likely to agree that they were finding digital projects more difficult year on year; financial services were the sector most likely to disagree. (Fig. 39a)

Start-ups, SMEs and extremely large organisations were generally more ambivalent to this question than organisations classed as medium or large. (Fig. 39b)

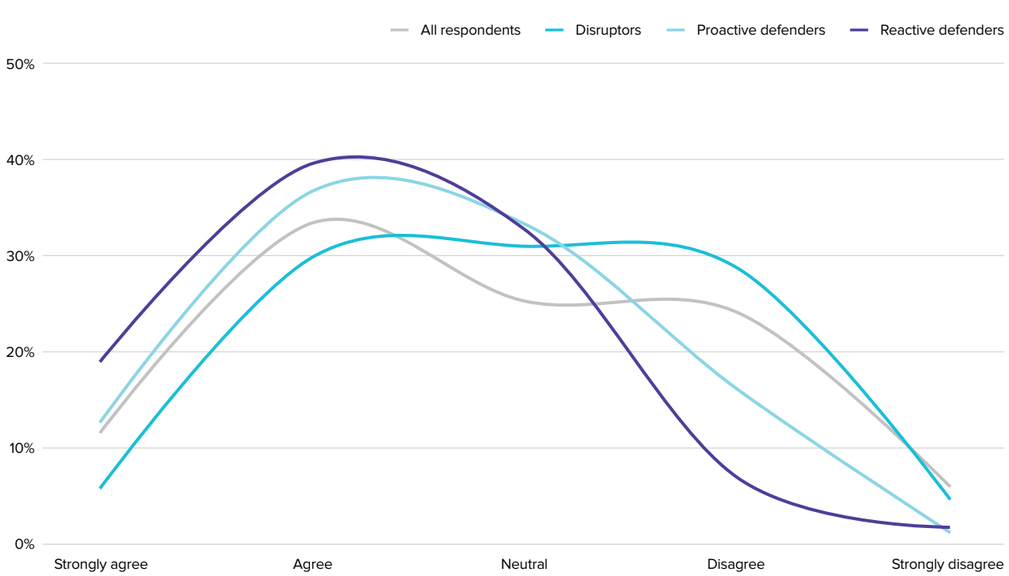


Fig. 39: 'The digital projects we must deliver are becoming harder year on year.'

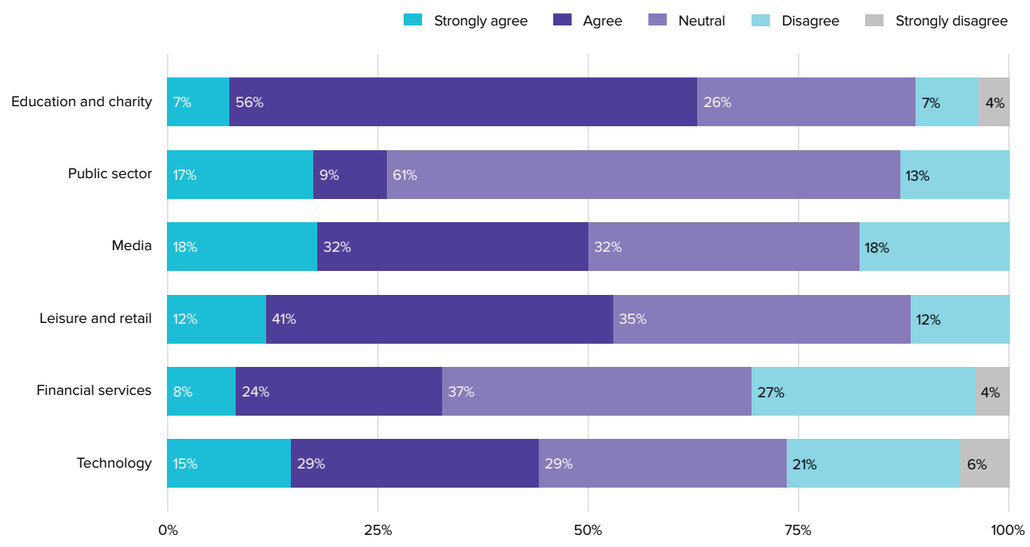


Fig. 39a: 'The digital projects we must deliver are becoming harder year on year.'

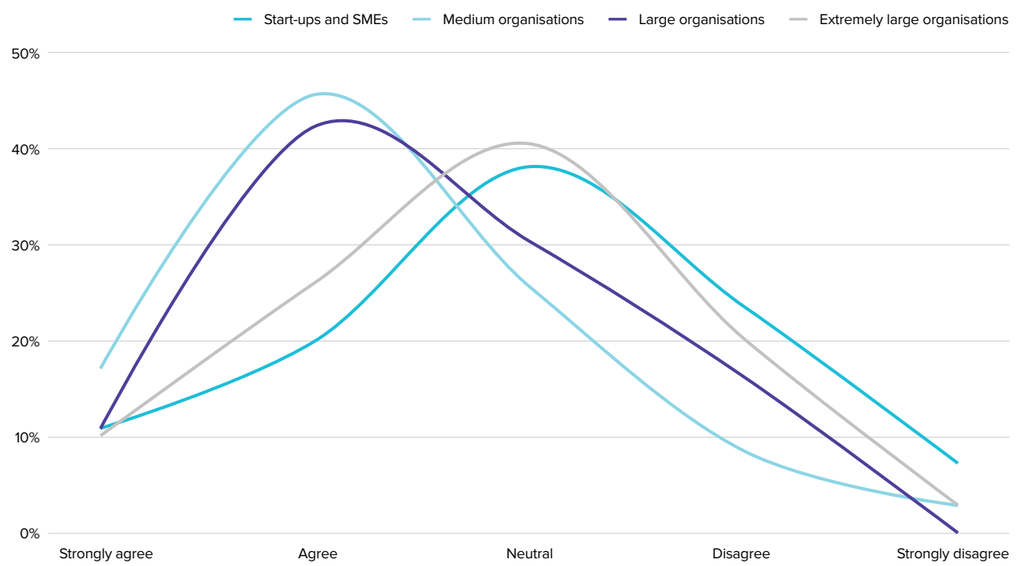
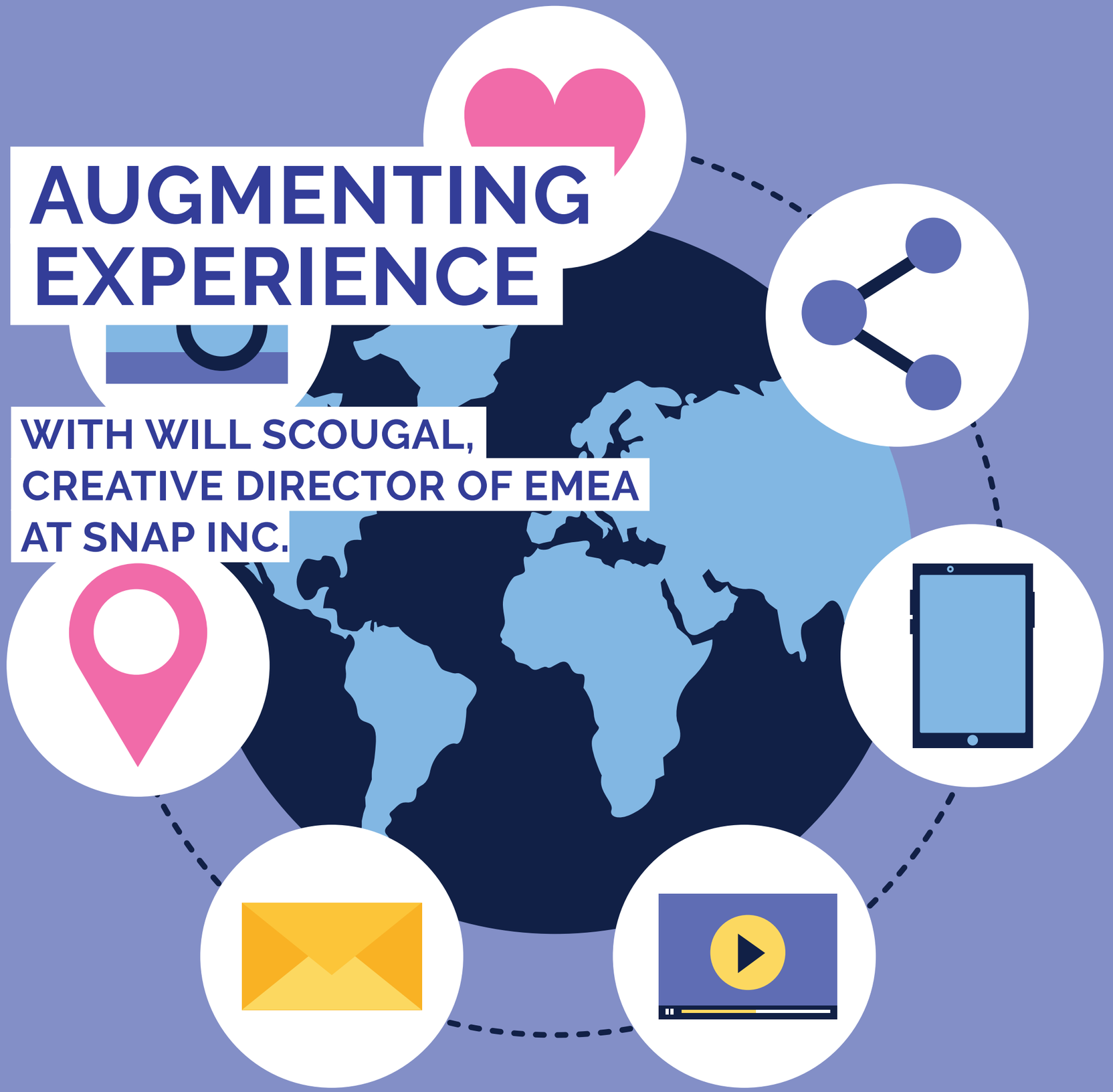


Fig. 39b: 'The digital projects we must deliver are becoming harder year on year.'

AUGMENTING EXPERIENCE

WITH WILL SCOUGAL, CREATIVE DIRECTOR OF EMEA AT SNAP INC.

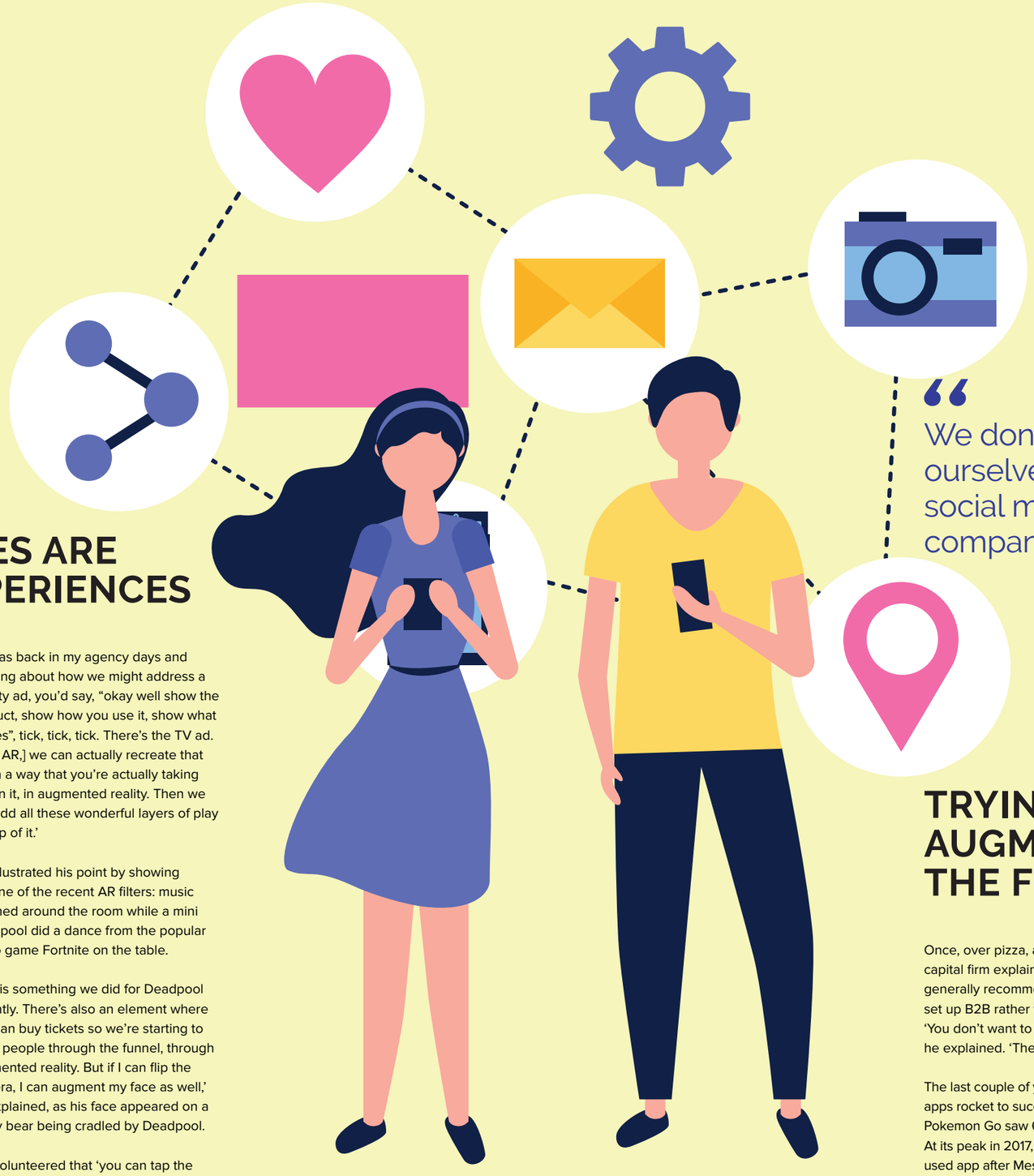


EXPERIMENTATION IN TECHNOLOGY CAN GO ONE WAY OR THE OTHER: INNOVATIVE SUCCESS OR PUBLIC FAILURE. WILL SCOUGAL THINKS CREATIVELY ABOUT INNOVATION AND WAYS TO MAKE HIS ORGANISATION MORE LUCRATIVE. SHAMMAH BANERJEE, OUR EDITOR, MET WITH HIM TO DISCUSS EXPERIMENTING IN THE CONTEXT OF RAPID GROWTH.

Rainbow vomit, dog ears and flower crowns today seem ubiquitous online, as does the white Snapchat ghost: Snap Inc. has proven itself a leader in augmented reality (AR).

The other key characteristic of Snap's product is instantaneousness and ephemerality: photos which self-delete are like butterflies in jars, ready to be let go. On Facebook, photos are preserved in the sticky resin of long-term personal timelines. And it's Snapchat that's captured the Generation Z market. Teens want fun, not nostalgia.

I went to meet Will Scougal, the Creative Director of EMEA for Snap Inc., to find out more. He has the job of combining a sense of magic with the discipline required for metric-led optimisation in one of the most competitive industries in the world. As competitors such as Instagram loom, I wanted to know how Snapchat was going to retain its character of novelty and fun while remaining lucrative.



ALL EXPERIENCES ARE MARKETING EXPERIENCES

'I think the wonderful thing about Snapchat,' said Will, 'is that it connects you in a very fast, very expressive, very creative, very human way, to the people you care about most, but digitally. When you think about the ephemeral nature of the snaps disappearing, it's very much like conversation. The snaps disappear after they've been read, just as words in conversation dissipate into the ether. You're not going to hear them again. That enables and empowers people to be more themselves to a certain degree.'

'But I think the primary thing worth noting,' said Will, 'is that it opens on the camera.' He contrasted this with feed-first products which he argued don't prompt creativity in the same way.

Design thinking such as this serves to answer two key questions. The first is how you create a space which users like. The second is how to insert profitable content. I asked Will about Snap Inc.'s strategy.

'With AR, we're shifting away from the idea of just play...how can brands create AR that adds a utility value above just the play experience? That's what we try to answer.'

'If I was back in my agency days and thinking about how we might address a beauty ad, you'd say, "okay well show the product, show how you use it, show what it does", tick, tick, tick. There's the TV ad. [With AR,] we can actually recreate that but in a way that you're actually taking part in it, in augmented reality. Then we can add all these wonderful layers of play on top of it.'

Will illustrated his point by showing me one of the recent AR filters: music boomed around the room while a mini Deadpool did a dance from the popular video game Fortnite on the table.

'This is something we did for Deadpool recently. There's also an element where you can buy tickets so we're starting to bring people through the funnel, through augmented reality. But if I can flip the camera, I can augment my face as well,' he explained, as his face appeared on a teddy bear being cradled by Deadpool.

Will volunteered that 'you can tap the AR on your phone to engage with the products, and eventually, to purchase them.'

> "We don't call ourselves a social media company...

TRYING TO AUGMENT THE FUTURE

Once, over pizza, a source from a venture capital firm explained to me why he generally recommended that founders set up B2B rather than B2C start-ups. 'You don't want to work with customers,' he explained. 'They're fickle.'

The last couple of years has seen AR apps rocket to success. On its first day, Pokemon Go saw 6 million downloads. At its peak in 2017, it was the fifth most used app after Messenger, Instagram, WhatsApp and Snapchat.[13] Pokemon Go is still an exciting company; but for many users, it turned out to be a fad. BlippAR, another augmented reality company, received investor excitement before collapsing into administration late last year.

Perhaps Twitter and Facebook are better comparisons. Both of these have large user bases, resilient growth and rely on promoted content as their revenue model. Both also suffer from PR issues which Snap does not. However, few moral condemnations could do the damage of an off-hand tweet from Kylie Jenner (from 'Keeping Up with the Kardashians'): 'sooo does anyone else not open Snapchat anymore? Or is it just me... ugh this is so sad.'[14]

That tweet purportedly cost Snap $1.3 billion in stock price;[15] fuelling worries that Snap is a fad, either for Gen Z (for whom, we should be clear, Jenner is not an acceptable proxy) or for investors. Snap Inc.'s stock peaked during its 2017 IPO.[16] The reasons are various: failure to sell enough ad spots has dampened revenue; or more seriously, a decline in the number of users in Q3 in 2018.[17]

Will was wary of comparison to Facebook or Instagram: 'we don't call ourselves a social media company,' he said.

'In 2015, we launched our first lens – the rainbow vomit lens – and since then, we've done over 4,000. A third of snapchatters are playing with AR for over three minutes every day. When you think about that, that's a huge amount of time spent on the experience that's happening in your handset.'

'In terms of the scale of this, 76% of all 13-to-34-year-old smartphone users will open Snapchat AR and return to it throughout the day. For us, we've started working out how we will take a certain brand problem and turn it into something that augmented reality can address.'

'We're reinventing the camera as a tool for self expression, for creativity, for connecting with close friends and family, for discovering the world and experiencing what's around you.'

CECI N'EST PAS UNE SOCIAL MEDIA COMPANY

> Attention is in the eye of the beholder, and to a certain degree, brands can create to fit within that.

"Snapchat" connotes visual language. One of the truisms of the design revolution pioneered by Steve Jobs is that technology should be visual. (Jobs once joked about wanting to 'lick' his products because they look so good.)[18]

In the same vein, content has become briefer, more opinion-led and content discovery is to a greater extent based on intrusive notifications. Perhaps as a consequence, KPMG accuses Gen Z of being 'less focused' than generations before them.[19]

This is the marketplace for attention, and it's hard fought. I wanted to come at the question of Snapchat's user numbers a different way; I asked Will about the way that abundant media for free has changed content.

I put this to Will, who shook his head. 'I think it's very easy for people in this industry to say attention spans are shortening. I think that's a myth. I think that brands, marketers, creatives and media planners should think about the creation-and-consumption mindset that people are in when they're on the platform. They're on there because they have chosen to be on there.'

In foregoing a traditional "feed", and with it, an internal marketplace for attention, Snapchat may have bypassed the issues of an Instagram or Facebook selection-algorithm: external publishers sometimes compete in a way which results in problematic content.[20] (External publishers on Snap pay their way and, says Will, they are 'well known, trusted publisher brands like National Geographic or The Economist.')

> You need to think about how people are creating and contributing to that experience themselves.

But in advertising, one thing is always true: users will never want brand experiences as much as brands want users to have brand experiences. IBM's lead evangelist believes that marketers now get 'ten words' to establish themselves in an extremely competitive media environment.[21]

Did Will agree that content was becoming briefer?

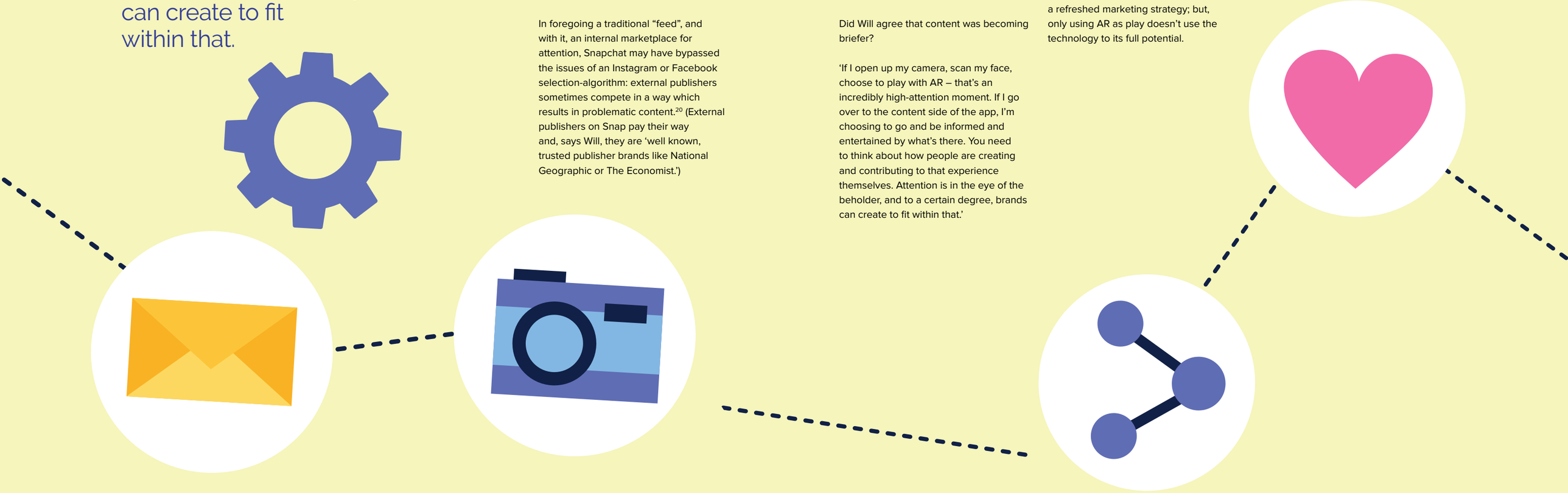
'If I open up my camera, scan my face, choose to play with AR – that's an incredibly high-attention moment. If I go over to the content side of the app, I'm choosing to go and be informed and entertained by what's there. You need to think about how people are creating and contributing to that experience themselves. Attention is in the eye of the beholder, and to a certain degree, brands can create to fit within that.'

'Think about the opening chords to Jaws. You only need to hear the first couple of seconds to have the hairs on your neck stand up. When you see a Banksy, you might stare at it for half an hour but you "get it" immediately. You automatically understand what it's trying to communicate. That's just an example of how creative craft can fit into a high-impact, high-attention moment, to deliver a powerful message without you having to sit there for ages to take it all in.'

Will and I seemed to approach the attention marketplace from different angles: he saw opportunity while I couldn't help but focus on how crowded it has become. It's clear that AR breathes life back into brands that need a refreshed marketing strategy; but, only using AR as play doesn't use the technology to its full potential.

The success of "stories" on Snapchat has been followed by a spate of similar features in other companies; even LinkedIn has trialled its version of the feature. The challenge for Snapchat seems to be the short half-life of innovative media experiences as novel. With a crowded media ether, retaining prominence on the global stage requires renewed pertinence.

For AR, this is utility. Already using AR for lucrative business advertising, Snap Inc. is in a position to pioneer change from just play to play-and-utility. From what I'd seen with Deadpool and Amazon, it is already moving in the right direction.



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