



DIGITAL REVOLUTION

UK TECHNOLOGY RESEARCH 2019

CONTEXTUAL ANALYSIS

INTRODUCTION

British business is continuing to face a period of prolonged uncertainty. Brexit, new regulations, and emerging technologies are offering up both challenges and opportunities. How British companies react and adapt will dictate how well they and the economy do, and technology will be at the heart of this period of transformation.

During the summer of 2019, ServiceteamIT, in conjunction with Doogheno, carried out their third annual technology adoption research of over 1,000 UK companies. The survey gives a snapshot of British business at this time of change. The research was completed over a three week period between the 7th of July and the 28th of July 2019 and the sample included over 1,000 people responsible for IT decision making, which ensured that valuable and insightful information was collected.

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The research explored the challenges, current infrastructure and services, and plans for the next 36 months. This report looks at the answers received and explores the impact of external challenges that businesses face in 2019 and beyond, such as Brexit, new legislation and the rise of cyber-crime.

We examined the impact of the uncertainty surrounding Brexit and companies' plans for readiness. While the Government continues to negotiate a no deal Brexit looks increasingly likely and business is no clearer about an outcome and the possible implications on regulation and trading conditions.

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UK businesses face an unprecedented level of threat from cyber-security attacks. Cyber security and data protection have been upfront in the news this year, with Facebook, BA and Marriott hotels all facing large fines for breaches.

The survey looked at the use of technology in UK business, from preferred cloud providers through to the overall use of emerging technologies, including Artificial Intelligence, Blockchain and IOT.

This paper explores the resulting data, and aims to put those results in context.

BREXIT

On the 31st of October Britain will leave the EU, with or without a deal. The likelihood of Brexit not happening in one form or another is low. For over three years the debate over what form our exit will take has raged on but there has been very little clarity provided in terms of what it will actually mean to business. In the research we found only 17% of companies reported that Brexit was already having an impact on their business; for most companies it is business as usual until the event actually happens. This is reflected by almost two thirds of businesses responding that they were either not making plans or did not know if the company had started making plans yet for Brexit.

At the time of writing there is less than two months to go and it is clear that many companies still have little idea of the potential impact on their company and especially on their IT systems. The number of companies planning for Brexit has doubled, but it still leaves many companies unprepared. While we will not add to the conjecture by claiming that we have the answers for what will come we can look at some of the areas that may be affected based on the data uncovered in the research.

DATA SOVREIGNTY AND BEING A THIRD COUNTRY

International treaties cover the free flow of data from country to country.. EU member states also have shared arrangements for data flows with non-EU countries. It allows you to use services hosted in Dublin as if they are hosted in your office, this has enabled the UK to become a £174 billion global data hub.

Potential problems post-Brexit with data transfers have received very little attention in the Brexit debate, yet, it could turn out to be as serious as more obvious issues relating to cross-border trade.

Even if a Brexit deal is agreed, the current EU law that covers the UK would have to be renegotiated bilaterally. If Britain leaves with no deal and no transitional period the UK would immediately become a third country in EU Law, and this would result in instant disruption to the data flowing between the EU and the UK. The UK would require special dispensation from the EU, an adequacy agreement, without which companies may incur very high legal costs to ensure that they are compliant.

The UK has the largest data centre market in Europe, and 75% of the data served goes to the EU. While the majority of companies in our research host in the UK, 54% also host in Europe. Some of this may be preparation for servicing EU customers after Brexit but often it will be to serve the UK. For these companies disruption may become a very real problem.

Most companies use SaaS services, often hosted outside of the UK. While it would be possible for a company hosting on AWS, such as Slack, to run up a UK instance not every company will. Resolving the data issues will be a matter of priority, but they still may cause disruption in areas of a business where the IT team has not specified application used.

SKILLS SHORTAGE

Businesses are facing a skills shortage. Our research indicated that this is a serious issue for 16% of companies. Many EU nationals are struggling to get settled status, even after living in the UK for many years, others are not even looking to stay. Retaining skilled EU staff and attracting new employees from Europe will be a challenge. Organisations will have to look at new ways to achieve this. The proposed points-based immigration system should open new markets to find employees but running the interview process to fill roles from somewhere like Ghana will be harder than doing the same for German candidates. Google and Microsoft are amongst the companies already tapping into the talent pools of countries including Ghana as they are in a position to fund this; for other companies this may not be possible, even when recruiting closer to home.

The skills shortage in areas such as software development and data science is not something that can be recruited away, even if companies do start looking further afield. Companies must start training and up skilling existing staff to cover these shortages, as post Brexit it will take time before replacements can be found for the EU nationals choosing to make tech hubs like Berlin or Amsterdam their home rather than the UK. The emerging technologies that the research covered shows that these skills are very much in demand in companies. If they do not have access to the skills needed for the company to take advantage of the new technologies the companies will lose their competitiveness.

ECONOMY

Brexit uncertainty has hit the economy. The pound has fallen and while overseas investment remains high, internal investment has taken a hit. Britain has had ten years of austerity and while in the private sector this has not had a major impact, the budgets of public sector IT teams have been slashed. It is unlikely that these will increase significantly over the next five years. It is possible that Brexit will tip the country into recession, many politicians feel that this is acceptable as the long-term benefits will outweigh short term pain, yet, companies going through that pain will have to adapt if they are going to minimise the impact. IT departments have spent a decade achieving more with less budget and they will have to continue in this vein for some time before feeling any benefits of new trade deals.

GDPR

Now over a year old, GDPR is still a disruptive force for UK IT teams, with over 40 percent (42%) of research subjects stating it was the biggest external factor impacting their business over the past 12 months.

There have only been a handful of fines issued under GDPR so far, but they have been significant. The ICO has started with fines for Marriott Hotels and British Airways, totalling almost £300m and this has focused the mind of many companies. Most companies looked at process and data locations when they readied themselves for the introduction of the new legislation, but it is the security of the data within the company that is the real issue. In Marriott Hotel's case they were not aware they had become guardians of the data through an acquisition. This lack of due diligence highlights the need for organisations to think further than existing policy and deleting old email addresses, and to start to take their responsibilities over data seriously.

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Many companies are only now appreciating that they underestimated what they need to do to be compliant. In larger organisations, particularly those that are well established, there is a realisation that the administrative burden of achieving compliance is much bigger than expected, not least because of the volume of data sets they have amassed. In smaller and newer companies this has been less troublesome as the administrative work is often done online with very little historical paperwork.

The focus for companies now should be beyond baseline compliance and should move towards accountability. Companies should be able to show that they have a true understanding of the risks to individuals in the ways that they process their data. And they also need an understanding of how they mitigate that risk in practice. Creating a strong accountability framework will move a company away from the box ticking exercise that they went through ahead of GDPR. Facebook and Cambridge Analytica's abuse of data has led many more people to have concerns about what data is being held, how it is being used and how it is being looked after.

GDPR has had an impact on companies use of data. Companies have often deleted data that would have formed the basis of their data based decision making. While data minimisation is best practice and also a requirement under GDPR, much of the lost data could have been anonymised and utilised. They heavy handed deletion of data should be reviewed as it may not be necessary for compliance and will hamper future projects around machine learning and data analytics.

CYBER SECURITY

In the most recent UK Office for National Statistics (ONS) Crime Survey for England and Wales it is estimated that there were around 4.5 million cybercrimes in England and Wales during the last twelve month period.

The landscape that organisations operate in has changed dramatically over the last few years with increased legislation and new technologies introducing new risk and there is a growing acceptance that technology alone cannot mitigate the risks associated with cyber crime. 15 percent of the participants in our research felt that cybersecurity incidents were the single biggest external factor that had impact their business in the last twelve months.

The changes bring challenges that affect technology, people and process/policy. Deploying hybrid solutions built on multiple cloud platforms increases the dependency of organisations on infrastructures interconnected with the outside world and the adoption of new solutions built around big data, IoT, AI or Robotic Process Automation brings the complex challenge of connecting parts of the organisation and data that were previously siloed.

Organisations are facing the need to be agile and to grow which can lead to business units bypassing central IT management to put in place solutions based on cloud services; from simple solutions such as Slack to running up development environments on AWS. All of this is producing new challenges for company security teams. And while the technology gets more sophisticated so do the threat vectors.

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Cybercrime itself has changed, a common theme amongst recent cyber attacks is this increasing sophistication, whether they are criminal gangs or state-sponsored such as WannaCry which originated in North Korea. The cyber criminal has more resources available to them and they are capable of accessing the most sensitive or valuable data. Cybercriminals steal or destroy data, deleting large swathes of data after encrypting it in the 4,000 ransomware attacks that happen every day. With the reliance on reactive cybersecurity, rather than proactive security management, organisations risk underestimating the threat landscape and the increasing complexity of networks with many platforms offers motivated hackers an opportunity to breach an organisation. The ever-changing and complex nature of the attack vectors means that an organisation's cybersecurity team may have to run to stand still.

Hackers will operate inside a business's network while remaining invisible. The damage is done long before the organisation has realised they have an issue. 12 percent of companies in our research group had experienced an increase in breaches of a level that required reporting to the ICO. When organisations had control of every aspect of the IT infrastructure in house visibility was easy but now with corporate assets and operations moved to the cloud this is far more challenging. And this lack of visibility brings with it risk.

Many companies are not aware of their external applications and instances of cloud storage, so it is impossible for them to mitigate all vulnerabilities. As the need for cybersecurity increases so does the complexity, additional layers of solutions are purchased and deployed, which can lead cybersecurity management teams being overwhelmed. This can result in the security team not understanding the relevance or the effectiveness of the solutions that have been deployed or inherited.

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CLOUD COMPUTING

A decade ago, cloud computing made up just five percent of IT spend, in 2019 it makes up over 30%, so it is safe to say that UK companies have taken the power and flexibility of cloud computing into the heart of their operations.

One of the biggest drivers for cloud adoption currently is the digital transformation projects that are being undertaken. Over 80% of the companies covered in our research said that digital transformation was very important for future business outcomes. Digital transformation is an overarching term that touches on many areas of a business and the flexibility and relatively low cost of cloud computing-based services are helping to make the changes companies require to keep them competitive. At the heart of this evolution is technology and the introduction of digital first natives into the workplace.

The digital-first millennial is no longer the office junior but is now the manager. By 2020, the millennial employee (those born between 1981 and 1996) are forecast to comprise half the workforce, and by 2025, they will make up 75 percent of the global workforce. Companies including Ernst & Young and Accenture have already reported that Millennials make up over two-thirds of their entire employee base. These workers grew up with the cloud, mobile apps, and innovative platforms. The new workers also use social networks and collaborative tools to share ideas and innovations. Their desire for greater flexibility has led to changes for all the workforce. Work is no longer a place you go; it is a thing you do, and cloud computing enables this.

Cloud computing is not an answer to all things within a business. 35% of businesses still run servers in house. The line of business applications that could easily be rehosted, or lifted and shifted, have long since migrated, leaving a handful of stubborn applications that have yet to be cloud enabled. There never seems a right time to address these applications as they are frankly hard work, needing extensive time and resource, and still carrying the possibility they may need a complete rebuild or even replacing. So, these applications continue to sit outside of preferred platforms, monitoring and internal support processes while introducing risk into the business. The research uncovered that 27 percent of companies still had applications that they couldn't move to the cloud because of integration issues. These applications are likely to never move to the cloud.

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Security is still a concern for some about migrating to the cloud, with 28% of companies stating that some of their applications remained in-house because of security concerns. Moving to the cloud may mean that you no longer have direct control over your infrastructure, but you still have control of your data. When you move to the cloud you lose control over physical security, which is generally a good thing. Very few companies can afford the manpower or resources to protect their data in house in the ways that a cloud provider can. Data centres also protect against loss of data through natural disasters, power or connectivity outages and even human error.

Some of the security concerns are being addressed by the increased use of direct connections to cloud infrastructure, increased to 43% of companies of companies surveyed.

Unsurprisingly, the two most common cloud platforms used by the companies that took part in the research are Microsoft Azure and AWS. Azure is used in just over half of all the companies (51%) and AWS in under a third (30%). Microsoft has found its way again with Azure, Windows 10 and Office 365 and this is reflected in its strong usage within the researched companies.

As cloud adoption stabilises, companies are starting to rationalise their cloud usage. Currently companies are using many clouds in their hybrid approach, with workloads sitting on different providers. As the cloud has matured, and it is now more about the services running on the cloud rather than the cloud infrastructure its self.

EMERGING TECHNOLOGY

Throughout history, there are moments when technology takes a great leap forward; with the introduction of the internet, then cloud computing and now it is new emerging technologies that will change the way we live and work. If the UK is to maintain its place in the world ranking, then companies need to embrace the emerging technologies that will help them increase efficiency and gain advantage. A revolution in technology is already emerging. If British businesses act now, they can lead it from the front. But if they 'wait and see' other countries will seize the advantage.

AI

The adoption of artificial intelligence (AI) is rapidly taking hold across UK businesses. AI, defined as the ability of a machine to perform cognitive functions associated with human minds (such as perceiving, reasoning, learning, and problem solving), includes a range of capabilities that enable AI to solve business problems. 12 percent of the companies we spoke to now have live AI projects, with and have embedded at least one into their standard business processes, while another 22 percent plan to be rolling out projects within the next 12 months. Yet, the business world is just beginning to harness AI and machine learning and their benefits.

BLOCKCHAIN

Blockchain adoption is very slow. It has long seemed a solution for a problem that no one has defined. But, practical uses are emerging and as these become more widely appreciated the adoption rate, which currently is one percent in our research base, will increase, although as it stands only five percent of businesses plan to adopt a blockchain solution within the next twelve months.

Smart contracts is the first area that blockchain advocates have been successful in winning over businesses. More innovative ideas such as using blockchain to utilise underused disc space and provide lower cost cloud data storage have yet to materialise into viable business products or services.

EDGE


In March 2019, the UK opened a national centre of excellence, PETRAS 2, covering the Internet of Things (IoT) and edge computing. The increased use of IoT is driving edge computing adoption with 10 percent of companies already using it and eight percent planning to deploy it within the next 12 months. The adoption of 5G and edge computing will drive new expectations for an always-on, high performing network and services. The high volumes of data that will be produced by IoT devices, will need to be processed in real-time and that will drive the need for edge computing. Edge computing allows for faster processing of data, reducing latency and improving customer experiences.

RPA

Robotic Process automation is being used or planned to be used in the next 12 months by 16% of the companies we spoke to. The initial hype of RPA has been replaced by a more realistic outlook on what it can achieve. It is undoubtedly beneficial in some sectors that have a high volume of data to process such as insurance and banking. Software robots are also being used to automate other task, for example in marketing and sales. Many companies see the adoption of RPA as their first steps into automation and then into AI. Vendors are trying to help commoditise RPA and when this is successful far more UK businesses will be able to benefit from the technology without high project and consulting costs.

IOT

IoT is about to explode. The launch of 5G on the UK's mobile networks will be the trigger that it has needed. Almost two thirds (62%) of the companies we spoke to have either started to use IoT or are considering adopting it, with 14% of companies already using it. IoT will become common place, we will start to expect that everything from the temperature in an office to a public rubbish bin to be monitored. The info derived from the data that will be produced should result in a better experience for everyone. But it will rely on the other emerging technologies such as edge computing, AI and machines learning, to deliver these benefits. As with all the emerging technologies its use will continue to grow over the new year.



IT can be complex. It's an ever changing world, with new technologies, new regulations and new threats. At **Serviceteam IT**, we love it. (This can make us a little boring at parties).

Ask us about the latest cyber-security trends, the challenges of data sovereignty or low latency connectivity, and we'll put the kettle on and open the biscuits.

Every company promises great service, few consistently achieve it.

At Serviceteam IT we strive always to be honest, transparent and personable at a price which is fair. Our professional team will work hard to bring you the benefit of their knowledge and experience, and our flexible, can-do approach means nothing is impossible if your pockets are deep enough. We're not the biggest, but our clients trust us, and believe we are one of the good ones.

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