



SMART GOVERNMENT – THE BIG BALANCING ACT

RESEARCH REPORT

—
JULY 2018



EXECUTIVE SUMMARY

No other organisation in the UK comes close to modern government in having to synchronise the vast array of essential services and functions required to support millions of people. Government is more complex and wide-reaching than ever before, but like any other organisation, has an imperative to transform. Yet, government often comes under fire for being slow to use the transformational potential of digital technology to change the way it operates.

This research explores the barriers to “smarter government” in the UK and specifically, focuses on three key pillars of data, security and agility in driving transformation as well as highlighting how foundations, such as infrastructure and operating paradigms, like procurement, need to evolve over the next five years in order that modern government can more effectively meet its transformation objectives and serve everyone.

Key stats from the research include the following:

THE TRANSFORMATION IMPERATIVE IN UK GOVERNMENT

- 74% recognise that the way citizens want to engage with the government and public services is changing
- The key drivers for technology investment in government departments are efficiency (50%), quality of service delivery (46%) and innovation (41%), followed by security / safeguarding data (33%)
- Half of IT leaders (58%) say they are satisfied with digital transformation progress in their department but only 12% would say they are extremely satisfied and 30% admit to being dissatisfied with progress
- The main hindrances to digital transformation within central government are seen to be investment in infrastructure (63%), leadership (51%), processes (50%) and investment in applications (49%)

THE DATA OPPORTUNITY

- Less than a third of IT leaders say data is being used extensively to drive operational decisions (31%). Fewer still use it extensively to drive strategic decisions (22%)
- More than half say their department could be making better use of data to improve operations / drive efficiency (57%). 40% say the same for making better strategic decisions / informing policy. 35% say they could use data better to foster more experimental / innovative practices and 32% to personalise / offer more tailored services to individuals
- Data analytics capabilities which need improving to enhance service delivery include data infrastructure (89%), setting protocols for data sharing (85%), ability to consolidate / visualise data (82%), setting standards for quality purposes (81%) and the ability to leverage data to improve service delivery (80%)
- 60% consider the government could better exploit open data sources to improve monitoring of service delivery
- Most struggle with gaining intelligence from the data available within the department (98%). Cost / available budget (62%) is identified as the biggest challenge. This is followed by leadership / sponsorship (39%), lack of analytics skills / expertise (31%) and poor data quality (27%). 24% highlight ethics / data privacy issues

SECURITY CONCERNS AND CONFIDENCE

- Security concerns within departments over the next 12 months include outdated operating systems (46%), mobile malware (36%), IoT / smart devices accessing the network (36%), social media attacks (34%), identity theft (31%) and DDoS attacks (31%)
- Over the next two years, half (49%) see external threats increasing and 34% expect internal threats to increase. Half (52%) see malicious threats increasing
- Over the next two years 28% expect investment in application security to increase and 27% say they see infrastructure security investment increasing. Most see this staying the same
- Confidence in managing future security threats is impacted by difficulty in keeping up with the speed of hackers' new approaches (40%), public scrutiny / need for transparency (38%), lack of resource / skill in IT function (37%) and new technologies introducing new risks (33%)
- Two-thirds (66%) say in the last five years their department has sacrificed performance (or tolerated performance degradation) in technology to have enhanced security

THE AGILITY ADVANTAGE

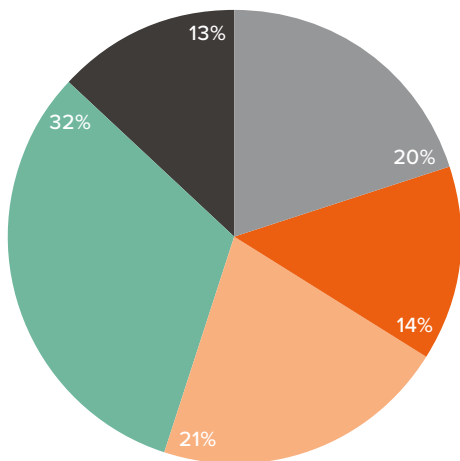
- On average, IT leaders consider that only half (54%) of projects fully meet customer expectations and are delivered on time and within budget. Budgetary constraints (60%) are stated as the main reasons central government tech projects may not deliver maximum value, followed by skills issues (50%), unrealistic expectations about what technology can deliver (40%) and integration / complexity issues (40%). 36% blame “boil the ocean” projects whilst 19% cite lack of ownership
- Only 1 in 10 currently uses agile extensively across the department (9%) with 31% using it in places / testing agile. A further 31% plan to adopt more agile approaches in the next one to two years
- Leadership / sponsorship (50%) is seen as the biggest challenge in adopting a more agile approach in IT departments, followed by a lack of agile skills / experience (40%). Other challenges include employee commitment (31%), collaboration across departments / cultural transformation (28%) and legacy procurement practices (26%)

MOVING FORWARDS – TRANSFORMATIONAL TECH AND PROCUREMENT REVOLUTIONS

- The technologies most expected to transform departments in central government over the next five years are surveillance technology (64%), biometric monitoring (63%), AI / robotics (56%) and IoT (55%), followed by blockchain (48%) and automated vehicles (42%)
- 95% of IT leaders think procurement practices need to evolve in the era of smart technology. Key evolutions are to focus on best value, not just lowest cost (56%), to include iterative, flexible and agile approaches (41%), shorter acquisition time frames (36%) and use of a wider range of tech vendors to ensure access to the newest, most innovative IT services (33%)
- Two thirds (65%) think the era of long term, high priced contracts is over and it is now about fast and flexible IT purchasing. More than half of IT leaders (56%) think they would be better off if they completely reset procurement policy
- 82% think central government can learn from the private sector in how it procures tech and 81% in how it uses tech

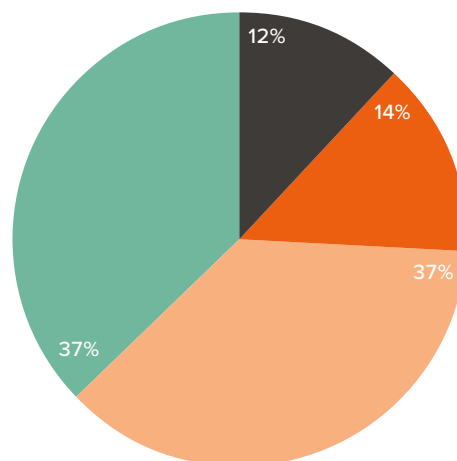
Government departments are generally satisfied with transformation progress and the UK is regarded highly in terms of digital progress but there is no room for complacency and still much to do to become a truly smart government. Government departments are grappling with security, data and agility and the challenges they are experiencing here point to common threads around leadership, skills and infrastructure. By focusing on these foundations, central government departments can lead the way in digital transformation and stereotypes of being “big and slow” can be consigned to the history books

SAMPLE BREAKDOWN BY DEPARTMENT TYPE



- Other
- Ministerial department
- Non-ministerial department
- Agencies / other public bodies
- Public corporations

SAMPLE BREAKDOWN BY DEPARTMENT SIZE



- 10,000 +
- 1000 - 9999
- 100 - 999
- Less than 100

RESEARCH METHODOLOGY

The research consisted of 101 interviews with IT leaders in UK Central Government conducted during September / October 2017. The research was managed by Insight Avenue, an independent research consultancy based in the UK.

THE TRANSFORMATION IMPERATIVE IN UK GOVERNMENT

Much has been done since the 2012 Government Digital Strategy and UK Government is one of the most digitally advanced in the world, coming top in the 2016 United Nations E-Government Survey¹ as well as developing the award-winning and internationally renowned gov.uk which has been replicated by other countries.

To govern is to serve and three quarters of IT leaders in government departments (74%) recognise that the way citizens want to engage with the government and public services is changing. Parallels can be drawn with commercial organisations as mantras of customer centricity echo around Boardrooms throughout the country. People rightly expect government departments to deliver public services effectively and at speed.

Transformation spans the delivery of citizen-facing services, delivery of policy objectives, improving efficiency and collaboration to deliver digitally enabled change more effectively. Technology sits at the heart of transformation and IT leaders state the key drivers of technology investment as efficiency (50%), quality of service delivery (46%) and innovation (41%), as shown in Figure 1. Other drivers include security / safeguarding data (33%), agility / responsiveness (23%) and building public trust / increasing transparency (20%). IT leaders play a pivotal role in building the technology foundations of a modern Government, driving the transformation agenda within the budgetary and structural constraints that impact any public sector organisation.

Changes can take the form of simplifying the smallest of citizen transactions to mass reform programmes – changes made possible by digital technology. 58% say they are satisfied with digital transformation progress. Yet, one third of IT leaders is dissatisfied and only 12% claim to be extremely satisfied. The main hindrances to digital transformation progress across central government are listed as investment in infrastructure (63%), leadership (51%) and processes (50%), with factors such as culture (44%) and skills (42%) also implicated (Figure 2). These are complex issues that reflect a ground-up investment requirement (infrastructure) and top-down commitment (leadership) to address. Infrastructure is rarely seen as the glamorous side of IT, but without it the shiny new applications that citizens interact with simply cannot operate. Similarly, leadership informs strategic direction and impacts the engagement levels of around 3 million² central government employees, in turn driving culture and processes. Everything is inter-connected and therein lies the challenge, and the opportunity.

FIGURE 1: DRIVERS OF TECHNOLOGY INVESTMENT IN DEPARTMENT

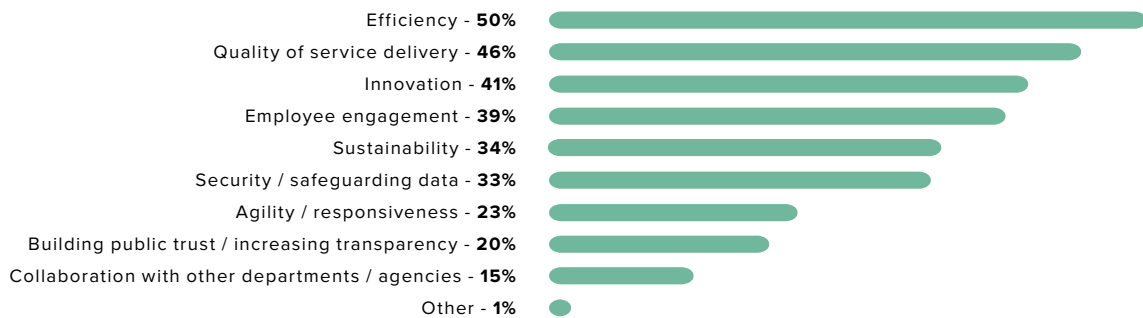
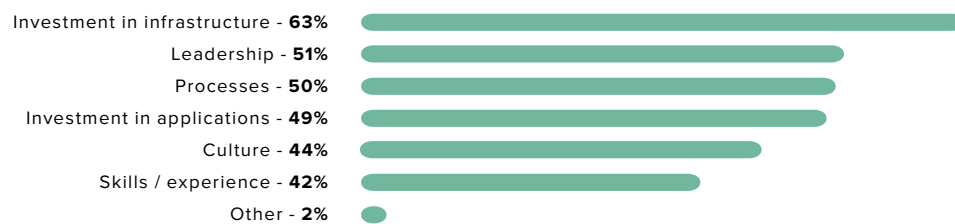


FIGURE 2: HINDRANCES TO DIGITAL TRANSFORMATION PROGRESS



¹ <https://publicadministration.un.org/egovkb/en-us/reports/un-e-government-survey-2016>

² Public sector employment, UK: September 2017 (ONS): <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/publicsectorpersonnel/bulletins/publicsectoremployment/september2017>

THE DATA OPPORTUNITY

Making better use of data is both a requirement and a driver of digital transformation. Rapid advances in technology mean departments can now process and analyse data in near real-time, drawing conclusions and creating policies and delivering high-quality public services. However, less than a third of IT leaders say they are using data extensively to drive operational decisions (31%). Fewer still use it extensively to drive strategic decisions (22%).

More than half of IT leaders say their department could be making better use of data to improve operations / drive efficiency (57%). 40% say the same for making better strategic decisions / informing policy. 35% say they could use data better to foster more experimental / innovative practices and 32% to personalise / offer more tailored services to individuals (Figure 3). There are many examples of government departments which have made significant strides with their use of data. These include DWP providing job seekers with more targeted advice and opportunities that closely match their personal profiles, the creation of the Land Registry Flood Risk Indicator service, free access to real-time information on companies via the Companies House Service, a range of digital services from HMRC through to the Great British public toilet app to name a few.

Most see big data as more of an opportunity than a risk to their department (62%) and 62% think their department should rely more on data / analytics and less on human judgement. There are several areas that IT leaders think need to be improved to positively impact service delivery by their department, ranging from data infrastructure (89%), setting protocols for data sharing (85%) and the ability to consolidate / visualise data (82%). The Once-Only principle in central government aims to reduce the need for people to repeatedly provide personal details to different government departments to get access to services. As the government opens up its data, visualisations and dashboards provide a way to get quick insights into patterns that can ultimately help inform and deliver high-quality public services. 60% consider the Government could better exploit open data sources to improve monitoring of service delivery. There are, however, limitations with data infrastructure that are seen to compromise the value of data and impact how it used. Shaky foundations here can end up undermining efforts elsewhere.

Most IT leaders say they struggle with gaining intelligence from the data available within the department (98%). Cost / available budget (62%) is identified as the biggest challenge. This is followed by leadership / sponsorship (39%), lack of analytics skills / expertise (31%) and poor data quality (27%). 24% highlight ethics / data privacy issues. Ultimately how government departments use data will define how citizens experience government services. Current shortcomings point to a need for an overarching data strategy, a focus on infrastructure and dedicated data roles, which are beginning to emerge to maximise the huge opportunities that data can bring.

FIGURE 3: WAYS DEPARTMENT COULD BE MAKING BETTER USE OF DATA

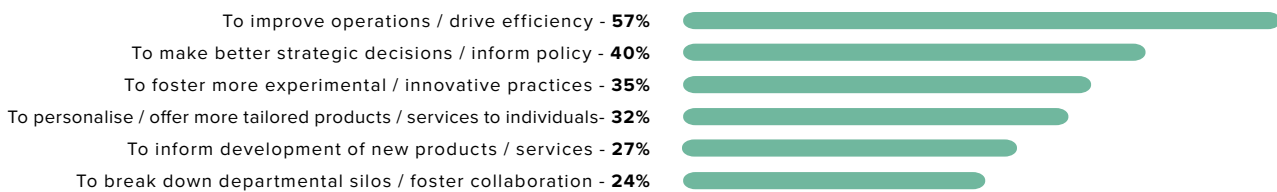
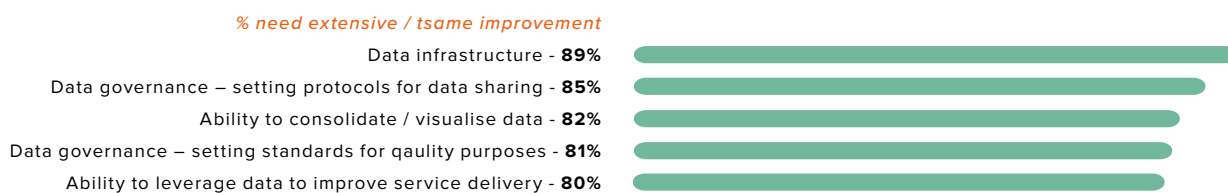


FIGURE 4: DATA CAPABILITIES THAT NEED IMPROVEMENT TO ENHANCE SERVICE DELIVERY



SECURITY CONCERNS AND CONFIDENCE

Potential security breaches are a concern for any organisation rolling out digital services, and central government must lead by example. Initiatives such as the new government security classification policy (GSCP) and CESG's cloud security principles (CSP) define much simpler data categories, whilst potential suppliers working with the G-Cloud must assert which security principles they comply with. All reflect a growing focus on cyber-resilience.

Yet the threat landscape constantly mutates. Over the next two years, half (49%) of IT leaders see external threats increasing whilst 1 in 3 (34%) expect internal threats to increase; and half (52%) expect to see malicious threats increasing. Cyber breaches such as WannaCry, which caused massive disruption across the NHS in May 2017 highlight the dangers associated with running outdated operating systems. Indeed, as shown in Figure 5, outdated operating systems emerge as the biggest security concern over the next 12 months (46%). Other specific concerns include mobile malware (36%), IoT / smart devices accessing the network (36%), social media attacks (34%), identity theft (31%) and DDoS attacks (31%).

It is now not so much a question of if a cyber-attack will occur, but when and how. And this presents a massive challenge for all organisations, including central government. IT leaders see many things impacting their confidence in managing future security threats – in particular, difficulty in keeping up with the speed of hackers’ new approaches (40%), public scrutiny / need for transparency (38%), a lack of resource / skill in the IT function (37%) and new technologies, such as drones and telematics, introducing new risks (33%). Investment in infrastructure and application security may not be keeping pace with expected increases in threats – most see investment here staying the same over the next two years, whilst 28% expect investment in application security to increase and 27% say they see infrastructure security investment increasing.

Security must be assured in technology procurement. Two-thirds (66%) say in the last five years their department has sacrificed performance (or tolerated performance degradation) in technology to have enhanced security. Furthermore, 68% say it is difficult to balance security, speed and innovation in their technology choices. There is still much to do in delivering highly secure AND high performing services in central government. Frameworks such as G-Cloud will help hold IT leaders and technology providers to account in ensuring security is front-of-mind. In an ever-changing threat landscape, no-one can afford to be complacent – outdated operating systems have no place in a modern government that seeks to serve and protect its people.

FIGURE 5: SECURITY CONCERNS OVER NEXT 12 MONTHS

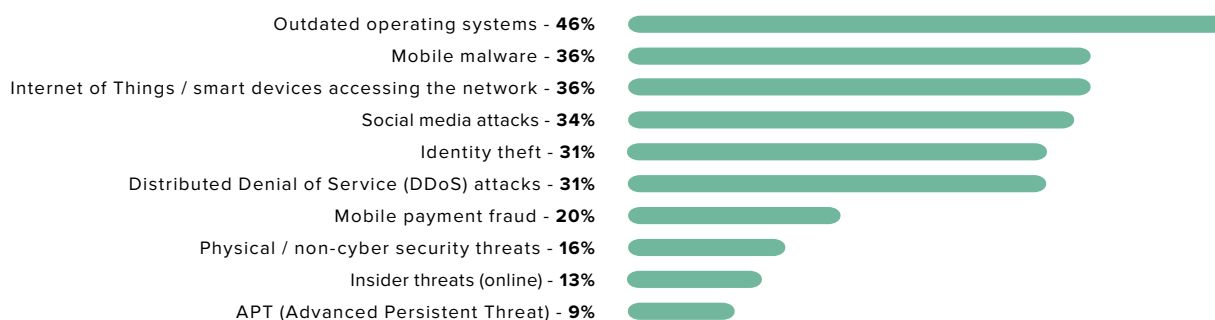
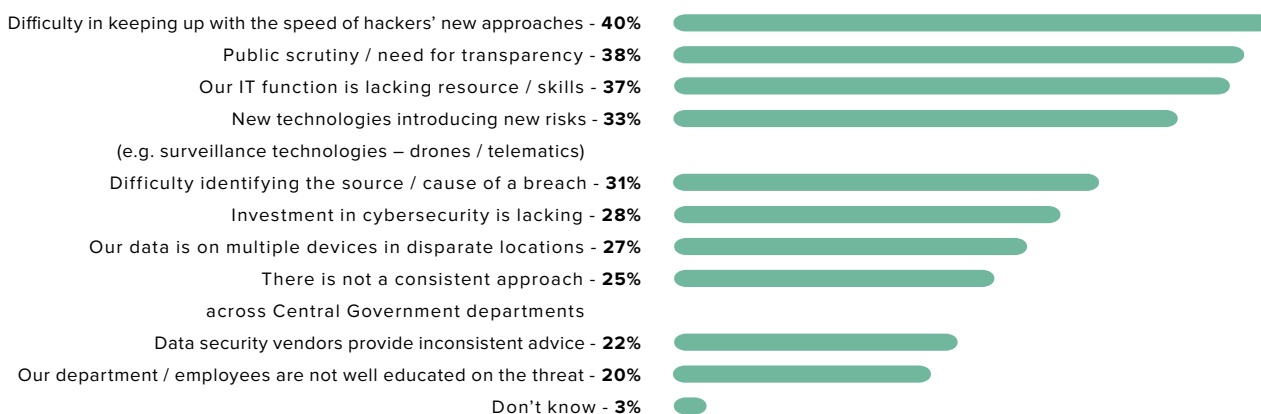


FIGURE 6: FACTORS IMPACTING CONFIDENCE IN MANAGING FUTURE SECURITY THREATS



THE AGILITY ADVANTAGE

On average, IT leaders consider that only half (54%) of projects fully meet customer expectations and are delivered on time and within budget. Budgetary constraints (60%) are cited as the main reason central government tech projects may not deliver maximum value, followed by skills issues (50%), unrealistic expectations about what technology can deliver (40%) and integration / complexity issues (40%). 36% blame “boil the ocean” projects whilst 19% cite lack of ownership.

Public expectations and scrutiny are higher than ever, budget constraints and skills are perennial issues for government departments, and it seems that legacy approaches to project management may no longer fit in a digital-first government. Big and slow are words often associated with government, but as agility becomes the new watchword for organisations, public sector departments are waking up to the possibilities that agile approaches in tech deployment can bring. Agile started out as an alternative approach to software development but is now applied more widely. Agile methods encourage teams to build quickly, to test what they’ve built and iterate their work based on regular feedback. Only 1 in 10 currently uses agile extensively across the department (9%) with 31% using it in places / testing agile. A further 31% plan to adopt more agile approaches in the next one to two years, as shown in Figure 7.

The recently published Government Transformation Strategy 2107-2020 pledges a “change of working, of culture and of disposition” and calls for “strengthening our leaders’ skills in Agile project and programme management”³ Being agile is something that is easier said than done. Looking at data analytics, security and agility as three key pillars of smart government, IT leaders say they are least confident in agility (47%). Leadership / sponsorship (50%) is seen as the biggest challenge in adopting a more agile approach in IT departments, followed by a lack of agile skills / experience (40%), as shown in Figure 8. The very areas that the Government Transformation Strategy focuses on are proving the most difficult to address - leadership and skills. Other challenges include employee commitment (31%), collaboration across departments / cultural transformation (28%) and legacy procurement practices (26%). These barriers highlight the fact that agile is as much something you are, as something you do.

Agile represents a significant shift but by understanding agile techniques, having a clear vision and engaged leaders, departments can better embed agility in how the government serves the public, enabling value to be delivered sooner and greatly reducing the risk of not delivering anything at all.

FIGURE 7: USE OF AGILE APPROACHES IN TECH DEPLOYMENT

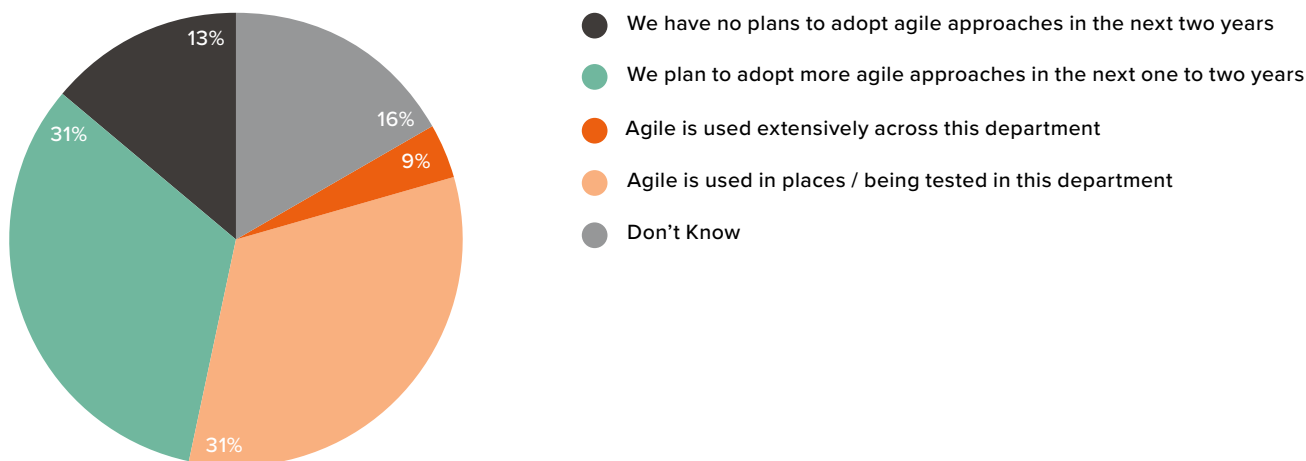
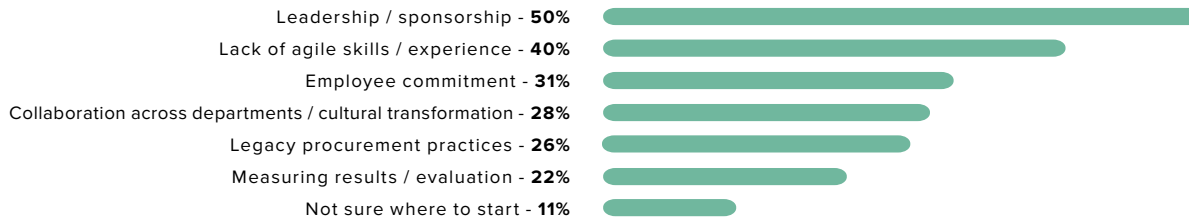


FIGURE 8: CHALLENGES IN ADOPTING A MORE AGILE APPROACH IN IT



MOVING FORWARD - TRANSFORMATIONAL TECH AND PROCUREMENT REVOLUTIONS

Looking specifically at the technologies most expected to transform departments in central government over the next five years, Figure 9 shows surveillance technology (64%), biometric monitoring (63%), AI / robotics (56%) and IoT (55%), followed by blockchain (48%) and automated vehicles (42%) are considered as likely to have the biggest impact. The next five years will see unprecedented change in how government operates in service of the people – risks and opportunities will need to be carefully balanced, priorities assessed and operations reimaged.

To deliver digital transformation, government departments need to rethink how they procure technology products and services. 95% of IT leaders think procurement practices need to evolve in the era of smart technology. Agile mindsets are emerging with a focus on best value, not just lowest cost (56%), to include iterative, flexible and agile approaches (41%), shorter acquisition time frames (36%) and use of a wider range of tech vendors to ensure access to the newest, most innovative IT services (33%), cited as the key ways in which procurement practices must evolve (see Figure 10).

Furthermore, two thirds (65%) think the era of long term, high priced contracts is over and it is now about fast and flexible IT purchasing. G-cloud represents a framework that goes somewhat towards a flexible, “pay as you go” approach to buying IT whilst offering consistency in terms of security assurances. The shortcomings of legacy approaches are evident though as more than half of IT leaders (56%) think they would be better off if they completely reset procurement policy. The private sector perhaps holds some of the answers - 82% think Central Government can learn from the private sector in how it procures tech and 81% in how it uses tech. Figure 11 shows some areas where government departments could learn from private sector

³ <https://www.gov.uk/government/publications/government-transformation-strategy-2017-to-2020>

As Tony Meggs, Chief Executive of the Infrastructure and Projects Authority, concluded in his speech on transforming public services through major projects in January 2018 "The transformation of government is a huge and ambitious agenda. We're making great progress in delivering it, but we still have a long way to go."⁴ Analytics, security and agility are just three pillars in becoming a transformational government. Underpinning all these however, is the need for vision, leadership and skills. In simple terms, transformation starts with thinking about how departments could better work to serve the public, and then looking at the data needed to work in this way and the technology required to generate that data. Focusing on these foundations helps in prioritising activity and in measuring impact, putting departments on the right track to working smarter.

FIGURE 9: TECH MOST EXPECTED TO TRANSFORM DEPARTMENTS IN NEXT FIVE YEARS

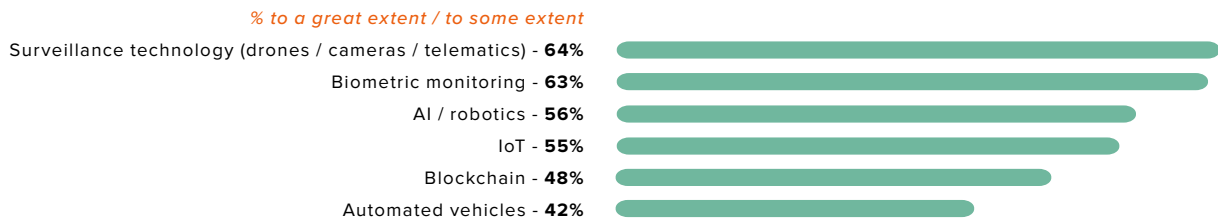


FIGURE 10: WAYS PROCUREMENT PRACTICES NEED TO EVOLVE

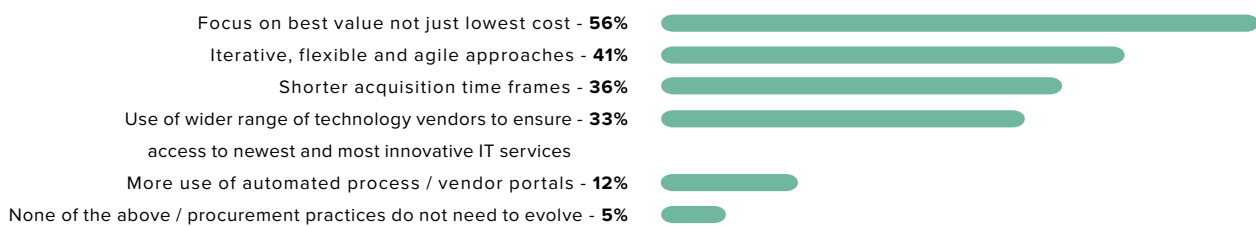


FIGURE 11: LESSONS FROM THE PRIVATE SECTOR IN HOW TO PROCURE / USE TECH



⁴<https://www.gov.uk/government/speeches/transforming-public-services-through-major-projects>



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