

An isometric illustration depicting various digital skills training scenarios. It features people interacting with large digital devices like tablets and laptops. Some scenes show individuals working at desks, while others show collaborative learning or data analysis. The background is a light blue with dotted lines and icons representing technology and connectivity. Labels for 'ARTIFICIAL INTELLIGENCE', 'AUTOMATION', and 'MACHINE LEARNING' are integrated into the design.

UK civil service digital skills report



INTRODUCTION

Welcome to the UK civil service digital skills report

Our mission is to support government and constituents to harness the power of technology in their everyday lives. Key to enabling that is to ensure that the necessary skills are in place to transform public services, both directly to citizens and partner organisations and to work smarter and faster across the civil service.

The aim of this research is to understand more about the scale and shape of the digital skills gap across the civil service, in order to best understand how technology partners can support the government.

Our key questions were:

Do civil servants believe that technology is core to transforming government?

Do civil servants think they and their departments have the digital skills they need to deliver modern public services?

Are transformation projects in government stalling because of skills gaps?

Are civil servants getting the digital skills training they need?

The study has provided us with conclusive answers, and demonstrates the growing appetite for digital skills training across both technical and non-technical professions.

We have also discovered that we can work in partnership with the public sector to scale digital skills, set a clear bar across the civil service – working together to overcome some of the challenges. I'm delighted that Megan Lee, Government Chief Digital Officer, has supported the publication of the report, and that we are already working on plans to develop digital skills programmes with the Central Digital and Data Office of Cabinet Office.

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I am delighted to announce the launch of an industry consultation period to listen to the needs of the civil service, unpick some of the challenges and build for the future through digital skills.



Whilst we set about meeting these complex and ambitious goals, it is also very important to recognise the skills and innovation that currently exist. From the acceleration of digital transformation necessitated by the pandemic, to leading transformation initiatives such as delivering the UK's first digital-first census, pockets of brilliance are easy to identify, and have set the bar high.

We want to support government to create a standard that all are able to access and achieve, and build a programme of skills development, training and career opportunities for all civil servants.

It's our responsibility as a technology leader to work on this, and it's our commitment as a trusted partner of HM Government and the wider public sector. As a result of this research, I am delighted to announce the launch of an industry consultation period to unpick some of the challenges, listen to your needs and build a skills programme together that delivers. For more information, **[please click here](#)**.

Building foundations and capacity to enable the continuous process of innovation is key to creating the civil service of the future. We are excited to explore

how a dedicated digital skills programme for all civil servants can produce fantastic outcomes both within government departments, and the services you deliver to citizens.

At Google Cloud, we are committed to improving the lives of as many people as possible, and part of that means expanding digital skills programmes to prepare communities, individuals, and local economies for the opportunities of today — and tomorrow. We also know that connecting the user to leading technology can deliver extraordinary results.

For more information on our consultation process and our wider commitment to closing the digital skills gap, **[please click here](#)**.

We want to support on both fronts – the skills to leverage new technologies, and the culture to make change stick.

Adam Stewart

Adam Stewart Head of Public Sector, UK and Ireland,
Google Cloud



Adam Stewart
Head of Public Sector,
UK&I, Google Cloud





FOREWORD

I'm pleased to have the opportunity to introduce this civil service digital skills survey. As chief executive of the UK Government's Central Digital and Data Office (CDDO), I don't underestimate the challenges we face when it comes to attracting and retaining top of the market digital talent in a fiercely competitive environment, or the benefits that could be reaped for the public if we are to succeed in building digital skills at scale.

Our vision is that by 2025, the UK government will be a transformed more efficient digital government that provides better outcomes for everyone. A central tenet of that mission is in equipping civil servants for a digital future: focused on upskilling digital and data capability and ensuring access to the right data and tools to do the job effectively. CDDO leads the Digital, Data and Technology (DDaT) profession, and we are fully committed to empowering all government departments to attract and build digital talent at scale.

I was thrilled to read in this report that over 75% of civil servants would like to receive more digital skills training. CDDO is rising to meet this demand through the plans set out in our **Transforming for a digital future: 2022 to 2025 roadmap for digital and data**. And, amongst other commitments, we've pledged to:

- Upskill at least 90% of senior civil servants (SCS) on digital and data essentials, with learning embedded into performance and development standards, and launching digital, data and technology essentials as a required standard for all SCS to meet

- Deepen the skills of our DDaT professionals, who will undertake DDaT related training at least once a year, recording their skills, to support the prioritisation of learning interventions and associated investment
- Ensure that all departments will, as a minimum, meet the definition of "good" for product-centric organisational structures and agile ways of working

We've already made a start on each of these commitments. In September 2022 we launched the Autumn of Digital Learning, featuring spotlight webinars, masterclasses and development opportunities, primarily targeted at senior leaders. And, we've launched the Digital and Data Essentials, a core set of capabilities that all civil servants should strive to have. CDDO has also assessed product centric ways of working across many high volume services, identifying opportunities to further strengthen the way in which government uses Agile at scale.

In an increasingly challenging external environment, the civil service will need to work smarter and faster to deliver great services to the public, and to deliver policies that are precise and impactful. Only through leveraging the power of digital and data can we do that. This will take concerted cross-government effort and focus to make the type of progress we can be proud of, and we too welcome the expertise of industry leaders, like Google, who set the bar for the types of digital services we aspire to equal.



Megan Lee

Chief executive of the Central Digital and Data Office (CDDO), the head of the Digital, Data and Technology (DDaT) function for HM Government

Thank you to Google for sharing an advance preview of the UK civil service digital skills report as well as to Global Government Forum for the substantial donation for the Disaster Emergency Committee's Ukrainian Appeal on behalf of all the survey respondents.



EXECUTIVE SUMMARY

Technology has transformed every corner of our lives.

From banking to shopping, and from communicating with friends to planning travel, digital services now dominate every sector – and government needs to keep up with a changing society.

However, to create the modern, digitised services that citizens expect, government must have both the foundations and the capability needed for transformation. This requires digital skills in the civil service so that the possibilities opened up by technology are recognised; modern technology to help unlock progress; and a continuous process of innovation to make sure this potential can be realised.

This research provides an in-depth look at the skills in these areas across government. Supported by Google Cloud, Global Government Forum researched how UK civil servants judge their personal and departmental level of skill across five essential digital, data and technology areas for modern government. We also explored what opportunities and barriers existed to closing the digital skills gap – and whether the technology available is fit for purpose to achieve transformation.

Survey results: five key takeaways

Digital transformation is held back by legacy technology, with budget constraints and a lack of training opportunities and skills among the other barriers identified.

When asked what is significantly holding them back from using digital to improve public services, half of respondents highlighted both legacy technology that is no longer fit for purpose (50%), and budget constraints/lack of funding (50%). These two areas – along with concerns over a lack of fit-for-purpose civil service funded training opportunities – were the top factors when officials were asked what single action their department or organisation should undertake to improve its ability to use technology to innovate and transform public services.

These three factors are consistent across different groups of survey respondents. Officials who work on digital transformation projects, for example, also identify these as the top barriers to their work, with nearly two-thirds (63%) saying that “legacy technology that is no longer fit





for purpose” is an issue, followed by 61% who say that budget constraints/lack of funding is. Half of those working on transformation programmes also say that a lack of skills is a problem in that they are unable to hire qualified talent (50%).

Civil servants think technology is key to unlocking public sector transformation and they are committed to innovate and optimise the way that public services are delivered.

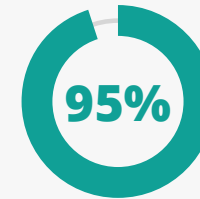
Civil servants across government acknowledge that it is part of their job to innovate and optimise the way public services are provided (86% agree or strongly agree), and a large proportion believe technology is vital to improving public services, with over two-thirds of overall respondents (76%) agreeing or strongly agreeing it is key to transformation.

However, the proportion of officials who say that they have an intermediate, advanced or highly specialised knowledge of how technology and data can be used to transform public services is smaller, at 61% – and a smaller proportion still (42%) think that their department has the tools, resources and skills necessary to utilise technology in transforming the public services they deliver.

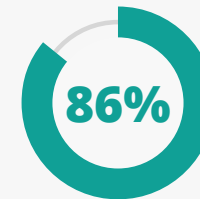
Limited understanding of more advanced technologies is hampering ambitions to make better use of digital and civil servants need to know what these advanced technologies are to know if they can be useful.

Officials in government are confident in their digital collaboration skills. Nearly all (95%) say they have at least intermediate skills in using digital, data and technology to communicate and collaborate with others – showing technology is integral in all professions and disciplines within the civil service. Of those who say they have at least intermediate skills, 47% rate their skills as advanced, and a further 11% say they are highly specialised. Civil servants also say they have advanced skills in communicating securely and sharing data and information securely with internal and external colleagues and stakeholders (88% with at least intermediate skills).

However, officials’ skills are less advanced in other areas crucial to digital transformation. For example, over a third say they have very few or no skills or knowledge in how artificial intelligence, machine learning and automation can be deployed to improve public service delivery (37%) and implementing, deploying, migrating, and/or maintaining



of respondents say they have at least intermediate skills in collaborating remotely in real-time with colleagues – the highest individual skill rating in the survey



of civil servants believe that it is their job to innovate and optimise the way that public services are provided



of civil servants believe that technology is the key to unlocking public sector transformation



applications on cloud infrastructure (39%). In both cases this is a higher proportion than those who say they have intermediate, advanced or highly specialised knowledge in these areas, which was 30% of respondents for both of these important areas.

Nearly half of DDaT procurement officials worry procurement is holding back transformation, as do those working on transformation.

Procurement officials are more concerned than the overall sample that purchasing represents a barrier to government transformation.

Nearly half of those involved in DDaT procurement (48%) say that procurement is significantly holding them back from using digital to improve public services – a score that is 18 points higher than across all respondents (30%).

Concerns over procurement are also higher among those working on digital transformation programmes, with 44% of this group saying it is holding back transformation.

Civil servants from all professions and functions are keen to develop their digital skills including those working on digital transformation projects.

The report finds there is a real appetite among civil servants for additional training to improve their digital skills. Over three-quarters (78%) of civil servants would like to receive more digital skills training, but nearly one in five (19%) report they have not received internal or external training within the last two years.

The areas where officials have received the most digital training in the last two years is in the secure, safe and legal handling/collection of information and data, which has been undertaken by 56% of respondents, followed by digital tools and skills in internal or external communication (43%), and digital tools and skills for effective collaboration (36%). These three areas correspond with the areas in which officials self-identify as having the highest level of skills.



would like to receive more digital skills training from their employer – including 78% of officials working on digital transformation projects



of officials working in digital transformation say “legacy technology that is no longer fit for purpose” is a barrier



**1,006**people responded
to this survey

Survey Sample

The UK civil service has been focused on boosting digital skills for a long time, as government looks to harness technology to create efficiencies and improve service delivery. It has made good progress in developing skills, both within professions and across the entire service.

This survey is intended to identify the scope of digital skills across government – to understand the strengths of civil servants and departments in a host of digital areas, and to see how the UK government is keeping up with advanced technologies.

The survey attracted responses from 1,006 people. Some 5% of respondents are members of the Senior Civil Service (SCS) and a further 33% are Grades 6

or 7 – between them, groups that make up the top 14% of the civil service workforce.

Where relevant, we have drawn distinctions between senior grades (we have grouped the **Senior Civil Service grades and Grades 6 and 7** for this purpose) and others, and in some instances we have segmented the data where we had large responses from the civil service professions, particularly those working in government's **Digital, Data and Technology (DDaT) and IT professions**, which we have grouped together in some analysis. We have also segmented those respondents who indicated that they are currently working on a **digital transformation project** (21% of respondents) and labelled this segment 'digital transformation' in our charts.





SURVEY FINDINGS

Digital transformation is held back by legacy technology, with budget constraints and a lack of training opportunities among the other barriers identified.

63% of civil servants working on digital transformation projects think that legacy technology that is no longer fit for purpose is significantly holding them back from using digital to improve public services (as do 50% of civil servants overall)

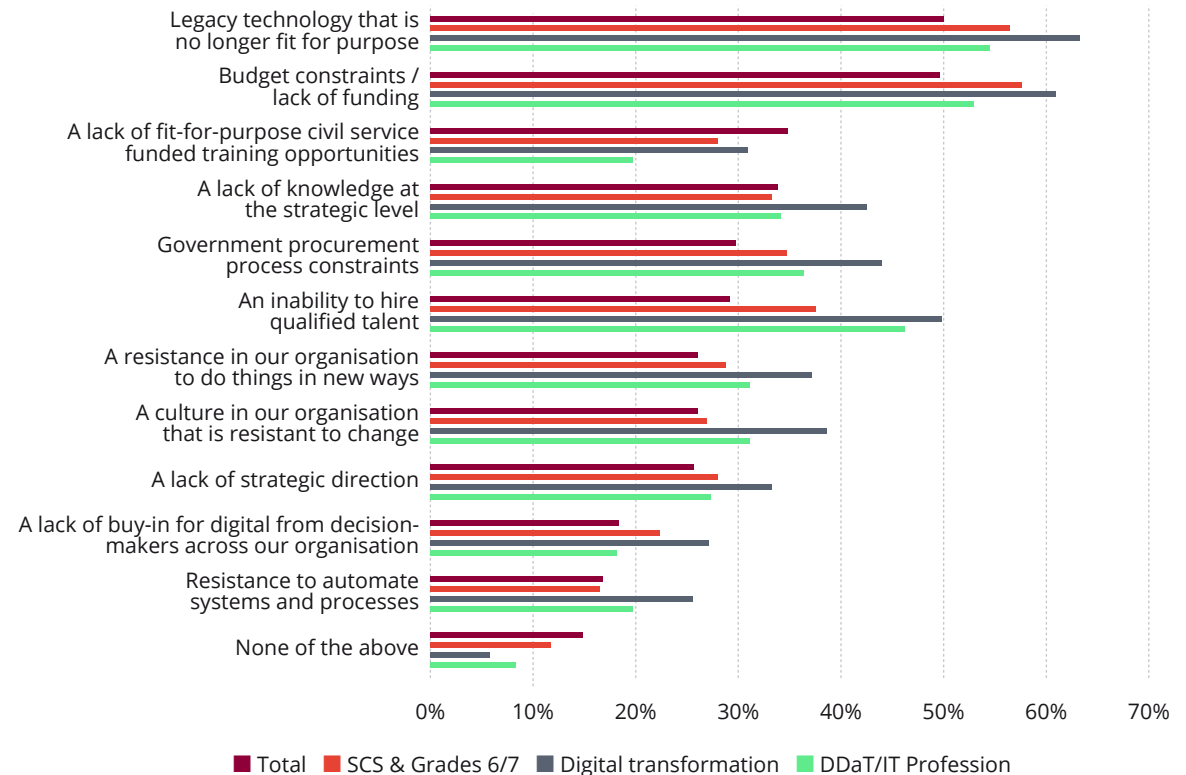
61% of civil servants working on digital transformation projects also consider budget constraints/lack of funding to be a significant barrier (as do 50% of civil servants overall)

50% of civil servants working on digital transformation projects say that an inability to hire qualified talent is a problem (compared to 29% overall)

Officials consistently raise three issues as holding back digital transformation in government – out-of-date technology in government, funding restraints, and a lack of training or skills.

When asked to identify the biggest barriers to using digital to improve public services, exactly half of respondents name 'legacy technology that is no longer fit for purpose'

Which of the following, if any, would you say are significantly holding you back from using digital to improve public services?





and budget constraints/lack of funding as the key issue facing government.

In a question where respondents could select as many answers as apply, both were selected by half of respondents (50%), with a lack of fit-for-purpose civil service funded training opportunities (35%) the third most pressing issue.

Senior officials cite budget constraints/lack of funding (58%) and legacy technology (57%) as the top two issues, as do DDaT and IT professionals, but in the reverse order (55% highlighting legacy technology and 53% budget constraints). These two barriers are the only ones to be chosen by more than half of respondents, with concerns over skills through an inability to hire qualified talent the third biggest factor named by these more senior officials (38%).

The officials working on digital transformation projects highlight the same three factors that senior leaders

do – but in even greater proportions. Nearly two-thirds (63%) say legacy technology that is no longer fit for purpose is the key factor hampering the use of digital to improve public services – higher than the 50% of respondents overall.

The transformation group also rate budget constraints/ lack of funding as a bigger issue than respondents overall (61% versus 50%) and an inability to hire qualified talent as a substantially bigger factor (50% versus 29%). Some 43% of those working on transformation projects also highlight a lack of knowledge at the strategic level as an issue, compared to 34% of the overall group, 33% of the senior group, and 34% of digital and IT professionals.

These key issues of legacy technology, budget constraints and a lack of training and skills are also the factors identified when respondents were asked to name the action their department or organisation should take to improve its ability to use technology to innovate



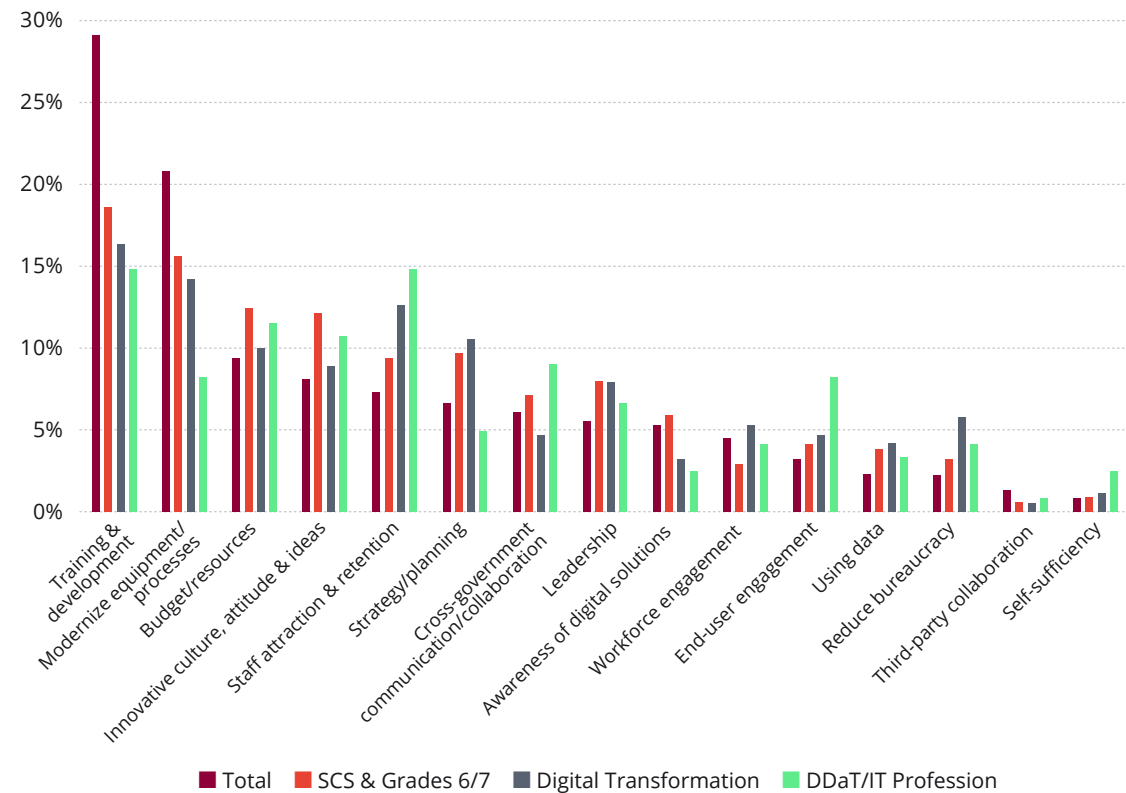
We're often failing to exploit opportunities for innovation by not having a broad enough conversation around it.

**Senior Civil Servant,
HM Revenue & Customs**



and transform public services. After grouping free text responses together by themes, three areas for action emerged: demand for training and development; the need for modern equipment/processes; and issues around budget/resources. These three issues were also top for senior officials, although staff attraction and retention cracked the top three for both those working in digital transformation projects (ahead of budget/resources restrictions) and those in the government's DDaT and IT professions, edging out modernising equipment/processes.

What single action do you believe your department/organisation should undertake to improve its ability to use technology to innovate and transform public services? (% by frequency of mentions)





Google Cloud comment

We recognise these challenges are prevalent across many organisations.

The digital skills gap has been a long-standing problem for UK businesses.

Now, fresh data has underscored that impact, with 81% of UK managing directors saying a lack of digital skills is negatively affecting their company.

Furthermore, the rapidly accelerating digital skills gap in the UK is contributing to a loss of over **£63 billion per year in GDP**, and while issues such as legacy technology and risk appetite play a part

there is a broader cultural shift that is required to develop an approach to innovation and change which is both sustainable and inclusive.

So legacy tech is an issue, but there's more to it than that – it's a culture challenge. The appetite for risk is low, but what we know is that teams who can embrace agility, manage change, use data to drive decisions and collaborate are most effective in transforming and responding to disruption.

And there doesn't need to be a fear of failure. Transformation doesn't mean

revolution – ripping out legacy and starting from scratch. Managed change is most effective, and incremental steps are key – our technology is open source, interoperable and able to work in complex technology ecosystems. Open source enables HMG to consider different ways of doing things, and ways to drive efficiencies as well as transform. By investing in skills to support moving away from legacy systems, you can achieve both objectives.





Civil servants think technology is key to unlocking public sector transformation and they are committed to innovate and optimise the way that public services are delivered.

86% of civil servants believe that it is their job to innovate and optimise the way that public services are provided – rising to 93% of senior officials

76% of civil servants believe that technology is the key to unlocking public sector transformation...

42% ...But less than half, believe that their department has the tools, resources and skills necessary to utilise technology in transforming the public services they deliver

The survey found a strong appetite among civil servants to embrace smarter and faster working to improve public services, and to use technology to go further in transforming government.

An understanding of the importance of innovation in how government provides public services is shared by all officials. Respondents overwhelmingly agree that “part of my role as a civil servant is to strive to innovate and optimise the way that we provide public services”, with 86% of respondents either agreeing or strongly agreeing – a proportion that rises to 93% among senior officials and is even higher among those involved in digital transformation (95%) and the civil service’s DDaT and IT professionals (98%).

A large proportion of all respondents also agree or strongly agree (76%) that technology is the key to unlocking public sector transformation. This is slightly lower among senior civil servants (74%) but higher among officials working on digital transformation projects (88%), and those in the DDaT and IT professions (90%).

However, there is less confidence among officials in both their own ability, and that of their organisation, to implement the required changes. Only 60% of respondents say they have intermediate, advanced

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[Government needs] to understand the possibilities that technological innovation could unlock – and have support to realise this ambition.

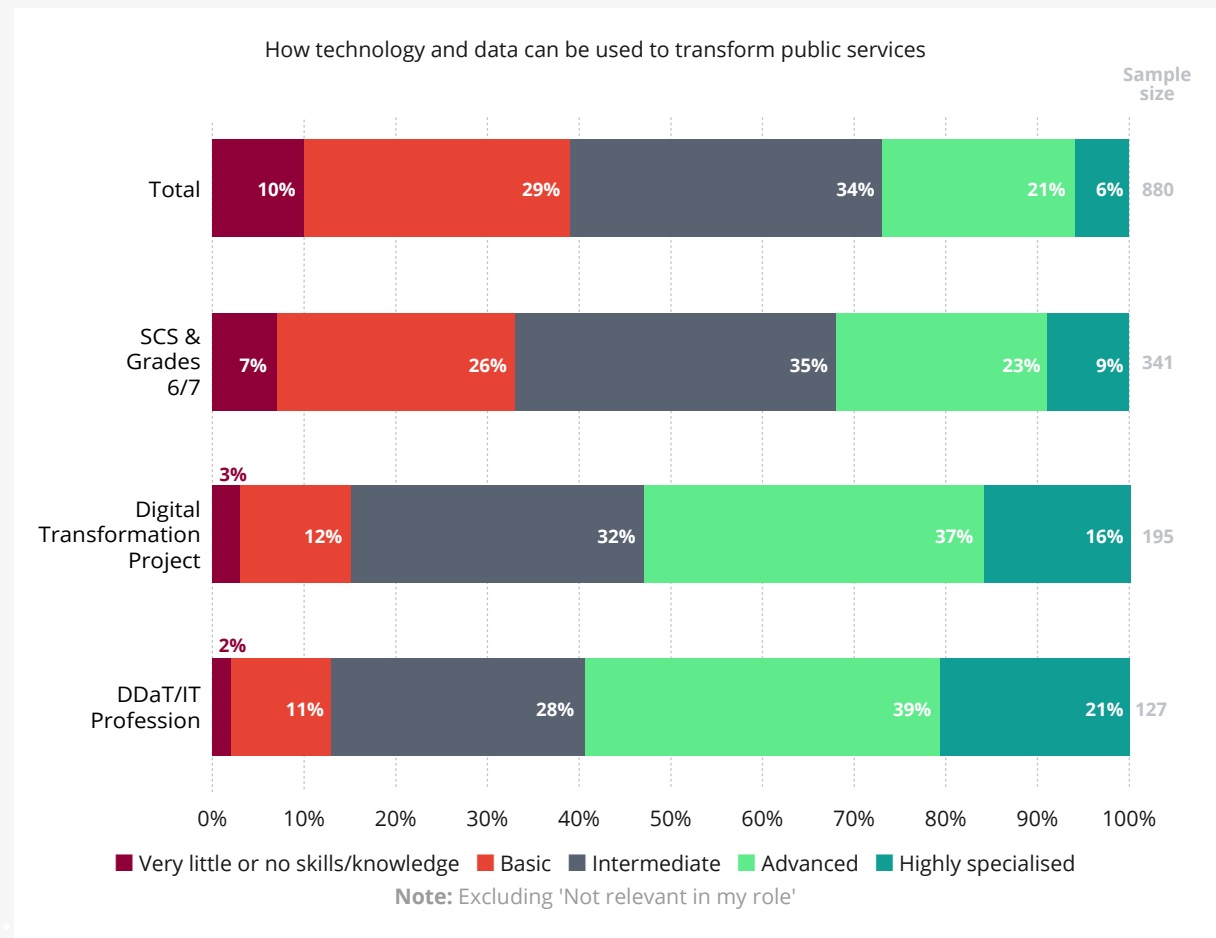
**Civil servant, (Grade 6),
Environment Agency**



or highly specialised skills and knowledge of how technology and data can be used to transform public services – although this rises to 67% of senior officials, 85% of those working on transformation projects, and 87% of DDaT and IT professionals.

And there is lower confidence among officials that their department has the tools, resources and skills necessary to utilise technology in transforming the public services they deliver.

Alongside the finding that half of respondents name 'legacy technology that is no longer fit for purpose' as a barrier to transformation, less than half (42%) of respondents believe that their department has what it needs in terms of digital tools, resources and skills – and confidence is even lower among senior respondents (40%). However, the levels of confidence are higher among both the transformation (52%) and DDaT and IT professionals (58%).





Google Cloud comment

This finding is a real positive and demonstrates what we know about the ambition and appetite of our public sector customers to transform. We've been proud to partner with central government and the broader public sector on key innovations that have delivered real and lasting change in public service delivery and outcomes.

Our goal is to make this more consistent through a collaborative

learning environment so that effective community knowledge sharing can benefit all frontline civil servants. Such an approach is also vital to ensuring that a) we can continue to deliver innovation and transformation, and b) we empower teams to own the plan and outcome, with a toolkit to support, rather than relying heavily on external knowledge such as consultants and contractors.

Great training to develop capability, rather than training on a specific proprietary product, empowers teams. Cloud training is more than a seal of approval – it can be a framework to increase staff tenure, improve productivity, and obtain other key advantages to support civil servants' ability to innovate and optimise the way that public services are provided.

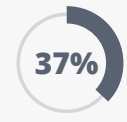




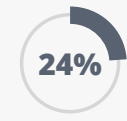
Limited understanding of more advanced technologies is hampering ambitions to make better use of digital and civil servants need to know what advanced technologies are, to know if they can be useful.



of respondents say they have at least intermediate skills in collaborating remotely in real-time with colleagues

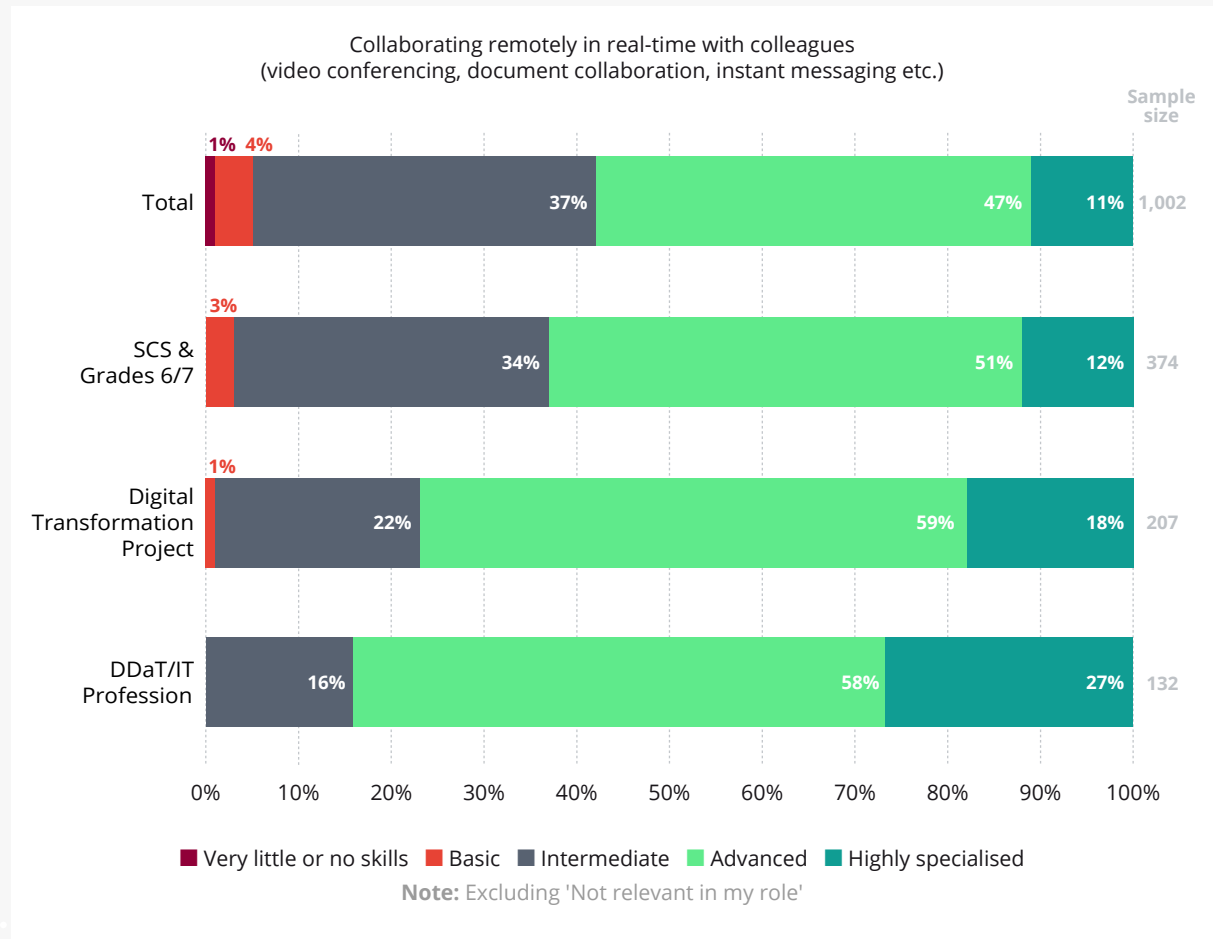


of officials say they have very few or no skills or knowledge in how artificial intelligence, machine learning or automation can be deployed to improve public service delivery. The same is true of 33% of senior officials



Less than a quarter, of civil servants agree that their department has the necessary skills and expertise in artificial intelligence or machine learning – and 23% of those in the SCS and at Grades 6/7 do

When asked to rank their digital skills across a host of different areas, civil servants rate their skills in using digital communication tools highest. Overall, 95% say they have at least intermediate skills in collaborating remotely in real-time with colleagues through tools like video conferencing, document collaboration and instant messaging – which rises to 97% of senior officials, 99% of those working on digital transformation programmes, and 100% of digital and IT professionals.

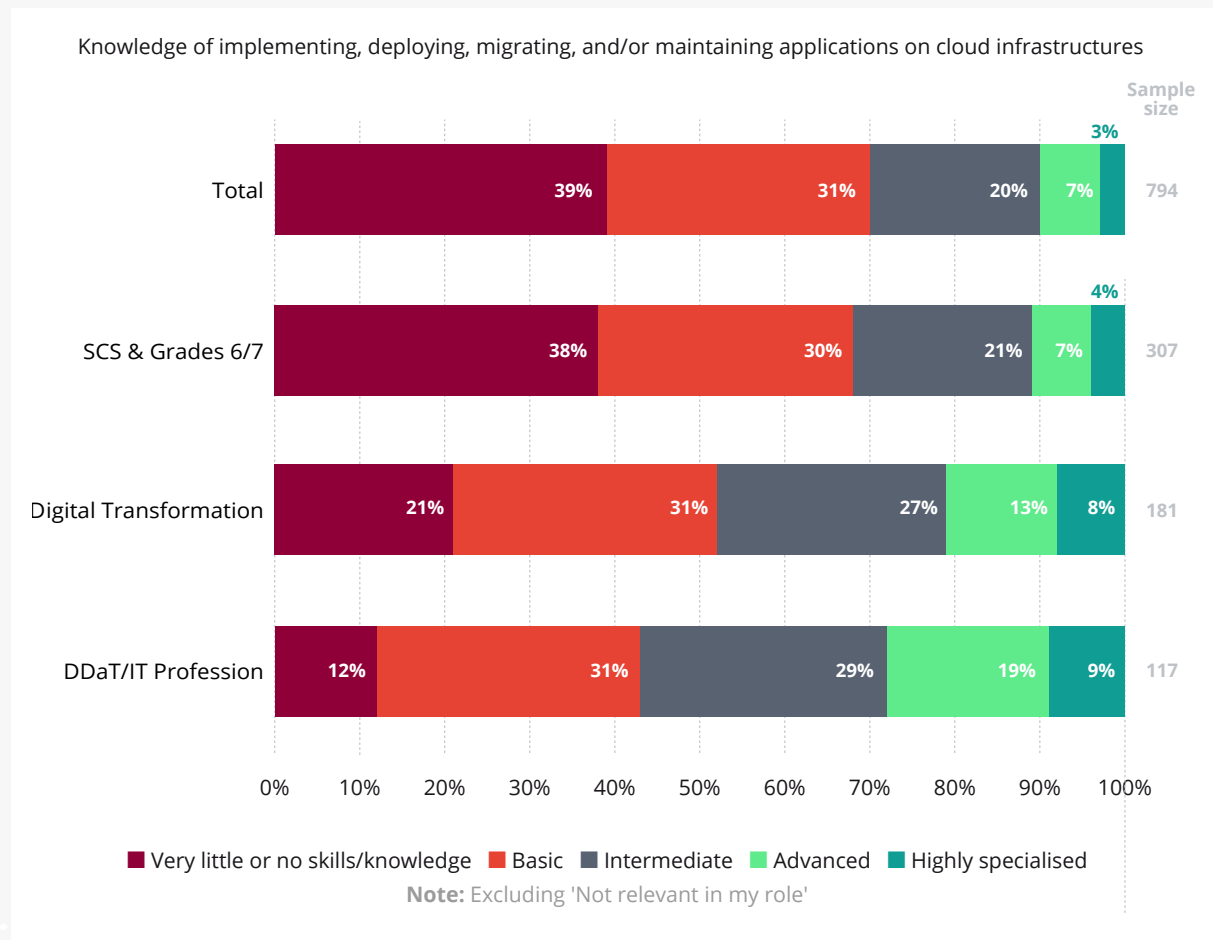




Three quarters of respondents (75%) agree or strongly agree that their organisation or department has the necessary digital communication skills – this being the highest rating that staff give to departmental capabilities.

Other areas where civil servants report strong skills include accessing and analysing data in spreadsheets, where four out of five (83%) say they have at least intermediate skills – rising to 86% among senior officials, 92% of those working on digital transformation projects, and 94% of DDaT and IT professionals. A similarly large proportion of officials overall (84%) say they have at least intermediate skills in data compliance and security – a vital skill that holds the key to the public's trust in the work of government – a proportion which again rises for senior officials (84%), those working on digital transformation projects (90%), and DDaT and IT professionals (95%).

However, skills begin to fall in other key areas of modern public service delivery – such as data access and analysis, or use of cloud infrastructure. Only 54% of respondents say that they have the same level of skill in accessing and analysing data in formats such as through statistical or data analysis software as they do in spreadsheets – a 29 percentage point drop – and the proportions are also lower among senior officials (59%, 29 points lower), those involved in digital transformation projects (61%,





31 points lower), and across DDaT and IT professionals (70%, 25 points lower).

Skills are also low in the technologies that will be key to public service transformation in the future, such as artificial intelligence, machine learning and cloud computing.

There is an understanding that to drive forward transformation of both policy and delivery, officials across government need an understanding of the potential benefits and uses of such advanced technologies.

As one senior HM Revenue and Customs figure involved in digital skills puts it: "It's really important to understand in principle what the tech does," adding: "I don't need to know how to use it. I just need to know what it does, so I can say, 'that would help me'. So I need to be able to talk to people who are able to do that stuff and say that would be really useful."

Similar comments are made by officials throughout the survey. One official working in corporate finance at the Department for Environment, Food and Rural Affairs says that a "lack of investment in training for staff" left them unable to "know what is possible" with technology. Another respondent, an executive officer in project delivery at the Environment Agency, calls for "senior level data analytics training or awareness" to provide an "understanding of what is possible and [then] inspiring everyone to achieve it".

These concerns are reflected in the survey findings. For example, over a third of overall respondents (37%) say they have very few or no skills or knowledge in how artificial intelligence, machine learning and automation can be deployed to improve public service delivery. Knowledge of implementing, deploying, migrating, and/or maintaining applications on cloud infrastructures is also low – 39% of respondents say they have very few or no skills or knowledge in this area.

The picture is similar for senior officials, 33% of whom say they have little or no knowledge or skills in how artificial intelligence, machine learning and automation can be deployed to improve public service delivery, and 38% of whom say they have little or no knowledge of implementing, deploying, migrating, and/or maintaining applications on cloud infrastructures.

Knowledge levels are, however, much greater among both those working on digital transformation projects and in DDaT and IT professions – but still nearly one-quarter (25%) of those working on transformation projects say they have little knowledge of how artificial intelligence, machine learning and automation can be deployed to improve public service delivery, as do 15% of DDaT and IT professionals. Similar proportions say the same about deploying, migrating, and/or maintaining applications



**[Government]
needs to keep up to
date with advances
in technology and
be more agile to
introduce new
technology with
relevant training,
so that it is adopted
and used by all.**

**Civil servant (senior
executive officer),
Ministry of Defence**

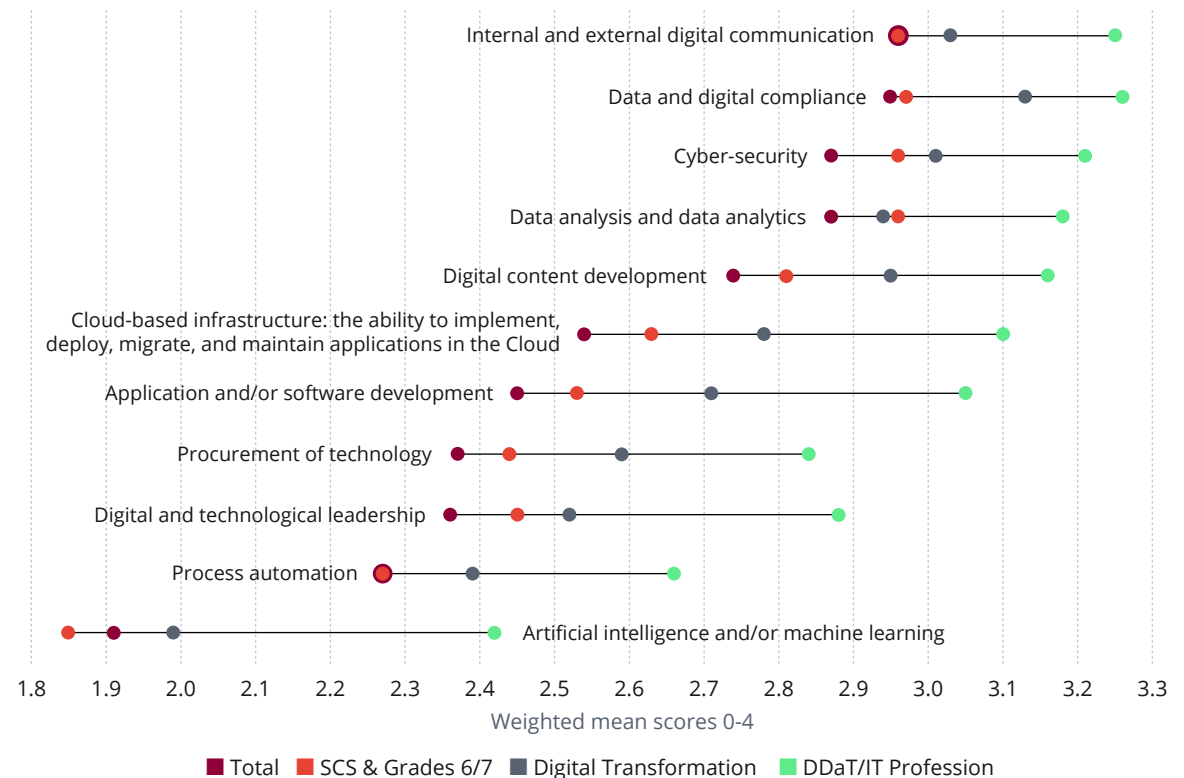


on cloud infrastructures (21% of transformation officials and 12% of DDaT and IT professionals).

Officials are much more confident that their department or organisation has the cloud skills it needs than they are in their own skills in this area. When asked to what extent they agree or disagree that their department or organisation has the necessary skills and expertise in cloud-based infrastructure, 48% either agree or strongly agree, compared to only 16% who disagree or strongly disagree. The same is also true of the senior group (51% agree or strongly agree versus 14% disagree or strongly disagree), transformation officials (61% agree or strongly agree versus 14% disagree or strongly disagree), transformation officials (61% agree or strongly agree versus 16% disagree or strongly disagree); and DDaT and IT professionals (61% agree or strongly agree versus 16% disagree or strongly disagree).

However, the balance is less positive for artificial intelligence and/or machine learning, where only 24% of officials agree or strongly agree that their department has the skills it needs in this area, compared to 28% who disagree or strongly disagree. Senior officials share this view (23% agree or strongly agree versus 29% disagree or strongly disagree), but transformation officials (33% agree or strongly agree versus 33% disagree or strongly disagree) and DDaT and IT professionals (49% agree or strongly agree versus 21% disagree or strongly disagree), are more positive.

To what extent do you agree or disagree that your department/organisation has the necessary skills and expertise in the following areas?
(Weighted Mean Scores where 0 = Strongly Disagree, 2 = Neutral and 4 = Strongly Agree)





Google Cloud comment

There are pockets of real innovation and advancement, however this data validates the wider reality that the public sector is a laggard in comparison to other industries. We want the public sector to flip that situation to become leaders in technology – well informed, well-versed and ahead of the pack when it comes to digital.

The lack of internal knowledge and skill means that knowledge about the art of

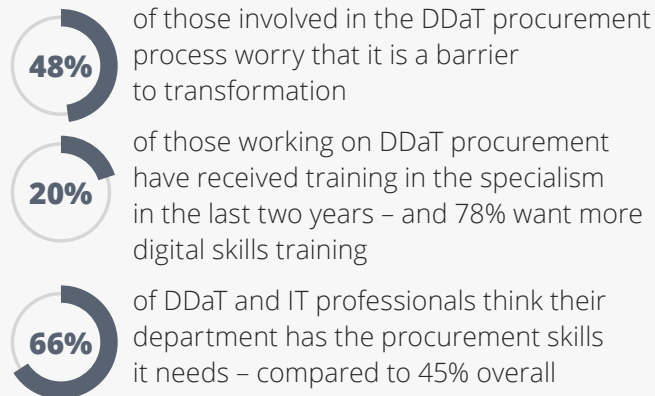
the possible is currently held outside of government and advised in. To support the civil service to become masters of their own digital transformation destiny, Google provides different fundamental and bite-sized learning to allow customers' staff to understand the art of what's possible in Google Cloud – and to explore the appropriate role-based training and certification before investing the time and effort in learning.

It is particularly important to train non-IT functions and the broader policy-making community about the potential of technology. Otherwise, government will not have the shared understanding and vocabulary to spark ideas and ignite transformation. When skills/ideas that are 'unlike' what a team is familiar with are put forward, there is a high potential for those ideas to be disregarded or misunderstood.





Nearly half of DDaT procurement officials worry procurement is holding back transformation, as do those working on transformation projects directly.



Procurement is key to how government can unlock digital transformation, because – as we have seen – legacy technology is viewed as a key barrier to transformation.

Improving the quality of purchasing for government is a major way this can be addressed, but respondents involved in the procurement process for DDaT highlight that they view procurement as a bigger barrier to transformation than the overall group. Of those involved

in DDaT procurement, 48% highlight government procurement process constraints as an issue, compared to just 30% of the overall group.

Procurement concerns are slightly higher for senior officials (35% name it as an issue significantly holding back transformation), and for those working in the DDaT and IT professions (36%) it was particularly noticeable among those working on digital transformation projects (44%).

Overall, less than half of all respondents agree that their organisation or department has the skills it needs in procurement of technology (45% agree or strongly agree versus 21% who disagree). Senior officials are slightly more confident that their department or organisation has the procurement skills needed (49% agree or strongly agree), as are – despite their worries about procurement as a barrier – those working on digital transformation projects (57%). The proportion is even higher among DDaT and IT professionals (66%).

Only one in five (20%) of officials involved in the procurement of DDaT have received internal or external training in procurement of technology within the last two years. Among this group, 78% would like more digital training – a figure in line with the overall response rate.

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[Government needs to] be less risk averse when it comes to procurement activity.

Grade 7 commercial and procurement civil servant, Food Standards Agency



Those involved in DDaT procurement rank higher than the overall sample in a number of areas that could make them key to digital transformation in the future.

For example, 91% of those involved in procurement either agree or strongly agree that technology is the key to unlocking public sector transformation, above the proportion in the overall sample (76%), for senior civil servants (74%), those working on digital

transformation projects (88%), and those in the DDaT and IT professions (90%).

Also, nearly half (46%) of respondents from procurement say that they have advanced or highly specialised skills in how technology and data can be used to transform public services, compared to 27% of all respondents and 32% of senior officials, behind only those working on digital transformation (53%) and DDaT and IT professionals (60%).





Google Cloud comment

One of the biggest barriers to removing legacy tech is a low risk appetite. A fear of failure – or making the headlines – leads many government departments to decide against bold change, the belief being that transformation equals revolution/ripping out legacy and starting from scratch. That's not the case. Managed change is most effective, and incremental steps are key. Our technology is open source, interoperable and able to work in complex technology ecosystems. Open source enables the government to consider different ways of doing things, and ways to drive efficiencies as well as transform. By investing in skills to support moving

away from legacy systems, you can achieve both objectives.

And, in a scenario where public services are resource constrained and budgets are a challenge, there's an even greater need to upskill across the civil service to become informed about the value of tech, what efficiencies can be delivered, but also how to procure in a competitive fashion as an 'intelligent customer' who is able to understand the terminology and benefits to strike competitive deals with technology providers.

There is a gap in the provision of senior non-technical training, and in strategy and procurement impact. When

evaluating training needs, Google Cloud takes a holistic and an organisational-level approach to support you on your digital transformation journey.

Google is committed to working closely with the customer to implement a learning plan that is well suited to different learning needs, and is aligned with the customer's overall learning and development strategies. We deliver training using various learning methods such as self-paced, on-demand, or cohort-based instructor-led training, and we take into consideration the integration of social learning, synchronous and asynchronous community knowledge sharing.





Civil servants from all professions and functions are keen to develop their digital skills.

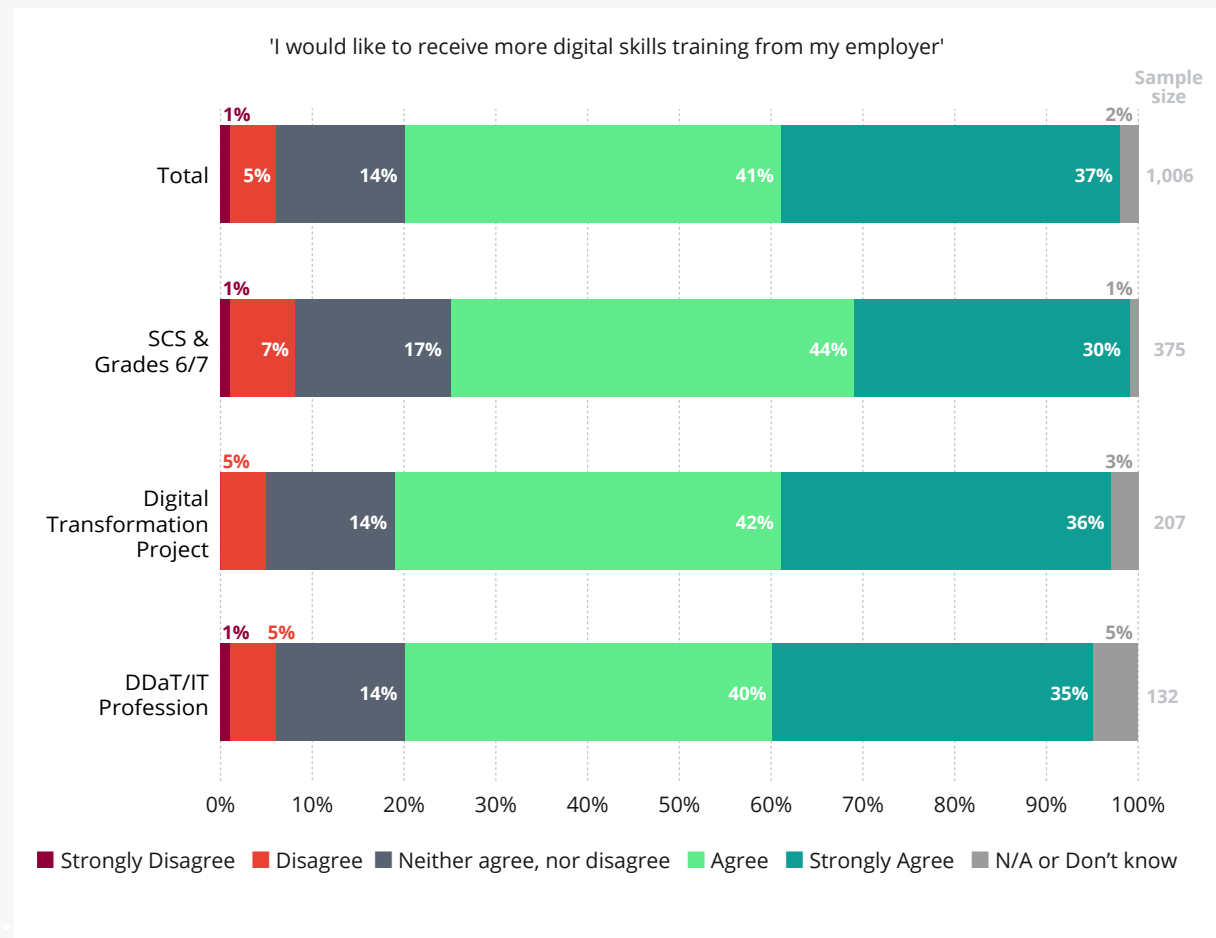
78% of civil servants would like to receive more digital skills training – this figure is matched by 78% of civil servants working on digital transformation projects across government

61% of civil servants who have taken part in either internal or external digital training over the last two years rated their training as either good (48%) or excellent (13%)

<5% Training in artificial intelligence and/or machine learning was received by less than 5% of civil servants surveyed, within the last two years

As we have noted already in the report, the most often cited action civil servants think their departments could undertake to innovate and transform public services is to provide more training and development opportunities.

A strong appetite from officials for extra training is demonstrated throughout the survey. More than three quarters (78%) of officials would like to receive more digital skills training, as would 74% of senior officials, 78% of digital transformation officials, and 75% of DDaT and IT professionals.

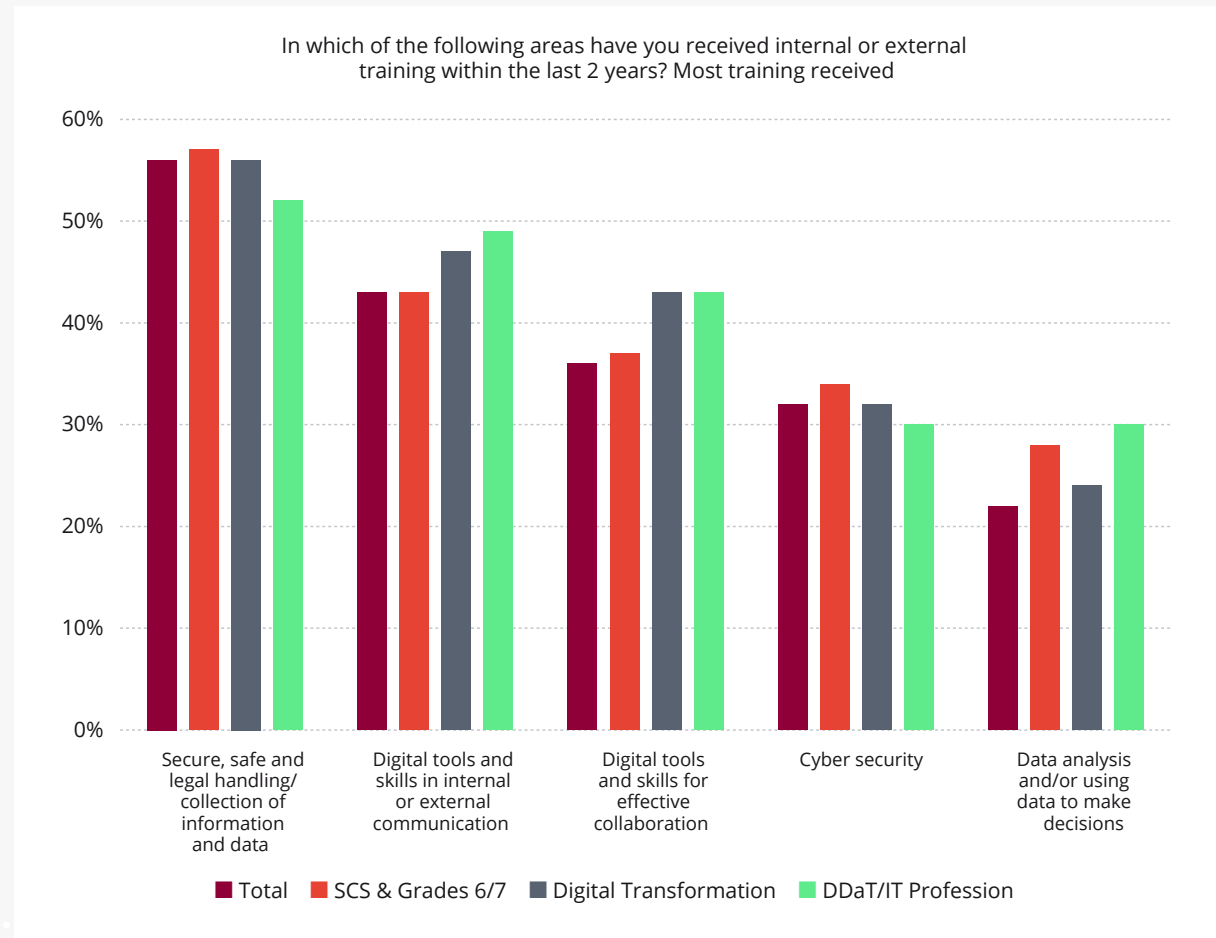




However, despite a clear appetite, nearly one in five officials (19%) report they have not received internal or external digital skills training within the last two years. This was the case for 17% of senior officials, 18% of digital transformation officials, and 19% of DDaT and IT professionals.

The top five areas where officials have received the most training in the last two years are: secure, safe and legal handling/collection of information and data (undertaken by 56% of respondents); digital tools and skills in internal or external communication (43%); digital tools and skills for effective collaboration (36%); cyber security (32%); and data analysis and/or using data to make decisions (22%). This may help explain why these areas come top in civil servants' view of their own skills – these top five areas of digital training correspond with the areas in which officials self-identify as having the greatest skills.

Some of the areas where officials have received the least training also tally with areas where skills are identified as lacking. For example, only 11% of officials report having received training on cloud-based infrastructure (the ability to implement, deploy, migrate, and maintain applications in the cloud) and less than one in twenty (5%) have received training in artificial intelligence and/or machine learning (either as a developer or a user). The only other





category where as few respondents say they have received training is in procurement of technology.

Officials rate much of the training they have received highly, with training in all 12 areas examined rated as either good or excellent by a majority of respondents.

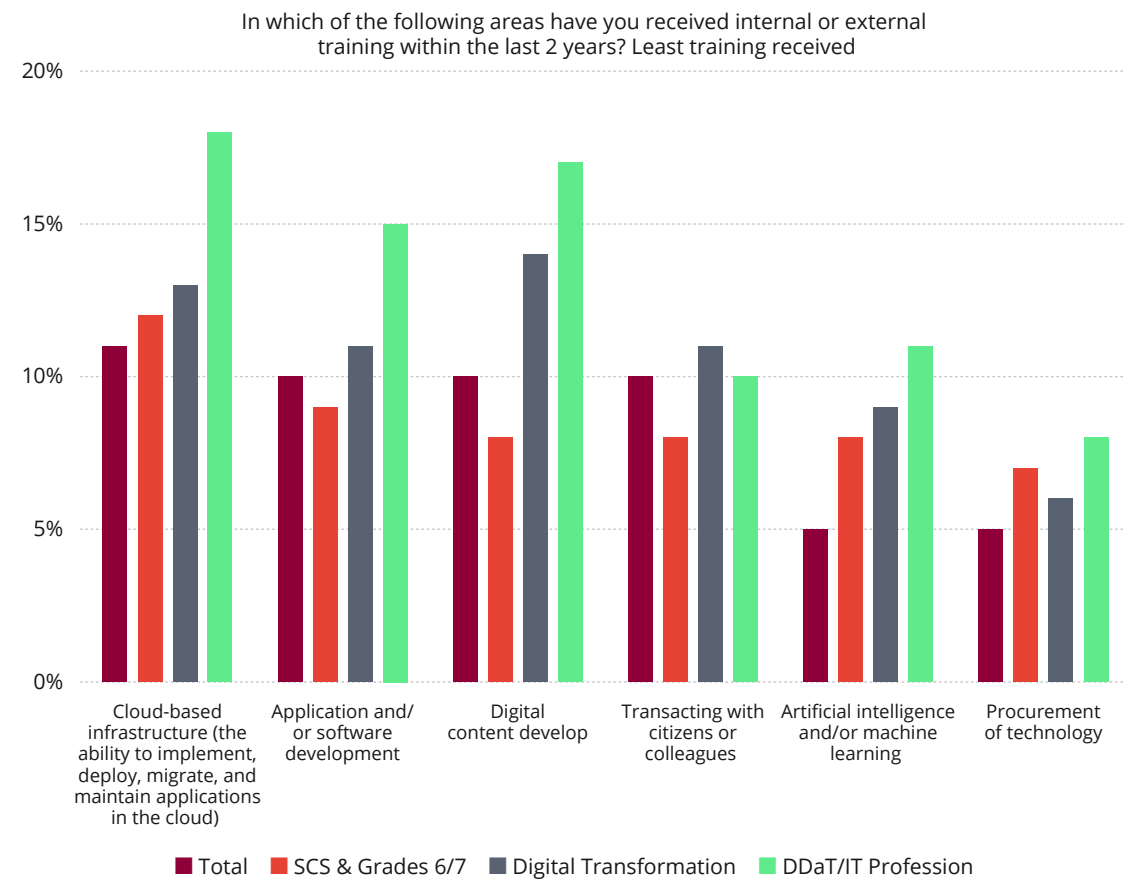
Interestingly, 76% of respondents say artificial intelligence and/or machine learning training was either good or excellent – despite this being one of the areas where they rate their skills the lowest.

Other high scoring areas include secure, safe and legal handling/collection of information and data (rated by 67% as good or excellent) and cyber security (rated by 63% as good or excellent).

Given that the survey results highlight digital tools and skills in internal or external communication as government's main strength, it is surprising that training in this area is not particularly highly rated, with just 54% describing it as good or excellent.

The lowest rated area of training according to civil servants is in cloud-based infrastructure, with 50% saying it was good or excellent, and 9% (the largest proportion in any training area) calling it poor.

These results are mirrored among senior officials, who also found artificial intelligence training courses to be





the best (74% of respondents found it good or excellent). This, along with secure, safe and legal handling/collection of information and data and digital tools and skills for effective collaboration, comprise the three most effective training areas according to senior officials. Training in cloud-based infrastructure is the only area deemed to be effective by less than half of the group (48%).

Those working on transformation projects also rate artificial intelligence training highest (83% rating it good or excellent), followed by transacting with citizens or colleagues (77%), data analysis and/or using data

to make decisions (75%), and secure, safe and legal handling/collection of information and data (70%).

For officials in DDaT and IT professions, training in data analysis and/or using data to make decisions is highest rated, with 76% labelling it good or excellent, followed by application and/or software development (74%) and secure, safe and legal handling/collection of information and data (74%). This group rates training in procurement of technology lowest, with just 50% saying it was good or excellent.



We need a culture that sees digital skills and literacy as fundamental for effective and efficient working.

**Civil servant (Grade 7),
Care Quality Commission**



Google Cloud comment

Government has a significant and timely opportunity to empower the civil service to embrace technology, feel comfortable operating at the forefront of transformation and better achieve their goals to deliver digital government.

It is clear that the appetite is there among civil servants, and it's extremely positive to see that through a number of initiatives – not least the Government Digital Strategy – that a concerted effort

is being made to meet this demand. Whilst some training has been good, it's not consistent, and not necessarily tailored to the needs of the public sector – ours included. But we are committed to focus on how to expand all opportunities for citizens and civil servants. Rather than try to fit a set of existing trainings to match a very specific need in the UK civil service, we want to listen to what departments need.

By comprehensively training staff, organisations will enjoy greater employee retention, reduced business risk, and greater operational improvement, all while accelerating their cloud adoption.

For organisations where cloud delivery is becoming the foundation for technology services, organisations can maximise the return on their investment in cloud by providing comprehensive training to their IT and line-of-business employees.





CONCLUSIONS

The digital skills of civil servants have clearly progressed in government in recent years. Nearly all civil servants say that they have good skills in using digital communication and collaboration – a legacy of the work done to boost skills as a result of the move to remote working during the coronavirus pandemic. The challenge now is to upskill officials in the areas where they need to unlock transformation.

There is clear demand for improved digital skills in government, with many survey respondents diagnosing skills gaps in their own organisations. This presents a real opportunity. As illustrated by the word cloud of responses to the free text question on what single action civil servants think their department or organisation should undertake to improve its ability to use technology to innovate and transform public services, there is a large demand for digital training to provide a better understanding of how technology can improve public services – as well as better technology to help unlock these changes. Boosting the skills of civil servants across government could be the catalyst that drives further digital transformation, and the wider benefits of greater digital literacy, capacity and capability – leading to better public services.

What single action do you believe your department/organisation should undertake to improve its ability to use technology to innovate and transform public services?





Google Cloud comment

There is a significant and timely opportunity to empower the civil service to embrace technology, feel comfortable operating at the forefront of transformation and better achieve their goals to deliver digital government, not least through the government's 2022 to 2025 roadmap for digital and data.

Our commitment to the public sector is now not just to create great partnerships, it is to focus on how to expand all opportunities, for citizens and civil servants. Our view is that this means that there's a real opportunity to make a difference and improve peoples' lives – our core values. Rather than try to fit

a set of existing trainings to match a very specific need in the UK civil service, we want to listen. Our consultation period is now open, and we want to hear from you to help you meet the challenges uncovered by this report, so we can deliver together.





RESEARCH METHODOLOGY



The survey was designed and carried out by Global Government Forum – the publishing house for civil servants around the world – supported by Google Cloud.

Fieldwork took place online between 25 April and 9 June 2022, and attracted 1,006 responses. The survey was disseminated via email to Global Government Forum's UK readers, and respondents were self-selecting. Unavoidably, respondents may be skewed towards those civil servants whose roles involve heavy computer use.

Survey participation was incentivised through Global Government Forum's survey participation donation scheme, whereby a sum of money is donated to charity for each completed response. The survey raised £3,039 for the Disaster Emergency Committee's Ukrainian Appeal.

The survey was anonymous, and appropriate steps have been taken to ensure that no individual can be identified based on their responses.

The results have not been weighted, and percentages have been rounded. The findings are statistically significant with a margin of error of +/- 3.09 points for the full dataset. Statistical calculations use the 95% confidence level, which means that we can be 95% confident that the results are within three points of the value given.

The survey findings section analyses sub-groups such as those in senior grades – the Senior Civil Service and Grades 6 & 7.

Some 5% of respondents are members of the senior civil service (SCS) and a further 33% are Grade 6 or 7 – between them, groups that make up the top 14% of the civil service workforce.

These are statistically significant at +/- 5.05 and +/- 3.90 points respectively, at the 95% confidence level.

Data on smaller segmented groups (for example government professions) will have a larger margin





of error due to small sample sizes, and care should be taken in making direct comparisons. Among the different professions, the largest single group of respondents – comprising 22% – are those in operational delivery roles. The next largest groups are policy staff (10%), digital data and technology staff (10%), and project delivery staff (9%).

A large majority of participants are aged between 42 and 57 (Generation X) – just 13% say they are 42 or younger (Millennials and Generation Z). The median age of civil servants is 45 years. Slightly more women than men took part, at 52% – broadly representative of the civil service itself.

For some of the survey questions, we have re-based the findings to exclude ‘this is not relevant in my role’ responses. Sample sizes will therefore differ.

Readers should note that the findings on segmented data should only be seen as indicative: while the whole-group findings are statistically robust, these sub-groups are smaller sample sizes and their data – while interesting and, we hope, useful – should be used to guide future research and discussion rather than as a single reference point for decision-making.

Thank you to all of the civil servants who took part in the survey.

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FURTHER INFORMATION

Further information on the findings of the survey, including departmental breakdowns, can be obtained by **contacting Google Cloud**.

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