HOUSE OF COMMONS

Public Accounts Committee

Oral evidence: Challenges in implementing digital change, HC 637

Thursday 23 September 2021

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Watch the meeting

Members present: Dame Meg Hillier (Chair); Dan Carden; Sir Geoffrey Clifton-Brown; Peter Grant.

Gareth Davies, Comptroller and Auditor General, and Marius Gallaher, Alternate Treasury Officer of Accounts, were in attendance.

Questions 1 - 77

Witnesses

I: Alex Chisholm, Chief Operating Officer, Civil Service, and Permanent Secretary, Cabinet Office; Joanna Davinson, Executive Director, Central Digital and Data Office; Tom Read, Chief Executive Officer, Government Digital Service; Angela MacDonald, Second Permanent Secretary and Deputy Chief Executive, HMRC.

Written evidence from witnesses:

– [Add names of witnesses and hyperlink to submissions]

HOUSE OF COMMONS

Report by the Comptroller and Auditor General

The challenges in implementing digital change (HC 575)

Examination of witnesses

Witnesses: Alex Chisholm, Joanna Davinson, Tom Read and Angela MacDonald.

Chair: Welcome to the Public Accounts Committee on Thursday 23 September 2021, where we are looking at the very knotty and longstanding issue of how well Government are addressing the challenge of implementing digital change. Our lives are increasingly lived online and, for the younger generation, that is the complete norm. Many of the databases that Government use are not really geared up to modern technology and some date back to the 1960s and 1970s, so there is a huge, long-term and long-tail legacy for Government. It is almost unique among organisations and very different even to large financial institutions, for example.

Today, we want to get to grips with some of the technical issues here, but also with the potential benefits for Government and the disbenefits of not acting, where we can see identifiable savings for the taxpayer, and better efficiency across Government. One of the other issues that we often touch on in this Committee is the necessary skills in Government, and we are pleased that one of our witnesses is heading up one of the specialist areas in Government on digital, to make sure that we try to get that through the Civil Service, so we will be looking at that as well.

I am really pleased to welcome in the room today our witnesses: Alex Chisholm, who is the permanent secretary at the Cabinet Office and chief operating officer of the Civil Service, Joanna Davinson, who is executive director for the Central Digital and Data Office and the person who professionally leads all of this change through Whitehall—just a small task, there—and Tom Read, who is the chief executive officer of the Government Digital Service, which is pivotal to making these changes. In the past, when we have looked at this, it has almost felt like it sits aside from what Departments do, so there is another challenge about how Whitehall operates.

I am really pleased and thankful that Angela MacDonald is joining us online. Thank you very much for squeezing it into your very difficult and packed agenda, when you are not in London today. She is the second permanent secretary and the deputy chief executive of HMRC. Ms MacDonald is here because HMRC is undergoing one of the largest, if not the largest, digital change programmes in Europe in the public sector. It is something that we have been talking to HMRC about since what feels like the inception of this Committee, but certainly since I have been a member over the last decade.

I know that Sir Geoffrey remembers it from his earlier service on the Committee.

I am really pleased to welcome you all here and I am hoping that we can cut to the chase, acknowledge what the issues are, and try to find out between us whether there are options and solutions.

Q1 **Peter Grant:** Good morning to all our witnesses. I will start with Mr Chisholm. As permanent secretary to the Cabinet Office, why do you think that Government have always found it so difficult to implement digital change successfully?

Alex Chisholm: It is good to see you all this morning. I would say, by way of answer to that, first of all, that this is a very strong Report from the National Audit Office and it contains a lot of key learnings for all of Government. We are very keen to make sure that the lessons it rightly draws from our previous experience are properly absorbed across Government, and this session too will help with that.

The Report, I think correctly, acknowledges, as the Chair did in her opening remarks, that Government is a very tough environment for digital projects, partly because of what we call the brownfield site. There is a lot of legacy—previous systems and old data—which sometimes stands in the way of progress. It is also one in which there are live services. You are not building something brand new, but often building on top of existing operations, with live customers who depend on those services. They have to operate very successfully and reliably.

Of course, the scale and complexity of what we try to do is beyond comparison with anything in the private sector and, very often, those services are unique. They do not have a private sector comparator, and so you cannot simply say, "I will have one of those, please. Let us introduce it." That does require a degree of innovation.

Those are the key factors that make digital projects in Government exceptionally challenging. That said, again as the Chair intimated in her opening remarks, there are huge benefits that come from digital projects in terms of providing a better experience for users, lowering the cost of operations, and making it easier to change.

Q2 **Peter Grant:** Who has overall responsibility for digital delivery across Government? In the same way as the Treasury is responsible for financial management across the whole of Government, who is responsible for co-ordinating all these digital projects across each Department?

Alex Chisholm: That is quite a helpful comparison, if I may say so. In the same way that the Treasury provides an overall control, although individual accounting officers have a delegated responsibility for that, that is more or less the way of thinking about digital. It is clear that all Government services are digital today. There is not a Department or an arm's-length body that does not require digital expertise or rely on digital technology and data to do its day-to-day business and to deliver services to the public.

There is no sense in which digital is at one side. It is fundamentally embedded in everything that happens across Government.

That said, it is important that there is co-ordination from the centre, and that comes in two main forms. One is led by Joanna Davinson, on my left here, from the Central Digital and Data Office. That is there to provide standards and assurance; to provide an overall strategy for digital, data and technology, including its use of data and legacy; and to make sure that, overall, we have the capabilities we need in order to deliver successfully.

On my right, Tom Read heads up the Government Digital Service, which provides the products and services that are used commonly across Government, including GOV.UK, with its 17 million weekly users, but also key products like Pay and Notify, and new ones that we are developing, which I hope we will speak about this morning, such as the single sign-on.

Joanna is there to make sure that, across the piece, we have the necessary functional capabilities, standards and assurance, and Tom and his many colleagues in GDS are there to make sure that we have brilliant products and services that mean that we do not have to duplicate right across Government and do, many times over, something that is better done once and well.

Q3 **Peter Grant:** I want to come to Mr Read briefly. Mr Read, the NAO Report tells us that the Government set 11 different technology and digital change strategies in the last 25 years, including three in the last four years. Have those strategies helped or has everybody been so busy writing the next strategy that they have not concentrated on doing their job?

Tom Read: That is a very good question. The Report highlights that there are common themes over the last 25 years in the strategies. I am not sure that that would be very different in a private sector organisation. I spent most of my career in the private sector, and the digital and technology strategies are broadly the same: you need to modernise your legacy, to start adopting common technology rather than building it yourself, where you do not have to, and to channel shift online. When I worked in media, it was exactly the same story.

To answer your question more directly, the strategies have helped. It is very important to make sure that everyone knows which way is north. What have been more important over the last 10 years are the more specific standards that have been put in place, initially by GDS and now owned by Joanna's organisation, which tell CIOs across Government what good looks like, where the red lines are around the sort of technology that you should buy, what you should outsource and what you should keep closer.

I genuinely think that we have made significant steps over the last 10 years to make Government technology and digital services better for citizens and cheaper for Government, but we have an awful long way to go.

Q4 **Peter Grant:** Picking up on your last remark, I have no doubt that you mean what you say, but from our point of view we are still looking at projects that have been initiated very recently—certainly within the last 10 years—where the failures seem to be just as bad as they were 20 years ago. Do you understand why a lot of Members of Parliament and, I suspect, a lot of people outside Parliament can see all these strategies, announcements and good intentions, but they still see the projects failing as regularly and sometimes as badly as they did before? Are you able to look at it from the point of view of somebody who is not part of the machinery in terms of the standard perception out there that something is still going badly wrong with the way that Government handle their technology change?

Tom Read: That is fair, and I echo what Alex said earlier. The NAO Report is extremely good and very accurate. It is difficult to argue with any of the core points in there.

The main findings that it has and that we need to keep learning from are around technology being selected way too early in the programme. Before we really understand the problem that we are trying to solve, we lock that in too early with our big supplier contracts and are then unable to pivot. Those are the key findings that do keep happening.

The Report does not mention all the successes we have had, and there are many. If you look at work in GDS and the Notify platform that we put in place five or six years ago, we have had millions of notifications go out for things like Covid test results, which are now done seamlessly. That sort of success goes under the radar. That said, I do not, in any way, disagree with your point that we need to get better at the big programme delivery around digital.

Q5 **Peter Grant:** I want to look now at the concept of digital leadership, which is very prominent within the NAO Report. If I come to Mr Chisholm first, what is your assessment of the number of people within the Civil Service who could genuinely be described as digital leaders today?

Alex Chisholm: Again, I agree with the importance of the point. There are about 20,000 digital specialists—people who identify as members of the digital, data and technology function—which compares to over 450,000 civil servants in total. That underestimates the number of people who have digital expertise and, particularly on your point, digital leadership. For example, I am not a member of digital, data and technology, but I ran three different digital businesses, so I have quite a lot of experience in that. Both Tom and Joanna have come from working in the digital industry, so we have a lot of expertise available in Government.

We have also invested a huge amount of time and effort over recent years in enhancing the capability and the skills that we have, not only within the digital, data and technology function but across the wider leadership. We recognise that the top of the Civil Service—the approximately 5,500 members of the senior Civil Service—are people who all need to have digital

and data skills. We have been training them this year with a data masterclass, to give people great expertise and understanding in that. We are now embedding digital and data capabilities and training within the standard SCS assessment and development programme, so it is incredibly important.

Q6 **Chair:** When you say "SCS assessment", do you mean "senior Civil Service"?

Alex Chisholm: Senior Civil Service—thank you very much and apologies for the acronym.

That is not only for the leadership of today but also the leadership of tomorrow, so we have redesigned the curriculum for the fast stream programme, for example, and some of the other talent schemes across Government, to make sure that digital and data skills are absolutely embedded—not just a knowledge of how coding is done but, much more importantly, understanding the potential for using technology and data to transform core business operations and to think strategically about the opportunities in the future.

Q7 **Peter Grant:** I suppose a reaction to that response might be that, if you genuinely have 20,000 specialists, even in an organisation as big as the Civil Service, surely that is more than enough people to know what they are doing and to not be having one disaster after another, with systems that are almost guaranteed to fail from the way they were set up.

Is there an issue about what you would describe as somebody with digital skills? Is that the same as somebody who has the skills necessary to successfully lead and implement a significant digital transformation programme? I could say that I have digital skills, because I can send emails from my iPad, but I would not know where to start if you asked me to design a major new system.

How many of those 20,000 have all the skills that were identified as necessary by the NAO, to whom you could say, "Take this project and lead it through to a conclusion"?

Alex Chisholm: Let me start with an answer, before I turn to Joanna to add a few things that she would like to come in on. First of all, to give you the overall picture, I think it is right and understandable that the NAO, in its Report, has gone back over some troublesome projects in the past and extracted lessons from those. I would do the same in its position, but look at the overall number of projects across Government. We assessed, for example, in the last year, over 230 digital and data projects across Government, according to a common set of standards and criteria. Most of those are proceeding extremely smoothly and well.

These are not just ongoing projects. If you think about the big deliverables that Government have had to deal with over the last few years, the Chair will remember, as will you, Peter, the hearings we had in readiness for the EU exit process. Sixty-five systems had to go live by a hard, fixed date. All

of those did go live and went live successfully. We had a downtime on one system of an hour and a half, and everything else worked successfully. That is a massively successful digital programme of delivery.

In response to Covid, we were able to put in place, at speed, the furlough support scheme, which has been so important, the vulnerable persons scheme supporting vulnerable people, and the ability to deal with a 20-fold increase in universal credit in the space of three weeks. All of those reflect successful, vital digital delivery. Those of us—everybody in this room, I am sure—who have had vaccines will have noticed that the booking and scheduling of those vaccines went extremely smoothly and well. That was, again, a new, successful digital delivery. We do a lot of things extremely well in the digital domain, and our capabilities have been hugely enhanced.

Joanna Davinson: The demand for digital skills is increasing, and the supply does not always keep up with the demand. It is a growing requirement not just in the public sector; the private sector is also seeing a real increase in demand for these skills.

If we look back 10 years, we in Government had relatively little in-house digital capability. Most of our technology delivery was outsourced to major companies, so we have come quite a long way in the past 10 years in developing in-house capability. Even in the last three and a half years since I have been in Government, the number of people we have who identify as being part of the digital, data and technology profession has gone up from circa 15,000 to 20,000.

That said—again, this is in common with the private sector—we experience shortages of key skills, such as architects, software developers and delivery leadership. We have in place programmes specifically to address how we increase our capability at that senior, very experienced level. Progress has been made over the past few years but there is more to do on that.

For example, there are specific programmes in individual Departments around improving our technology skills. I can see Angela nodding, because one of the key programmes is in HMRC, where we are looking at how we shift the balance of our digital, data and technology skills, so that we can substitute at the more experienced end, where we are still a little too dependent on external suppliers. I do not know, Angela, whether you want to say a word about the technology sourcing programme.

Angela MacDonald: I would also recognise a number of the things that the Report talked about. Education needs to happen from the bottom of the organisation to the top. For instance, HMRC's executive committee comes together every month to have a teach-in on a technology topic. Last week, we were doing SAP, which is one of our core IT systems. Technology cannot be the province of simply the CDIO any longer. The entire leadership community needs to be competent and able to ask good questions and know what they are talking about, through to the activity we are doing with new colleagues and apprenticeships.

We are undertaking a big technology sourcing programme to bring in house a number of our technologies that have been outsourced for more than 20 years. Part of that is about enabling us to have flexibility and futureproofing of our platforms, but it is also critical that we have the skills and capability to be good customers of those IT suppliers and understand how we not only get the stuff in, but also maintain it and make sure that it is to standard.

That is not a small undertaking. That is nearly half a billion pounds in annual running costs of IT supplier spend that HMRC has, but if we are going to be able to deliver, and continue to deliver, because HMRC has done some fairly major things very recently, strong but competent and capable control of our IT estate is vital.

Q8 **Peter Grant:** I want to finish for now with another question for you, Ms Davinson. Why is it that the digital leaders within Government find it so hard to make their voices heard when these projects are being put together and launched?

Joanna Davinson: That is something that is changing. As Ms MacDonald said, there is increasingly a digital voice within executive teams across Departments. If I reflect on my own experience in the Home Office, where I was CIO for three years, I was on the executive committee and had the opportunity to directly speak about digital, data and technology matters at that level. Over the past two or three years, most Departments have published digital, data and technology strategies, which have been through their executive committees and boards.

It is improving. As an example of that, the risks around delivery, such as the challenges with legacy and cyber, are increasingly being discussed at executive and departmental board level. I certainly experienced that in the Home Office, and I know, from talking to colleagues, that it is becoming much more prevalent. That is because we now have, in Departments, more non-exec directors who have a digital, data and technology background. That is really helping. The audit committees have been key as well in highlighting and pursuing things like legacy and cyber risk.

Q9 **Chair:** When you talk about audit committees, are they the ones with outside people on them or internal audit committees?

Joanna Davinson: They are the audit and risk committees that each Department has, which are a mix of executives and generally have non-execs on them.

Q10 **Chair:** I suppose I am really asking whether you are bringing in non-exec expertise.

Joanna Davinson: Yes, we are. That has really helped and I have seen a change over the three and a half years that I have been in Government. I would say that, when I first arrived, it was quite difficult to get digital, data and technology on to the board-level agenda. Now I would say it is quite a regular event, so that is changing.

Q11 **Peter Grant:** It is encouraging to hear that the executive of a Department is talking about the digital strategy in general or looking ahead to potential digital risks and so on. That is good to hear, but, when we are looking at a specific project that is being considered, is there still an issue that the people with the digital expertise struggle to be heard above the finance and project management people? Is a cultural or structural, organisational change needed, or is it simply that there are not enough people at top levels who understand what is needed?

Joanna Davinson: I would say it is more of a cultural thing than a structural thing. We are on an improving path, but we have a way to go. All the things that we have talked about now are the things that we need to keep pushing forward with in order to develop more of that board-level capability and keep digital high on the agenda.

Alex Chisholm: Could I just add a point about the extent to which the centre is able to hold Departments to account in this area? As you know, we have just greatly increased the number of major projects by making sure that all those that meet a certain minimum size and criteria are on it. That is now over 230 projects—all published, by the way, so you can know all the details of those.

Quite a number of those—25, in fact—are digital or information and communication technology projects. In the last year, we have moved from 7% of those being in the good area of green or amber/green to 32%, so that has been a big improvement, and it is evidence of the way in which we are focusing on this and applying a lot of expertise from the centre to test and assure the quality of departmental programme delivery here.

The Infrastructure and Projects Authority now has a digital director. Joanna and I sit on these MPRG review processes as well as the Cabinet Office controls, which apply to all major procurements. Again, the digital element within that is very significant and applies to all those big, external procurements that are so vital to our digital delivery.

I do feel that the quality as well as the stringency of the scrutiny from the centre has enhanced, and that should help with safe and timely delivery of digital programmes in the future.

Joanna Davinson: This year, we have put in place a new sub-board of the Civil Service board, which is the digital and data board. This is a permanent secretary-level board, chaired jointly by Jim Harra, who is chief executive of HMRC, and Paul Willmott, who is our lead non-exec around digital, data and technology. The thing that I have found really encouraging there is that the permanent secretaries are engaging in it. It met last week and it was a very rich and full conversation.

There is quite a lot of evidence that the senior leadership across the Civil Service is getting it, coming aboard and recognising the need to develop its capabilities in digital and data.

Q12 **Sir Geoffrey Clifton-Brown:** Good morning. Going back to Mr Grant's original question, Mr Chisholm, comparing the Treasury with yourselves in terms of being in charge of digital strategy, maybe it is because the post of Chancellor of the Exchequer has been around for several centuries, but it does not quite seem that there is the central Government co-ordination on digital that there is on finance.

You made the very apt comment that each Department has delegated responsibility for finance, as it does with IT, but the remarks you made just now do not seem to quite back up, when we in this Committee see all the horrors that we see of IT programmes going wrong, that this central Government oversight by your Department has the same sort of writ that the Treasury has over finance in each Department.

Alex Chisholm: It is fair to say that there are differences in maturity. As you rightly observed, the system of public scrutiny of the accounts goes back hundreds of years, whereas the central digital functions are not more than a decade old, and we have made some relatively recent enhancements to that. Indeed, the Central Digital and Data Office is not even a year old. That is certainly true for scrutiny, but there are some other important similarities.

One of those is that one of the systems that the Treasury controls is around managing public money—the Green Book and the Orange Book etc. Again, we have begun to introduce that approach much more strongly into the digital domain. There is now a specified functional standard and a lot of tests that are applied routinely. If you do not pass those tests, your project cannot be approved.

We have also tried to rely increasingly on making sure that there is deep, embedded expertise within Departments. When I look back over a number of the less successful programmes in the past, you can see that, typically, they have been excessively outsourced, and that the internal capability—the client function within Departments—has been very thinly resourced. That has been a problem and has led to a dependence on external experts, which has not always worked out well.

We have really tried to enhance departmental capabilities as well as our central functions within that. Does that help to answer your question?

Q13 **Sir Geoffrey Clifton-Brown:** Let us come on to the next question and perhaps turn to you, Ms Davinson. You quite rightly referred to this new permanent secretary group as a sub-board of the main Civil Service board. I am not quite sure whether the meeting that you had this week was the second or third occasion that it has met.

Joanna Davinson: The second.

Q14 **Sir Geoffrey Clifton-Brown:** How long has it been in existence?

Joanna Davinson: We initiated it in April this year.

Q15 **Sir Geoffrey Clifton-Brown:** The whole thrust of the Report is that the

most senior management—permanent secretaries—needs to understand the scope of these vast projects before it even initiates them. While I am sure that, in this room, we have people who really get this whole digital transformation, I am absolutely certain that we have permanent secretaries out there who do not understand it. What more can we do to make sure that the very senior leadership in each Department absolutely gets this?

Joanna Davinson: I agree with you, and there are permanent secretaries who would agree with you as well. There is a recognition among the senior leadership of the Civil Service that it needs to develop these capabilities and skills, so I am not seeing any resistance to that. We all have a history. I have 40 years' experience in digital, data and technology. Most permanent secretaries do not have that, so how do we bring people through and along with us?

We are doing quite a lot with the current group of permanent secretaries in terms of providing opportunities to upskill. Ms MacDonald has talked about what they are doing within the HMRC board. You will find similar things happening across other major Departments, and I certainly know that we are doing it in the Home Office. There are some central programmes. Mr Chisholm has already talked about the data masterclass, which had an extraordinary take-up. As soon as we initiated it, perm secs signed up, so there is a real appetite to consume this and to learn. I acknowledge that we need to do more to help people build these capabilities and skills.

Q16 **Sir Geoffrey Clifton-Brown:** Mr Chisholm, is there anything that you can do in your position to make sure that every single permanent secretary is trained up to a reasonable level? If there is a willingness, as Ms Davinson says, to do this, that is a good start, but it is not a good start if they do not have the knowledge. What can we do to improve the knowledge base?

Alex Chisholm: We absolutely are enhancing that. Just to give you a further example, I sponsor the top-level programme for the permanent secretaries of tomorrow, who are currently DGs or being trained up.

Q17 **Chair:** There is an assumption that the permanent secretaries of tomorrow are currently DGs or all in the system.

Alex Chisholm: Some of them will be. That is absolutely the case.

Chair: I jest a bit, but the mindset is evident.

Alex Chisholm: Yes, but if we were not developing our talent you would be rightly criticising us for not doing that, so we are doing that. The point that I wanted to make is that, in that programme of training, which runs for the whole year, digital transformation is one of the core themes, because that is one of the things that we recognise is going to be essentially important for the skillset of the leaders of tomorrow. We are doing that this year and that is the programme that we are actively engaged in.

If you look at the level at which the top digital expert is, it would have been, a few years back, director or, in some Departments, even deputy director. It would have been the IT department. That is so not the case now. If you look at the big Departments, HMRC, MoD or DWP, the top digital person is a member of the executive team as a director general, which has really helped.

Joanna was rightly emphasising how we are very answerable to our boards. Those are a big part of life in Government Departments and have been for the last 10 years or more. Every board has embedded digital expertise, and every audit, risk and assurance committee includes digital experts. It is much more part of the daily scrutiny and discussion, and the sense in which, as you shape your plans, it is not an afterthought or a specialist domain, but something that all of us need to understand and think about.

Q18 **Sir Geoffrey Clifton-Brown:** When are we going to get to a situation where we have a Government digital and information strategy?

Alex Chisholm: We have a lot of the elements of that. We do not have a single document. Just to bring out some of those, you will have seen the declaration on Government reform, which was published in June. There are a lot of digital commitments within that. You will have seen the national data strategy and a lot of statements and speeches from Government Ministers, including Minister Lopez last year at techUK. You will have seen the reports we published from the Digital Economy Council.

We have not put all of that into a single Government digital strategy, and we are looking at the merits of doing that. As Peter Grant was saying earlier, a strategy itself is not necessarily the cure to all known evils, and the NAO Report documents a number of very good strategies in the past that have not been fully effective in driving progress, but, given how centrally important it is to this Government's priorities about delivering better services to end users, there is scope for bringing that all together in a single place, and we are looking at that now.

Q19 **Sir Geoffrey Clifton-Brown:** Ms Davinson, I have two quick questions for you, please. You talked about skills shortages in Government. Time and time again on this Committee, we have heard of skills shortages in IT. What are you doing to bring forward specialists from universities and other teaching institutions, so that you can begin to fill those gaps? After all, IT is a young person's interest, so it should be possible in time to really cover those shortages.

Joanna Davinson: Yes, absolutely. I will mention two specific things that we are doing at the moment. There is a Government fast stream programme, which brings graduates in. We had a DDaT and cyber specialist group within the fast stream. This is the third year that we have run it, and we have 84 DDaT fast streamers.

Q20 **Chair:** What is DDaT?

Joanna Davinson: Digital, data and technology. It includes cyber. Those fast streamers are coming through that scheme. That is about 10% of the overall fast stream intake. About 3% of our digital, data and technology community are coming in through apprentice routes. There is a significant opportunity to scale that up.

Q21 **Sir Geoffrey Clifton-Brown:** Of the 20,000 that you previously mentioned to Mr Grant, 2,000 are coming in via an apprenticeship.

Joanna Davinson: Across the broader public sector. A lot of those apprentices are coming in from colleges and universities, but we also have apprentices who are cross-training from within the Civil Service. That is a really important part of the capability strategy to ensure that people who are already here get the opportunity to cross-train and become digital, data or technology specialists, because there is a lot of opportunity to do that within our current Civil Service population.

I do have a strategy around capability building, and that is to double that apprentice intake over the course of the next three years. We are working that through with Departments, which are very receptive. Everybody knows that we have a capability problem. The whole world has a capability problem around digital, data and technology. It is not unique to the public sector—it is a really hot market.

Sir Geoffrey Clifton-Brown: We need to train up more people.

Joanna Davinson: Indeed.

Q22 **Sir Geoffrey Clifton-Brown:** The final question from me at this stage is to take you to the evidence submitted by Dr Jerry Fishenden and Professor Mark Thompson. I do not know whether you have had a chance to see this, but this is a really important policy point in terms of designing IT programmes. He says that, too often, IT programmes concentrate on efficiency and rationalisation—in other words, fixing the existing problem, rather than the transformational element of what is going to be required in the future, or the futureproofing of programmes. Given some of the horrors that we in this Committee see, what can you do to encourage everybody designing programmes, including permanent secretaries, long before they get into any fixed IT technological solution, that this is what they must do?

Joanna Davinson: The real key to that is to focus on the outcome that we are trying to achieve. Ultimately, we are here to deliver services to end users, whether they are citizens, businesses or other users of Government services. Thinking about what it is that is going to enhance and improve the quality of the service delivery is where we need to start.

In terms of the discipline that we are operating across the digital, data and technology profession, and referencing some of the controls that Mr Chisholm mentioned in terms of the standards that we apply, approaching it from a user-centric perspective is a core part of our service standard and how we require people to go about thinking about digital transformation programmes. We mature that; we are increasingly seeing that embedding

in Departments and becoming a more general way of working. There is always more to do, but that is the direction we are going in.

Angela MacDonald: I would offer a perspective that I do not think the two are mutually exclusive. If we took the work HMRC did on the delivery of the furlough scheme, for example, that was a highly user-centred delivery. It was able to be turned round very quickly, because it was built on investments we had already made in a modern digital tax platform, on a cloud basis that was already there. You can very quickly, and in a very focused fashion, drive that set of outcomes that you want to do.

If, though, you also want to do something at the heart of your major infrastructure—take something like Making Tax Digital for HMRC, where we have to intervene in old VAT systems, to migrate data and to move and fix those foundations, as well as then making sure that what you are driving forward is a really great experience for the customer—there is a variety of things to do. It will be wonderful, eventually, when we, across the Departments, have made our investments in our more aged platforms and built that strong foundation, but it is a little bit of a misnomer to believe that it is one or the other.

Alex Chisholm: I just wanted to add a couple of points, because the evidence that you received there was very powerful and important, and we, essentially, agree with that point of view. If you focus overly on efficiency in the sense of doing what you are doing now at a lower cost, you underestimate the potential for transformation. It has to be based on user needs, not just taking existing practices and digitising those.

In terms of the futureproof-ness of it, that has become easier. If I think about when I first started trying to do this 30 years ago and compare it to what we are doing now, with cloud-based products, common standards and things that have already been proven and deployed in many other situations, the whole supply market has become hugely more sophisticated. It has become easier not to find yourself in a technology cul-de-sac.

Also, we have got better at it. The technique is usually referred to as agile, although, rightly, the NAO Report says not to be too uncritical in our use of agile. It is right that you approach these things in an iterative way, trying to get quite quickly to a minimal viable product, then going through a lot of testing and trialling, and enhancing on that, rather than going for a gigantic project that you try to move from zero to one and you hope it will be all right on the day. There are lots of developments there that have moved in the direction that your witnesses would encourage us to move in.

Q23 **Chair:** I just wanted to pick up on the skills points, Ms Davinson. It is heartening to hear that you are doing apprenticeships, because you are growing, and hopefully, when someone is in the Civil Service, they might think about staying. What is it like with the market of graduates? They can get offered a job at £25,000 a year or so in the Civil Service in different

parts of the country, or they could go and work in a private bank for probably £40,000 a year. Is that a brake on you recruiting people?

Joanna Davinson: The short answer at the moment is no. We are being successful in recruiting at the graduate and apprentice level.

Q24 **Chair:** Are you holding on to them?

Joanna Davinson: Yes, our retention is not too bad. It is better in the Civil Service than I experienced in IBM, interestingly. I have not quite worked out why.

Chair: It is a happy place to work and play.

Joanna Davinson: I think I do know why. People join us because of the mission. There are people out there who want to do good things in the world. There is more we could do to promote that and make that more of our employee proposition. Generally, when I talk to people who have had long careers within the Civil Service, whether in a digital role or some other role, there is a very strong sense of that, and there is more that we could do on that.

The area where I would say we have more to do within the profession—being really open and honest about it—is in mirroring what happens in the sector that I came from and building technology-based career paths; showing people what the opportunities are to grow and develop by developing technical skills and balancing those with more generalist skills that, traditionally, the Civil Service has focused on. There is more we need to do, and that would improve not only our retention but also the opportunity for us to circulate people across Government.

Q25 **Chair:** That drives me nicely to Mr Chisholm. I do not know how many times I have said in this Committee, and Sir Geoffrey would agree, that we have repeatedly seen permanent secretaries recruited through the same vein—generalists who are bright and capable people—but can you think of any permanent secretary who has got there because they have strong technical skills? Only a handful of people even with a financial qualification, for example, have ever been permanent secretary. I think Jon Thompson was the first, or maybe Clare Moriarty, but you can name them on the fingers of one hand.

Alex Chisholm: When I look at the top 200, you are right that financial skills are still stronger at the moment than digital. It is one of the areas that we are looking to change.

Q26 **Chair:** But there are not even many of them. The top 200 would include finance directors, presumably.

Alex Chisholm: No, not necessarily. Only if they are director-general level, which they are in very big Departments but not the smaller ones.

Where we have seen great improvements just recently, in the last two or three years, has been in operational delivery. We have made that much

more of an area of particular focus, size and scale across the operation. It always has been, but right at the top of the shop as well.

Sparing Angela MacDonald's blushes, she has come up through the DWP and HMRC in customer service-facing roles, with operational delivery as a core expertise. I know that Angela worked before at Aviva and other major institutions, so she has a lot of experience of dealing with end customers. That could be seen as one of the pre-eminent best things that you can do in public service, including at permanent secretary level, like Angela.

Q27 **Chair:** Ms Davinson and Tom Read are very specialist and have been recruited in a slightly different way. How far down the system are the top tech people who could potentially become a permanent secretary? How long will it be before we see a permanent secretary who has the skills that Mr Read and Ms Davinson have? I am not pitching for them particularly; maybe they have an eye on the job.

Alex Chisholm: In fairness, I did run a software business myself.

Chair: You are hiding your light under a bushel, Mr Chisholm.

Alex Chisholm: Yes, I launched one of the first internet e-commerce markets 20 years ago, so I might possibly qualify under your strictures. Not just the three of us here, but what is really important is that, in the past, we have found it necessary to bring excellent, skilled people in, with top digital skills, at the top level, and that is still the case. Most recently, HMRC recruited in the private sector, as did MoD.

What we have been building up is our internal capabilities, because it is very important that the rest of the function does not see the top roles going only to people who are flown in from outside, so to speak. We are beginning to do that. At DWP, for example, the DG responsible for digital was internally promoted. That is going to be much more the pattern. It takes a while to get to that level and, if you look back, it has been 10 years to get where we are now.

Where do I expect to be? In the same way as large organisations, the executive team is going to have deep digital expertise as an essential, and we are about halfway to that if I look across the executive teams across Government. We need to complete that process in the next few years.

Chair: There have been some improvements in the decade that I have been on this Committee, but they were from a very slow start.

Q28 **Dan Carden:** If I may put a question to Angela MacDonald to start with, just to home in on HMRC, one aspect of digitalisation is greater access to personal information and data. I wondered if you could talk quite frankly about how digitalisation at HMRC has extended the scope of HMRC into people's data. For instance, what were you able to see and access perhaps five years ago and what are you able to see and access today, with new regulatory powers alongside that? In layman's terms, how has your scope into people's data been extended by digitalisation?

Angela MacDonald: Our access to data is very carefully laid out in a regulatory fashion, and we are able to have only data that is necessary for us to fulfil our function of assessing your liability for tax, paying your tax credits or supporting your child benefit. We do not have a freedom to roam, if you like, in what we are able to know about people.

Q29 **Dan Carden:** Have they been extended recently, so that there are further powers or greater access to what you can see?

Angela MacDonald: Not that I am aware of, but I will happily take it offline, double-check and write to you if I am misspeaking in any way. Apologies if you are alluding to something that I am not going to. More broadly, we are very transparent about the data we hold, as well as who we share that with in other Government Departments. All of that is available on GOV.UK for people to see. HMRC has an enormous amount of data about people, and it is really important that people can trust us with that data and know what we do with that data. Therefore, we focus very much on that transparency.

Q30 **Dan Carden:** What can you see, in layman's terms, for anyone watching this Committee?

Angela MacDonald: We are interested in the data that is necessary for people to make sure that you are paying the right tax, across a broad range of what that could be. If it is a business, it will be about your turnover, your receipts and your ability to pay us VAT. It may well be, if you are an individual, that you are an employed person. Dependent upon the tax that is there, it will be whatever is the financial information.

For instance, we know about house sales, because solicitors need to tell us about the information that is necessary for stamp duty to be paid. If you are a tax credits customer, we know what your relationship status is, because you need to tell us that. We know what you think your earnings are going to be. We know how many children you have.

These are all the different things that are necessary so that we can make sure either that you get the benefits you are entitled to, and the different pieces of information related to that, or that the tax you are supposed to pay, whether you are a business or an individual, is provided to us.

Q31 **Dan Carden:** Can you see what people spend on their credit cards, for instance?

Angela MacDonald: Not that I am aware of, but again I will make sure that I double-check. We are not trying to, in a Big Brother fashion, invisibly, without people knowing, access people's information. A really good example is how we protected the "eat out to help out" scheme from fraud. We were able to see how much was going through businesses' tills versus how much they were saying that they wanted to claim for "eat out to help out", so we look at those business-related parts. We do not have all-pervading powers to wander into everybody's financial information and

then draw our own conclusions from that. We can take only what is necessary in order to make sure that the tax is paid.

Q32 **Dan Carden:** Ms Davinson, in the process of digitalisation, who within your Department keeps an eye on the protection of people's data, privacy and those types of issue? Is that something that is always reviewed and kept in focus, would you say?

Joanna Davinson: One of the accountabilities within my Department is implementing the national data strategy for Government, which includes putting all the necessary protections in place to ensure that, as Ms MacDonald says, we access the information that we need to access in order to deliver the services that we deliver, but that we use that in a responsible and ethical way.

My group is responsible for ensuring that we have the right data standards, policy and governance frameworks in place so that that happens. The execution of that happens out in Departments, and we assure their processes and the way in which they apply the standards. That is how this happens.

Q33 **Dan Carden:** If I wanted to see how far the scope of Government was able to reach into people's personal data and privacy, and how that was changing over time, because digitalisation does allow greater access into people's data, are you tracking that? Can I see that somewhere?

Joanna Davinson: In order to access data for any purpose, it has to be done within the rules that are set by the general data protection regulation. Before sharing any information, there needs to be an impact assessment around whether it is appropriate and proportionate to share the information for that purpose. Those impact assessments are made public, so that it is clear that that is what is happening. Those are done for each individual element of data sharing. Where data is being shared for one purpose, we cannot just use it for something else. It can happen only if it has been through an open and transparent process to agree that that piece of data can also be used for something else. There is a consent model behind that in terms of ensuring that those who own that data agree that that is a fair and proportionate way to use the data.

All of that is a system. There are thousands and thousands of examples of data sharing across Government. The way in which we manage and control it is through setting very clear regulation and standards, assuring against that, and ensuring that, within individual Departments, there are mechanisms and capabilities in place to implement appropriately.

There are also other bodies such as the Information Commissioner's Office, which provides an extra level of assurance and audit, in some cases, against those rules.

Q34 **Dan Carden:** We have a plethora of computer systems that are developed in different Departments, such as the NHS and DWP. Did you say that there were 230?

Alex Chisholm: That is current programmes.

Joanna Davinson: There are thousands of systems.

Alex Chisholm: HMRC alone has 600.

Q35 **Dan Carden:** Has there ever been or is there an ambition to get to one overarching digitalised Government system?

Joanna Davinson: The short answer is no.

Q36 **Dan Carden:** Talk me through that. I have a passport number, a national insurance number and an NHS number. Has no one ever thought, "Let us have one number"?

Joanna Davinson: We build systems in an increasingly federated way in the modern world. There is no need for us to bring all of that information together in a single database in order to perform the function of Government.

One example from my past is the EU settlement scheme. Six million Europeans have registered through that scheme since it started. With all the necessary permissions and data protection impact assessments in place, one of the ways in which we were able to register people really quickly was by proving their residency by checking whether they had a tax record and/or a benefits record with DWP.

We did not, in order to make that happen, bring that data out of HMRC and DWP and stick it in a database in the Home Office. What we did was to ask a question electronically: "Does this individual have a tax record—yes or no?" If the answer was yes, that was residency and it proved the point. If the answer was no, we would go back to the individual and ask them for some more information. In the way that modern systems are designed, we do not need to bring it together.

Q37 **Dan Carden:** Surely, given the numbers of failures we have seen, if you were creating a system from the beginning, would you not set one system up across Government?

Joanna Davinson: I do not think that we would, no, because, apart from anything else, it would be enormous, big and unwieldy. Who would ever be able to understand it? Most systems are developed for a particular purpose and designed to meet that particular outcome or purpose. Clearly, as we are designing and looking at best practice across Government, we need to make sure that we do not overly duplicate things. Commonly these days, rather than saying, "We will bring all that together," it is more about using repeatable patterns. The more we can modularise things, the more flexibility we have. It is more secure as well. Having everything in one central database is a bit of a gift to those who are trying to hack us.

Alex Chisholm: Rather than a single computer system, we want them to be interoperable between themselves. One part of that is the work that Joanna has been leading around data standards and APIs between those

different systems. To your point about how frustrating it is for individual users to say, "I have a number for this and a number for that. I need to keep re-registering," that is the reason why we are driving this new single login project, which is being led by Tom, so I might bring Tom in on that.

Tom Read: It is important to say that we need to think about the problems that we are genuinely trying to solve. There are probably three main ones. First, the interaction between citizen and Government is still quite confusing. You need to understand the structure of Government and what individual Departments offer, and to find the right services, which is confusing and quite disenfranchising for citizens.

Secondly, once you have filled in your online service, the time it takes to validate all the things you have asked and said about yourself can take an absolute age. It can take weeks and weeks, and there is growing dissatisfaction among users. In the consumer world, if you apply for a credit card or a mortgage, you are not going to wait 14 weeks for a decision. You are going to go elsewhere. In Government, they do not have that choice. Thirdly, we need to make things cheaper and more efficient for Government to run.

The one login for Government programme tries to solve some of those problems. We want to have a single way of signing in to any Government service and, at the moment, there are many tens of ways of signing in. We want to have a single way of proving who you are to Government and that being accepted by all the different bits of Government, so you can do that once.

Then we want to be able to show people what data we hold on them, exactly to your point earlier, and what connection we have between Government Departments. Where it works for users and where users are happy to make their user journey more efficient, we want to start using the data that we already hold on people, rather than pretending that we do not know anything about them when they come in and asking them to post in proof of passports and residence, and that sort of thing. We are trying to connect all that up.

We are also starting a new initiative that we are calling whole user journeys, which, to the first point, hides the complexity of Government. For example, if you are about to retire, just left higher education, just had a baby or are moving house, you need to fill in tens, in some cases, of digital services and repeat the same information again and again. We want to see if we can work with Departments, not do this from the centre, to hide that complexity, build whole services that do all the things that you need, and connect the data through API connections—application programming interfaces—rather than centralising the data, so that we can make that lived experience for users just much easier. It is not my job, but the efficiencies and savings will just flow from that later. My job is really making it much slicker for users to interact with Government.

Q38 **Dan Carden:** I have one more quick question, and it is something that has

come up through my constituency office. I know that we do not have anyone from DWP here, but I have had a number of constituents contact me in recent weeks, saying that they have registered for their pension and there has been a delay in receiving it.

Chair: Just for our witnesses' benefit, we will be examining the general point in a few weeks' time.

Dan Carden: I wonder if anyone could explain this delay.

Alex Chisholm: No.

Chair: We have this very subject in front of us in a couple of weeks' time, so we will go into that in enormous detail then.

Dan Carden: I thought I would try my luck.

Chair: It shows that even well-worn, longstanding systems that generally have delivered pretty consistently can still have problems. That is one of the reasons why we will be looking at that in detail, let alone the individual distress.

Q39 **Peter Grant:** That might be a nice lead-in, because I want to look at legacy systems. I will start with Ms Davinson, and the other witnesses may want to comment as well. For clarity, by "legacy system", I am talking about systems that a Department relies on heavily, that have been there for a long time, and that, for a number of reasons, are showing their age and have to be replaced at some point. They usually contain huge amounts of data, which they cannot afford to lose in the transfer. That is the challenge.

Ms Davinson, do you or anyone else in Government have a clear picture as to what major legacy systems are out there and how long we have before they need to start being replaced?

Joanna Davinson: We do have information in the centre around what legacy systems are out there. We did quite a lot of work on this last year to create that overall picture. Departments are increasingly also getting much more granular and detailed about what the status of their legacy estate is.

What we do not yet have as clearly as I would like is an ongoing process for assessing and understanding what our cross-Government legacy risk looks like, in what direction it is going and where we need to intervene. One of the programmes that I have initiated within the Central Digital and Data Office, working with Departments, is to create a framework for assessing legacy risk, which we can work with Departments on.

We are currently working with three Departments to refine that before we roll out to the rest of Government, which will give us an overall in-the-centre picture against a four-box model. In the four-box model, the top right hand is high risk and highly utilised or business critical. That will enable us to get a clearer picture across Government and be more transparent, and help us, in conversations with funders such as Treasury,

to put the right focus on getting the right investments into the legacy estate.

I acknowledge that it is not as systematic as it should be at the moment, but we have an initiative in place to make sure that that happens.

Q40 **Peter Grant:** Can you give us an indication as to when it will be in place?

Joanna Davinson: The intent is that we pilot through the rest of this year. My intent is that we have a tool we can start working with—and we will refine it as we go—from the start of next year.

One of the things that we have put in place—and we are now in our third cycle of these—is a quarterly meeting that I have, sitting together with one of the DGs in the Treasury, with each Department. One of the things that we work through in that meeting is the status of each Department's legacy estate, what their key risks are and what help they need. As I say, we are into our third cycle of that and that is beginning to prove really helpful in getting that overall, consolidated picture of where the risk sits, as well as ensuring that, in the centre, we can make the right interventions to help Departments address that risk.

Alex Chisholm: There is so much legacy IT in Government, and a lot of that is not bad. By comparison, if you think about legacy transport infrastructure, like roads and rails, you do not change them all every year. You could not do that, and a lot of them remain very serviceable. It is the same in the IT world. We have a lot of legacy IT that is very stable and secure, and performing acceptably and at reasonable cost. You would not really want to try to disturb it and, indeed, trying to do so, for the reason that you mentioned around large amounts of data, is not without risks itself.

We try to focus on those particular parts of the legacy estate that either are very risky, just because they have low reliability or security vulnerabilities, or frustrate us doing things that we want to do differently and better in the future around new services or business transformation. That is not true for all of the legacy IT. It is not like you simply say, "Every 10 years, we need to change it," because there are some things that are older than 10 years that you do not need to change. There are some things that are younger than 10 years that you need to change, for the reasons I identified—frustrating new services or big, new contextual changes in the user picture.

That is why we need to have this very dynamic review of legacy IT across Government, which is the process that Joanna described.

Q41 **Peter Grant:** Generally speaking, when a Department decides that it needs to plan for the replacement of one of its legacy systems, the way that that is resourced is through the spending review. They put a bid in to the Treasury and the project appraisal process has to be gone through. I have two questions about that. First of all, does using an annual spending

review, which is cash-limited by Department, work for projects that, if you are lucky, will take five years—or 10, if things go wrong—to implement? Are major IT projects one of the areas where an annual spending cycle just does not work?

Alex Chisholm: Let me start, but Joanna and Tom want to comment as well, so I will be quick. It is true that we have had a one-year spending round in the last two years, but we have a three-year one in prospect. That will help. It is also not the case that that is the only way in which major technology projects and technology remediation take place. Departments do a lot of legacy IT remediation as business as usual and part of their ordinary operating costs, and it is not something that they have to bid for separately.

Most programmes, as you rightly say—especially the larger ones—go over multiple years. In fact, the average time of a GMPP information and communication technology project is eight years. That goes through multiple stages and gets an endowment for different things. You get to strategic outline business case, outline business case and full business case. As you move through those stages, the pot is filled with the money for the next stage, but it is not that you have to keep bidding every year as if you are starting from scratch, *Groundhog Day* style. It is part of a big, recognised strategic programme that has to be delivered. Maybe that helps a little bit.

Joanna Davinson: I was basically going to say what you just said. In my personal experience at the Home Office, we have a lot of legacy and a lot of programmes to replace legacy. I am not aware of any programme that could not proceed because of the funding cycles. You have to remake the case, but they all went forward.

Tom Read: There is a bit of a paradigm shift that we need to be aware of in terms of what good looks like in funding these sorts of initiatives. You can do it within the current structures of spending reviews. Broadly, what good looks like is funding teams rather than projects; otherwise you are funding the next-decade legacy. These things need to be quite iterative and make sure that we are releasing value the whole time, so that you do not get these failures that the NAO Report talks about.

I have come from four and a half years at the Ministry of Justice. One of the things we were looking at is the core prison system, which cost more than £500 million to build 15 years ago and was an asset that is still depreciating, when really it is blocking progress in modernising the Prison Service, because it is so rigid in how it works. Rather than putting in a bid—and I am making this up—for £200 million to replace the whole thing, there are now teams in place in the MoJ who are chipping away at that iceberg and prioritising the most important bits, carving them out, redesigning the service, and building a new microservices architecture that is going to be supported long-term.

That is a really good example of how you can do it more cheaply and with much less risk. For me, that is what agile should be about, rather than the way it is sometimes treated—like a gospel way of doing things.

Chair: On this Committee, we have heard "agile" misused very often by many permanent secretaries, so it is helpful to have that clarification.

Q42 **Peter Grant:** In the example you just described, would it be reasonable to say that the best solution of all would have been for the need for flexibility to have been identified on day one and written into the specification, so that when you wanted to change how we ran the prisons, it was not held up by the fact that it did not suit the computer, but rather that the computer was there to change when the world changes?

Tom Read: Absolutely, and it goes to Mr Carden's question. The modern architectural patterns that we see work best are when it looks and feels like one service to the people using it, whereas, in reality, it is lots of microservices. If you want to change some, because they are not working, you do not need to take the whole thing down. You can focus just on those particular ones. It absolutely needs to be written in as a principle up front.

Joanna Davinson: I agree with all of that. The other thing to recognise is that technology has moved very quickly in this area. We all talk about cloud these days, and it is amazing in terms of its flexibility and the way we can now work. Three or four years ago, everybody was very suspicious of public cloud, even in the private sector. In 2017, when I was in IBM, we were looking at public cloud and thinking, "Will that ever be a thing?" Now you always start there, so technology has moved very quickly in the last three or four years. We can do things now that we could not do even three years ago.

Q43 **Peter Grant:** When we look at the process that projects have to go through for approval, whether it is within their own Department or if they are looking for special funding from elsewhere, there seems to be a clear perception from a lot of the digital leaders that the system pushes them to be over-optimistic and to present things as confident assertions when, at best, they are best estimates with a significant degree of uncertainty.

First of all, Ms Davinson, do you recognise that as an issue? What do we need to do to the system to change it, so that, when somebody presents a project for approval, they can afford to be completely honest about where the uncertainties are, and it will not just get knocked on the head because the Department or the Minister wants to announce something that will definitely work, rather than something that will probably work and might be two years late?

Joanna Davinson: I recognise the challenge. It comes from a couple of places. Back to our earlier conversation, the experience of working with digital systems and programmes is not ubiquitous across Government. Therefore, the understanding is that, in any IT or digital system, there is a degree of uncertainty.

I always get very suspicious of people who come to me and say, "Here is a plan that says that, in June in three years' time, this system will switch off and this thing will switch on," because you can never plan with that level of certainty and precision in a digital environment. We have to get much more thoughtful about recognising that uncertainty at the outset and working with it. I am not sure that we have to change our funding or programme delivery processes, but we just have to get more skilled in terms of how we apply them and recognise that we need to iterate.

I recognise the challenge. It is more of a challenge of building capability and developing experience, rather than the system having to change.

Tom Read: I was going to make a slightly tangential point. We saw a real change in how these things work during Covid, the lockdown and the emergency that we had there. A lot of these digital programmes almost need more rather than less governance, and that is another misconception.

Back at MoJ, we had to solve the problem of prisoner visits. People could not visit people in prison, which created a lot of unease for everybody. There was an initiative to put in prison video calls—completely unproven technology and really uncharted territory. What worked really well is that the permanent secretary and the executive committee really leaned in and said, "We will do this, but we want really regular updates and, if it is not working, we will stop it." People really leaning in on these things, rather than saying, "Come back when it is red or when you are done," is something that we need to get to.

Q44 **Chair:** Also, because of the timeframe, trying it and taking the risk, but having a plan to pull out.

Tom Read: Exactly.

Chair: That is interesting.

Q45 **Peter Grant:** Coming back to the permanent secretary, I appreciate you have to be careful in how you answer this, but it is a question that needs to be asked. How much of the problem with over-optimism and over-promising at the beginning is caused by the fact that Ministers like making big-bang announcements that are absolutely certain and get lots of good coverage?

If I were a Minister, I would not want to stand up in Parliament and say, "Here is what we are planning to do to update the technology systems within the Prison Service. We think it will cost £2 billion. It might cost £3 billion. We think it will be ready in three years. It might take four. We think it will do this, but it might only do that." That is the real world of any major technology change. How big a problem is the conflict between the real world that the teams have to deliver in and the world that politicians want to live in, where everything is certain and going to work?

Alex Chisholm: That has changed a lot. Every Minister I have ever worked with has been very ambitious and keen to deliver for the public and to deliver against the manifesto commitments that they have made and been

elected on. That has not changed, but what has changed is the understanding about what it takes to deliver it successfully. Particularly in recent years, I have found that Ministers have been very focused on asking, "Will this work? Will this work at scale? Can you assure me?" They have become, rightly, concerned about that, because they know that they are going to live with the consequences.

I already mentioned the work we did on EU exit, but Ministers who have been involved in the Covid response, the whole way through the process, have been very much asking, "Will this work? How quickly can you get it up there?", not because they are chasing headlines or delivering against political initiatives, but because these are vital public services, where digital is the technology that is there to deliver for citizens.

We have got to a much better place than we used to be, in terms of the common understanding about what it takes to be successful, and people sometimes being cautious and saying, "Are you ready to go at scale here? I would rather you put this back three months, if you can improve the confidence of it working successfully, rather than rush it out and have something go pear-shaped in the public domain." There has been more caution and realism, and it has been more of a joined-up effort.

Joanna Davinson: I would agree with that. We have a responsibility in the digital, data and technology profession as well to be better at explaining and describing why things take the time they do, as well as coming forward with proposals for how to deliver some of the objective sooner and getting much more incremental in how we deliver.

Q46 **Peter Grant:** Mr Chisholm, do the Government's current rules of procurement, tendering and contracting work in the environment that we have to operate in for major technology changes? Are there changes to those procedures that you think need to be made in order to get the best value out of contractors that we are using?

Alex Chisholm: Yes, they do need to change and evolve in that way. You are absolutely right about how important that is. If I could put this in a stereotypical way, historically procurement tended to be slightly over-specifying, up front, exactly what had to be delivered, and then tended to prioritise the lowest-cost provider of that. The problem with that is that, by the time it was delivered, it was already out of date for your requirements and you were already trying to play catch-up.

A much more modern approach to that is to have shorter cycles, where you say, "I am interested in this as the solution. What can you come up with? This is the outcome, the service and the standard that I want to hit. What is the best way to achieve that?" That is much more of a partnering-type approach than a conventional procurement-type approach.

It is also incredibly important to break up those massive programmes, which we know are very difficult to deliver, into smaller, more modular elements that are much more open to SMEs as well as large-capability

companies, and with much less risk involved in delivering it. You get something useful much more quickly.

Those are big and important changes that we have learned to make in our procurement. As the Committee is aware, the Government have put forward a major set of new proposals for public procurement, and digital is one of the biggest areas that benefits from that. When that becomes the new system of procurement applying to all public procurement, there will be great benefits there from the point of view of managing cost, risk and the accessibility to the supply industry, understanding the pipeline of what lies ahead and having a much bigger range of choices there and a better opportunity to partner with the Government side to produce a better outcome.

Q47 **Sir Geoffrey Clifton-Brown:** Mr Read, you said something at the beginning of this hearing that I thought was very important. You said that we must not lock in technology too early, but, equally, agile technology is not a substitute for proper scoping in the first place. Can you give us an example of where agile technology does work?

Tom Read: Yes, absolutely. I will probably take the example of what did not work with the Verify programme and what is working with our one login programme. With the Verify programme, the technology approach and the overall design were baked in right at the beginning.

Q48 **Chair:** For anyone following, page 20, figure 6 gives a neat summary of some of the problems with Verify. Also see the previous PAC Report.

Tom Read: Yes, I am conscious that you have covered it quite a bit. My view of it is that the founding principle was that we will use external providers to prove somebody's identity, and then just say "yes/no" and back to the service. There is a complete separation there, which is very good for completely protecting citizen data, but what was not done is proper iterative testing with real users to see if that worked. We now know that that does not work for around half of the users who use it.

At the moment, we are working instead with the front line of Departments across Government to say, "Let us learn more about exactly how your users work. We will build a solution that works for that set of users. Then we will go to the next set of users and see if the same solution works. If not, we will need to pivot and we will need a slightly different solution."

We will see. Hopefully, I will be coming here in a few years to say that this has worked very well. What we are seeing already is that, if we had made technology decisions right at the beginning, we would be dead wrong already. We have already seen that there are people—probably like some of us in the room—who have a passport, a driving licence and a mobile phone. There are other users who do not have any of those things and have very messy, chaotic lives. Our agile, iterative approach has proved that we need completely different solutions for those different types of

users. We are going to be iteratively building and rolling them out, and we will be able to stop or change at any point on the way through.

Q49 **Sir Geoffrey Clifton-Brown:** We have heard many times this morning that this is a very fast-moving field all the time, with new innovation going on. How do you, in Government, keep up to date with what the private sector is doing and what the latest technologies are, and adapt what those latest technologies are into your existing or, even more importantly, your new programmes?

Tom Read: Our chair of the Central Digital and Data Office, Paul Willmott, has been private sector throughout his career. He founded McKinsey Digital. He is chief digital officer at Lego. We have a lot of guidance from him on trends that we might not otherwise see.

More prosaically and more on the ground, we tend to circulate talent more between core digital teams in Government and private sector organisations. In my team in the Government Digital Service, we have people who have recently come from Amazon, Google, the BBC and *The Guardian*. Likewise, some of our people leave and go there, more than they might leave and go to work in the Home Office, say. We are seeing quite a lot of circulation of the people who really need that deep technical expertise to come in and say, "No, we did it completely differently where I was recently." We are seeing that on the ground, and that is healthy. There is an attrition and retention question there, but a healthy circulation between private and public sector is important.

Joanna Davinson: We have a very active community of chief technology officers. We are promoting and supporting that. They are technologists who are plugged into external events and conferences, and they are also contributing. They are part of the community of technologists beyond the public sector who are thinking about how the market moves. We contribute to the innovation as well as benefiting from it. There are some specific programmes in specific parts of Government to test new products and innovative new solutions that our CTO community is well embedded in. It is a challenge to keep up, but our technology community loves this stuff, so it is very into it.

For people like me at the CIO level, trying to lead things, it is more of a challenge to stop too many good ideas coming in, because you have to get a balance.

Alex Chisholm: There is an important distinction. Going back in time, software had to be installed locally and, if you wanted to enhance it, you needed to purchase new software and have that installed locally. That was an inflexibility. With software as a service and cloud-based, a lot of the enhancements are happening without you doing anything about it. You are tapping into new technology and new ways of working, because you have just licensed the service. That is a big and powerful difference.

Q50 **Sir Geoffrey Clifton-Brown:** I am going to ask a slightly layman's

question. You will know that I am not an IT expert. If we use HS2, for example, as a big physical infrastructure project, it is very easy to see where it has got to, because you can go and see whether the tunnel has been built. With an IT project, unless you are an IT expert, it is not so easy to see where the project has got to. I wonder whether we need to employ more business and technical architects and to break a big project into manageable bite sizes, with good teams working on each, and then have a proper roadmap as to how you are going to put it all together. Basically, that is what has happened in HS2: they are doing bits of it and are working out how they can put it all together. Is that a model that we can use in IT?

Joanna Davinson: Yes, in a word. Interestingly, there is a read-across to the conversation we had last week about the National Law Enforcement Data Service, because that is exactly what we are doing for that service: breaking up the delivery into a set of products that incrementally build the total piece.

Perhaps one of the differences with a digital programme, though, is that you cannot always detail the entire roadmap at the beginning, because you do not always know what you are going to find. Also, as we have just described, technology and circumstances change, and you have to allow for some flexibility to adjust that roadmap. Generally, I would recommend in a digital programme that you have quite a lot of clarity and certainty over the next 12 to 18 months, and then you sketch in the rest of it, with a roadmap that is probably less detailed to take you out to the full capability, recognising that you need to iterate as you go and develop incrementally.

Q51 **Sir Geoffrey Clifton-Brown:** Developing that analogy a little further, I am quite keen on milestones, so that you can see where a project has got to by a certain time and, if it has not got there, you can interrogate why, because it is going to have a knock-on effect on the next. When we are designing these big programmes, could we not introduce milestones into these individual phases?

Joanna Davinson: Yes, and we do. Whether that is visible or clear enough is a good question because, clearly, if you are not seeing it, it is not. We do and, increasingly, as I said, the near-term milestones have a lot of certainty. The out milestones have some parameters around them in terms of degrees of certainty, but that is absolutely the way we should be constructing and managing that process.

Chair: Certainly, on this Committee, rather than points in time, we are looking at ranges, which we think is a more realistic thing further out—not for the next few months or the next year, but beyond that.

Q52 **Sir Geoffrey Clifton-Brown:** That is entirely right. We would expect the originator not necessarily to stick to those milestones, but at least to explain why the milestone had not happened or when it was going to happen.

Alex Chisholm: I want to say one thing to work with your HS2 metaphor. One of the hardest things when you build a new train line is the interface points with the rest of the train system. That tends to be the same with new digital projects. The delivery of the new functionality and the code to do that is of relatively high confidence and high predictability, and you know how long it is going to take to do that. The bit that is a known unknown is how long it is going to take you to integrate that with other systems and to do that safely in a way where there is 100% assurance in the data. In a nutshell, that tends to be the area of difficulty.

Chair: Integration, integration, integration.

Alex Chisholm: Exactly.

Q53 **Chair:** Angela MacDonald is the queen of integration, with one of the largest IT projects in the public sector. Is it still the largest major digital transformation in Europe that you are overseeing?

Angela MacDonald: I am not sure that I could say, but it feels pretty large sat in it. The point that has been made is absolutely right. Looking across the HMRC portfolio, for instance, it is absolutely milestone and outcome-driven, and the whole mechanism for reporting, and the escalation and tracking that goes on, not only within the programme architecture but also monthly to the executive committee and to the board, is also about milestone tracking. Are we on track for the outcomes? What are the risks and escalations? Are things going to be delivered in individual pieces at individual points? What is the dependency tracking?

The real challenge, interestingly, is not the bit that happens only inside the programme, because that is a pretty straightforward part. In a programme like ours, where you are genuinely interfacing and trying to connect different bits at the same time, whether it is a road or our digital bit, it is whether or not you have an air traffic control system. I am terribly sorry for bringing in another transport mechanism here, but things have to land at certain points in a certain order, in order for everything then to come off. The really effective planning for that, when you have 600 legacy systems and you are trying to drive new things, is where you can often trip over. It is not the milestones in isolation but the milestones in accumulation. We put a lot of effort into the control and management of that. That is what we are trying to be much better at.

Q54 **Sir Geoffrey Clifton-Brown:** That has sparked another question, because you have some of the most experience in Government of implementing these big schemes. When you have the scheme complete, presumably you have a trial on certain numbers of your customers, but you still keep the old legacy system running. How do you do the transformation between the new system and the old, so that you are absolutely satisfied that the new system is going to cope at scale before you end the old system?

Angela MacDonald: It depends on the topic. Thankfully, none of you noticed that, earlier this year, HMRC completely re-platformed its child benefit system. That was moving 7 million families from a very old legacy

system on to a brand new one, with a whole load of data migration, without having any interruption in payment.

We knew that that was massively high risk, and we had zero tolerance for payment interruption. That was not going to be allowed. Therefore, the year before of testing—and it was literally a year—was rehearsals for running the data through from the old system to the new system, seeing what fell out, seeing if that could then make it to the banking system, learning the problems, and then pumping it back through the beginning and starting through the pipe again.

There are some systems where you do not have an option to do it a bit at a time; you can do it only in one great big migration. Thankfully, there are not very many of those, but, when you do have to do that, the testing has to be massively appropriate to that kind of big bang. We were peer reviewed by another Department. People crawled all over our programme before we were prepared to press the button.

In other instances, you ideally do not do a big bang; you parallel run your IT systems. A great example there would be CDS and CHIEF, which are our customs systems. We are still driving a whole load of our activity through CHIEF. We have different and new activity going through CDS. We are working out how to scale that up, doing lots of training for the users but also taking feedback on what is and is not working for them, but then setting an end date. You will probably be aware that we just recently announced that CHIEF will close in 2023, and everybody will move.

You have to have a set of approaches that are pertinent to the circumstance of the thing—do you have choice or no choice?—and to the policy situation, so the law has changed or it has not. With that knowledge, your approach to testing and to customer engagement has to be pertinent to the environment that you find yourself in.

Sir Geoffrey Clifton-Brown: We share your pain over CHIEF and CDS. We have examined it so many times in this Committee.

Angela MacDonald: I know, but CHIEF is coming to an end, you will be pleased to know. We are nearly there.

Q55 **Sir Geoffrey Clifton-Brown:** Good, I am delighted. That is a great announcement.

Mr Read, do you accept that we need to look at hardware as well as software? For example, the NHS is mandating cloud technology, but is cloud technology always the answer? Basically, you are renting space from some great provider, which is costing a great deal of money. It may not necessarily be cyber secure. Might it not be better to look at different solutions and having your own servers, for example, in a very big system like the NHS?

Tom Read: I will give my view, and I am very sure that Joanna, and possibly Alex, will want to come in. I am confident in saying that, usually,

the public cloud is the right answer now. The world has moved on an awful lot in the last 10 years, and we should not be reinventing the wheel when things become a commodity. The moment you can rent space or pay subscription pricing for a product, it has become a commodity. That is usually the time that Government or any private sector organisation should stop doing that, unless there are really good reasons to do it.

There are good reasons. For example, in the secret and top secret world, you are usually not using public cloud hosting services, because you need to know much more carefully who is looking after those services and where they are. Geographic locations are really important. Normally, for what we do in Government, which is official, it is going to be more secure and cheaper to use cloud services from the big providers than it is building our own data centres. From my perspective, it is very unusual for it to be a better decision.

Chair: It is a balance of risk.

Q56 **Sir Geoffrey Clifton-Brown:** Could you address the cyber-security issue as well?

Tom Read: The advice from the Government security profession and the National Cyber Security Centre is that they are much more confident if Government Departments put services on cloud providers like AWS or Microsoft Azure, because they have cyber specialists who really understand the architecture and the risks of those platforms. Increasingly, Departments and agencies have cyber specialists who are expert in those platforms as well. Their guidance, as I have been told all the time, particularly when I was a CIO, is that it is likely to be more secure, not less secure, to use those cloud platforms than inventing it yourselves.

Joanna Davinson: I had exactly the same advice from NCSC. On the cyber-security point, absolutely. That said, within my organisation, we are looking at creating a framework or a roadmap that helps the Department make the decision about when it is appropriate to put workloads into public cloud. For most of our workloads, that will be the right answer. It is also about how we ensure that the way in which we do it means that we continue to maintain visibility and control over what is happening with the data.

As Mr Read said, there are other circumstances where you might want to use more of a private cloud, so that you have a higher degree of control over it, or even a proprietary data centre in a non-cloud-type environment. The Crown Hosting organisation is a joint venture with a private sector data centre provider, which enables us to have some physical data centre space as well as a cloud-based strategy. We need a combination of those things. Part of my organisation's scope is to help Departments work out what the right solution is for their particular circumstances.

Alex Chisholm: I have a very tiny point about the economics, because it is very important that the Committee appreciates that software as a service

is inherently likely to be much lower cost than doing it over and over in locally deployed situations. If you look at the hardware that you have, and the software licences, any individual customer is going to be using only a small percentage of it, if it is deployed locally and they own that machine. They also have to service and maintain that machine. If you have it remotely, you will find that, in all cases, the capacity utilisation is much higher, so it is much more inherently efficient from that perspective.

Joanna Davinson: And easier to scale.

Alex Chisholm: In very few institutions does it make sense to buy all that expensive kit, have your own people look after it and have all those licences just for yourself, except in financial institutions.

Q57 **Sir Geoffrey Clifton-Brown:** That is very helpful. Do Government procure the cloud on a project-by-project or system-by-system basis, or do they procure a block of cloud for the whole of Government?

Joanna Davinson: We have put in place a one Government cloud strategy community, which is a community of cloud users across Government. There are enterprise agreements with the major cloud providers, which set the parameters for pricing and terms and conditions for buying cloud services. Those are called off by individual programmes, projects and Departments within that framework, because they are the people who know what they need to use and which services they need to consume.

Q58 **Sir Geoffrey Clifton-Brown:** Mr Read, very few business cases on these big projects are put together by IT specialists. Why is that?

Tom Read: It is probably worth reflecting that we talk about digital, data and technology as if they are all one thing, and they really are not. There are technology programmes that are mostly technology programmes. An example would be, again, back in MoJ, replacing computers across all the courts. When I was there, that business case was absolutely put together by IT specialists. I certainly had to sign off on it and write lots of it.

"Digital" itself is an adjective and often means business change, with some element of moving things online. It would be inappropriate for the IT leader to lead on that. It needs to be the people who understand and own the policy and the operational delivery. In the context of the internet era, they are the people who need to lead on this. In those authentically big digital transformation programmes, the tech is quite rarely the hardest bit. The hardest bit is fundamentally changing your business, and how you interact with citizens and deal with the educators around that. Those are the hard bits. Does that answer your question?

Q59 **Sir Geoffrey Clifton-Brown:** That is fine. I am conscious that the Chair is hustling me—nicely, because we want to get to the end of this. I understand, Mr Chisholm, that there has been an internal report called *Organising for Digital Delivery*, which is somewhat critical about the Government's delivery of digital programmes. Is that going to be published? If not, how can we be assured that, having commissioned this

report, the lessons are going to be learnt from it?

Alex Chisholm: That report, *Organising for Digital Delivery*, has been published. It was commissioned by me and Cabinet Office Ministers last summer. Work was done by a number of experts externally, who put together that report. They interviewed dozens and dozens of people and leaders across Government and had very frank discussions, and used that to shape their view about what good looks like. There are eight recommendations in it and we have already implemented half of them fully. We expect to complete that process over the next few months. Rest assured that that is core to our digital strategy now. All of those criticisms are ones that we accept and are acting on.

Q60 **Sir Geoffrey Clifton-Brown:** Mr Read, would you agree that teaching whoever is going to commission these big programmes about digital transformation does not necessarily need to be about the nuts and bolts? When you are commissioning a programme, you do not necessarily need to know the details of how to organise coding, for example, but you need to know the architecture and what you want to achieve.

Tom Read: I fully agree with that. Going back to a couple of points we were discussing, as technology becomes more commoditised, you need fewer deep technical specialists in these programmes working out whether it is possible. Most things are possible now. What you really need are people who authentically understand the outcome you are trying to get and how you are going to measure that as you go along. It may be customer satisfaction, just as a simple measure of a digital service, for example, or it may be the percentage of successfully completed applications. It may be the time from the application being put in to the citizen getting what they want. We need to really focus on user and business value much more than the technology, which is an important element but not primary.

Q61 **Sir Geoffrey Clifton-Brown:** Ms Davinson, you were nodding vigorously. Do you have anything to add?

Joanna Davinson: No, I completely agree with that.

Q62 **Sir Geoffrey Clifton-Brown:** I want to ask a final question on scoping. People are often pressurised into developing something at speed, without really scoping and understanding what it is that you want to achieve. Would you agree that people should not be bamboozled by the jargon, "sprints", "ethics" and so on, and that it is much more important to take the time to deliver these digital programmes properly when you are scoping?

Tom Read: I completely agree. As I said earlier, there has been a level of turning really good principles into mandates and almost a religion. The principles that GDS set out nearly a decade ago, and those that are held in any digital organisation or mature organisation with a consumer focus, are that you should be able to stop a project at any point. It will have delivered measurable value and you can still stop it if you are not seeing any more value.

That is really the principle of these words like "discovery", "private beta" and "public beta". It is about proving that you are doing the right thing. For private beta, if you test with a set of users a small set of services you have built, and they do not work well, and if you do not have people reporting that it is fulfilling their needs, you stop or pivot. That is the fundamental principle that we need to really hold on to when we are doing any digital transformation programme in Government.

Q63 **Sir Geoffrey Clifton-Brown:** We discovered a problem last week in the police national database inquiry, where the IT contractor had not really understood how much or how little the Department had done to decide what it was that it wanted out of the system. It had not done the work to know where the problems with the legacy system were. The IT consultant or contractor was not aware of how much or how little the public sector had done when it engaged it. Is this a problem and, if so, what can be done about it?

Tom Read: It would be best if I defer to the expert in this area.

Joanna Davinson: I was here last week, when we talked about that problem a little. I would acknowledge that we have changed approach on the National Law Enforcement Data Service to reflect some of the things that Mr Read was saying. We started off bravely thinking that it would be relatively straightforward to replace the police national computer, but that was an incorrect assumption. When we opened it up, it was very complicated. At that point, we had already locked ourselves into contracts with suppliers that were not, ultimately, helping us. That was why the Home Office took the decision to pause and reset, and to adopt much more of the agile, iterative approach that we have been talking about today. We will see. I really hope that I am here in another year or two, describing the success on the programme. That was a learning.

Sir Geoffrey Clifton-Brown: Exactly that. It was not really to criticise the Home Office, although I am quite critical of it, but to see what lessons can be learned for other programmes across Government.

Chair: And, more generally, from all past mistakes.

Alex Chisholm: What the NAO Report says is right. You should put a lot of effort in up front to be really careful to set your project up for success and to look at the risk very squarely. There is no question about that, but let us not forget that the Government sometimes have to move very quickly. The vulnerable person scheme had to be set up in three weeks, and the furlough scheme in four weeks. They were not subject to that super-careful preparation. If they had been, we would still be waiting for them now, and we did not have that luxury of time. Just to emphasise the point we had earlier, with digital projects, particularly because of the programme and systems integration, sometimes the devil is encountered as you roll them out, and any amount of upfront would not have helped you.

Sir Geoffrey Clifton-Brown: That is why I like my milestones.

Q64 **Chair:** You have, perhaps fairly, given yourself a lot of leeway in that answer, but we are grappling with how we deal with this as a Committee and watch this in different Departments. We look at individual projects, but it is the overall architecture, as Sir Geoffrey says. What lessons are learned from past mistakes is really critical, which is why we welcome the NAO's approach in this.

Picking up on that, from your point of view, Ms Davinson, where is the best practice in the public or private sector? Where would you say is doing better than Government as a whole? It might be a bit of Government, but can you give some exemplar models?

Joanna Davinson: I do not think that there is a single exemplar, because Government is made up of lots of different activities and things that we do. Certainly in terms of digital services for end users, financial services and retail have made very significant progress. Financial services in particular have some of the same characteristics as the public sector, with complex legacy environments.

Q65 **Chair:** That occurred to us in preparation. Why is that? In retail, they are dealing with a discrete number of people who are their own customers or users. Is it that they have a commercial driver? What is it that makes them do it better?

Joanna Davinson: They are a bit ahead of us, and the commercial drivers have certainly pushed them in that direction. They had to be much more responsive to what their customers are saying to them.

Chair: Let us be clear: they have made mistakes. We have seen a few catastrophic meltdowns in the finance sector.

Joanna Davinson: That is probably something to say about all of us. One of the reasons why digital change is difficult in Government is that it is difficult, and everybody experiences that. I would probably say that the private sector is a bit quicker to learn the lessons and to stop things that are not working, which we need to look at to see how we can reflect it a bit more consistently in the way in which we approach things.

Q66 **Chair:** Who calls the shots on that? Mr Read has referred a number of times to stopping it when it goes wrong. That can be quite difficult—and let us be clear, Mr Chisholm—in the culture of the Civil Service, where, if it is seen as a failure, it is not great for your career. Where does it come up to GDS or to you, Ms Davinson, or does it go to the perm sec? I can see there being a lot of intense Civil Service-style meetings to discuss what to do, worrying about telling a Minister about failure or about some other pressures. Who calls those shots?

Alex Chisholm: We have tried to change that. The discussion we had before about outcome delivery plans is very important, because we are focused on outcomes and the delivery of them. In a way, that implies a degree of flexibility about the means by which we get there, and that is very important. Rather than talking about success versus failure, it is saying, "That is the destination and we are quite open to a number of

alternative routes there. If we need to change our strategy to get there, that is fine, as long as we still get to where we need to get to." Focusing on the goal is a very important thing there.

Also, in the internal review processes that we have applied, again in a stereotypical way, rather than saying, "I would not want to do that if I were you," we have got much better at rolling up our sleeves and saying, "How do we get this project to green?" I have already described the improvement year on year in ICT projects for the number that are green now versus the way they were a year ago. That is because of help from central experts as well as people within Departments in asking, "What do we need to do to get this back on track?" That is a healthier way of thinking about it as opposed to failure and hiding failure; it is fixing it.

Q67 **Chair:** That works well when it works and you have a real openness, a mission in common and a culture that delivers on that, but it could equally hide a lot of failures along the way, as no one is quite responsible. Who calls that shot? Would that be the permanent secretary or the accounting officer in any Department? Ms MacDonald is nodding for HMRC.

Alex Chisholm: Absolutely, and again the Report is excellent in that, because it rightly says, "Do not just focus on the timeframe and the costs. Look at the benefits that you are trying to achieve and, in private sector parlance, the net present value of your programme or project." Some of these things have billions and billions of value that you are trying to create. If our milestone approach just says, "Do whatever it takes to deliver by that date," if it is shoddy and does not deliver the benefits, that is a waste of time. Very much focusing on preserving that value is something that this Committee can really help with as well: focus on value preservation and not just timeliness and cost inputs.

Q68 **Chair:** We are, funnily enough, looking at how we measure public value in different ways—not just the pounds and pence, which are a large focus of our work, but the efficiency and the effectiveness. Ms Davinson, we talk about Government as though it is almost one thing. You do have some control over Whitehall, the Departments and the agencies, but let us take local government, which you do not, except through one Department. The NHS is many moving parts. GPs alone are all different from each other, let alone different hospital trusts and other services.

Is there anything that you can do to influence how that improves? We have seen some big challenges in the NHS. Financially, it is a big challenge when you are comparing ICT and digital change with the backlog of patient operations.

Joanna Davinson: I would say two things on that. One is that, where we are developing standards, policies and ways of working, we are sharing that through the equivalent organisations within local government, the NHS and the Local Government Association, and also with the devolved Administrations. We have quite close links with our equivalents there. We

make available everything that we develop, and vice versa, so there is a community around sharing these things.

There are some more specific interventions that we are increasingly applying. For example, the digital spend controls extend into parts of the NHS. They do not yet extend into local government, and that will be quite challenging to do structurally. In terms of making available best practice, there is quite an open conversation.

Alex Chisholm: You might want to mention the use of products.

Tom Read: I am just looking at the data here. While GDS was set up not to address local government but to address central Government, 255 English local authorities use the GOV.UK Notify product, and 57 use the GOV.UK Pay product. As I mentioned earlier, a lot of the response to the Covid crisis in the NHS was using some of the central products that we run in GDS. There was a 700% increase in the need for alerting people, which was using the GOV.UK Notify platform.

At a more working level, I work really quite closely with colleagues in NHSX, because the NHS has built its app and its identity service, and we are sharing patterns there and making sure that we are learning from each other.

Q69 **Chair:** I will just highlight that we had quite some useful evidence from NHS Providers about some of those challenges, but we see repeatedly that it is easier to buy a bit of kit that will satisfy medics and patients—and potentially politicians—than it is to invest in the hidden bits of the system and everything from cyber. We could discuss the NHS forever, because it is a very large employer.

Turning to you, Ms Davinson, what do you think is the biggest challenge? What levers could you still do with so that we could see a change? What is the single biggest change or improvement that would make your life easier and improve the lot for citizens?

Joanna Davinson: That is an excellent question.

Q70 **Chair:** I am assuming not legislative change, from the tone of the conversation today.

Joanna Davinson: No. The biggest challenge is still the breadth and complexity of what we do in Government. By necessity, therefore, Government is quite federated, and so putting in place common approaches to things requires quite a lot of work and alignment. A lot of consultation needs to happen. That is probably the biggest challenge.

Q71 **Chair:** You might not want to name names here and you might want to tell us privately, but we have all been on this Committee a while. Sometimes a permanent secretary can quite openly say to us that they are not going to play ball with some other part of Government. Sometimes they wrap it up in a slightly more diplomatic way and sometimes they are very open

about that, but they run their shows. They are in charge of their Departments. There is a very strong departmental culture in different Departments. Do you find that you sometimes come up against people who say, "Well, that is just not important in our Department, because we have bigger fish to fry and more important things to do"?

Joanna Davinson: Yes, that does happen. We have some levers that we can apply. We need to be thoughtful about how we apply them, so spend controls are the obvious hard lever that we have. We can stop things happening, but I would rather not be seen as the person who stops things. I would rather be seen as the person who enables things. The thing that would help—and this is the approach that we are aiming to adopt—is to build a cross-system understanding of where we need to work together: what are the things that we need to do consistently versus the things that Departments just need to go do? We have to be careful that the things that we need to do consistently are not everything. We have to make that a relatively small subset of things.

Chair: So they want you because you are going to help them.

Joanna Davinson: Exactly. We should all think about how we move into the cloud in a consistent way, so that we maximise our interoperability, for example. That is a very live conversation among the chief technology officer community, and there is quite a high degree of alignment.

Q72 **Chair:** I would expect them to agree, but it is the perm secs, Mr Chisholm.

Alex Chisholm: There is a strong degree of pull from Departments as well. It is not all push from the centre. There are two areas particularly. We talked already about the single login. When we were going around and talking to the different Departments 15 months ago, we described where we were today and where we wanted to get to. They certainly had plenty of criticism for Verify as a historic product, but no one argued with the logic of saying, "We have a situation now with 100 different logins. If we carry on, it is going to be 1,000. Is that really what we want the citizens of the UK to suffer for the next decade?" That would be crazy. No successful online retailer would say, "You have to re-register to buy your shoes versus your trousers versus whatever else you are buying," and nor should Government.

The Departments were saying, "We want you to do this and to do it well. We want to be involved in that. We do not want it to be crazy costs, but we need that from you," so there was strong pull there. They also come to us a lot and say, "We are dealing with hugely powerful firms here with massive scale; some of them are like countries in terms of their overall turnover. We need to have an HMG approach here. We need to use Government to negotiate with them, to get leverage and the value that we need," so there is quite a lot of pull from Departments as well.

Q73 **Chair:** Reflecting over a decade, that is quite a turnaround. We have certainly seen examples, to Mr Grant's earlier point, of recent projects that are still failing. From what you have said today, if it was all working

smoothly, it would be a lot smoother. We might see some delays on certain projects to make them work better and we could see some pitfalls along the way, but we would not be seeing the number of failures that we, as a Committee, look at. People sometimes say, "You only look at the failures," but there are enough of them to keep us busy for quite some time. That is the problem; that is the reality, and it is all taxpayers' money. Last week, Ms Davinson, you were here on something that had spent a lot of taxpayers' money and not delivered anything, so why are the ones that are starting new still failing?

Tom Read: I fundamentally agree with the conclusions of the NAO Report and I would boil them down to the fact that technology is sometimes still selected too early in the process. In some of those programmes that are listed in the NAO Report, we are outsourcing things that we do not yet understand. We are trying to outsource risk, and I do not think that we can do either of those things. We have moved a long way in the last four or five years, and I am pretty confident that we are not going to be seeing a repeat of these sorts of failures, if we stop those two principal bad practices.

Chair: Ms Davinson was nodding along there.

Joanna Davinson: A third point is that we are still on that journey in terms of building capability. We are not as sophisticated as we need to be in how we think about these digital programmes. The real sophistication is similar to points that we made earlier, which is understanding it well enough to be able to pivot and change when you need to, and having the courage to do that when it needs to be done. That comes from experience, and we do not yet have enough people with that depth of experience across our portfolio, which is enormous. It is a very wide digital portfolio.

Q74 **Chair:** Mr Chisholm, we have looked a lot at data on this Committee, and it is a perennial concern of ours. We had a big bit of work on data across Government, as you may remember. Surely, that is also pretty pivotal to getting these new digital programmes working. Are you confident and can you reassure us that the data collection by Departments and agencies across Government is maintained at a level that will enable some of these digital programmes to deliver on success, or is there a gap there?

Alex Chisholm: That is a key success requirement. I absolutely agree with you. The data is collected well. The core thing is more about the sharing and the quality of the sharing between Departments. That needs to be done in a way that respects all legal requirements.

Q75 **Chair:** You say that data is collected well. Where it is, it may be, but, for example, we highlighted, as a small part of a recent report on employment programmes, that there was a very big differential in young, black unemployment at the end of the last quarter of last year, with a significant increase. I will not go into the figures, but, when we challenged the Department on this, it kept saying, "We are beginning to collect the data." This was a pretty basic bit of information, you would have thought. For a

very people-intensive, customer-facing part of an organisation, it is about ticking a box—it would not have been much more than that—and then aggregating and learning from that. It was a very shocking response to get on something that has been a consistent issue since before the Race Relations Act.

Alex Chisholm: We focus on user data and having a much more differentiated and real-time picture of that. That is an absolutely fair observation. Nevertheless, I still think that we have a huge amount of data now that we do not really make use of, because we do not integrate it. With single login, being able to offer a more personalised service and integrate our understanding of people on their different journeys through life and the different interactions that they have with the state is going to be incredibly useful and impressive. We know from other inquiries you have been running that fraud and error is a huge area of risk. We can greatly reduce that by having a much better use of data. It is really important.

To pick up on what the biggest challenge is going forward, what would make the biggest difference probably is to focus relentlessly on the end user experience. If we take that attitude, we will very rarely go wrong.

Chair: Customer-focused Government or citizen-focused Government.

Alex Chisholm: That is incredibly important. We have talked about overcoming the weak parts of our legacy IT and technical debt. Sharing data very smoothly on top of that, enhancing our internal capabilities for DDaT and not relying too much on outsourcing are the core ingredients in future success.

Chair: We have had a really good discussion. I will turn to Sir Geoffrey for a final question.

Q76 **Sir Geoffrey Clifton-Brown:** Mr Chisholm, what you were saying about value delivered is really important. I am thinking not only in PAC terms of value-for-money, but about the wider meaning of the word, which could include improving people's lives. Is there an equivalence in Treasury mind between delivering a physical piece of infrastructure or even a service that HMRC might want to introduce in terms of providing the money for a digital transformation programme?

Alex Chisholm: That is getting into the economic appraisal, which is to be measured not only, as you say, in pounds and pence, but in the social value that you get from something. The future farming and countryside programme is a good example. You had an initial look at it in 2019, but I am sure it will be before the Committee in the future. In setting that up as the replacement for the CAP, although it will be nothing like the CAP, we are trying to pursue the public value goals within that, which include air and water quality and environmental amenities. Those are things that have value, even though you cannot measure them so easily in pounds and pence. That is absolutely built into the design of that programme. Digital delivery is a key part of it.

We are very mindful in the design of that programme that we need to look at the total cost of ownership. It is not only what it costs to administer it within the Department and the Rural Payments Agency, but what it costs the users of that scheme—mainly farmers and rural people—how much of their time is used up in it and what they need to invest to interact with it. Again, that plays to looking at the wider value picture and not just the immediate expense of rolling out the technology.

Q77 **Sir Geoffrey Clifton-Brown:** We know that Government have a very big amount of money that they are going to spend on infrastructure over the next 10 or 15 years. Is there a line in there of how much money we are going to spend on digital transformation over the next 10 or 15 years?

Alex Chisholm: Within the characterisation that I gave you before of digital projects or information, communication and technology projects, those are ones that, as Tom said, are straight technology projects. Every single Government programme has a strong digital element to it. Even in something that feels very physical, like building a new road, there will be a huge amount of digital planning. They use digital twins in all their work. If you look at the software development component, that would be very big, even in a physical construction project.

Most of the digital expenditure is not on technology projects but is embedded in those bigger programmes. It is probably about £20 billion a year, so it is an incredibly important area and I really welcome the Committee's and the NAO's focus on it.

Chair: Mr Chisholm, you said earlier that you had looked at 230 digital and data projects that are going reasonably well. It would be really helpful to have a list of those, so that we can then pick up and watch them as they are going through with different Departments, if that is okay. You can write to us with that.

Can I thank our witnesses very much, including Angela MacDonald online? You probably cannot see us all, but I hope the rest of your HMRC conference goes well and that the transformation programme in HMRC continues apace. I thank Tom Read, Alex Chisholm and Joanna Davinson here in the room. This is a subject that we will be returning to often. We are reassured a bit by some of what we are hearing, but it is easy for you to tell the story and we shall be challenging every single Department in front of us about how they are delivering on these ambitions, because, in the end, the citizen and the taxpayer deserves a better service. I am sure that that is what we are all aiming for. Thank you very much.