

Enabling digital government



AUDITOR GENERAL 

Prepared by Audit Scotland
June 2019

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Exhibit data

When viewing this report online, you can access background data by clicking on the graph icon. The data file will open in a new window.

Audit team

The core audit team consisted of: Gemma Diamond, Morag Campsie, David Love and Veronica Cameron, with support from other colleagues and under the direction of Angela Canning.



Key factors

Based on our audit work and good practice from other countries, we have identified a number of key factors that a government requires to enable digital government.



Each circle represents a section of this report (which you can navigate to), where we look at how the Scottish Government is performing in each factor, and what its future plans are.



The Scottish Government has a key role in developing the right skills and culture across the public sector and we cover these two themes throughout this report.



Key messages



- 1** Digital technology has the potential to help make public services better for Scotland's citizens. The Scottish Government set out an ambitious new digital strategy for Scotland in 2017. Building a digital government is an important part of that vision and is challenging, requiring all public bodies to work together. Some good initiatives have been introduced to enable change and there are examples of progress, but these are at early stages.
- 2** The Scottish Government needs to demonstrate more effective strategic leadership to encourage and promote digital government. It could do more to support organisations across the public sector to work more collaboratively with each other and with the third sector and industry. This might include establishing effective cross-sectoral forums to plan, share knowledge and information, and identify how different programmes interact with each other. The Scottish Government plays a leading role in identifying common platforms for use across the public sector, and in considering how best to deliver these.
- 3** The Scottish Government does not have a complete picture of what has been achieved across the public sector so far, including which actions have had the most impact and where there are gaps in progress. And it does not know how much public money is being invested across the public sector to achieve the strategy's actions, or what is needed to fully deliver on its ambition. This means it cannot properly prioritise the work that will make the biggest impact on public services and learn from experience.
- 4** The shortage of specialist digital skills makes prioritising limited resources more important. The Scottish Government provides digital guidance to public bodies, such as involving users in service design, but needs to more effectively anticipate and plan for the increased demand for new digital skills that new approaches create. The Scottish Government has developed training for existing staff and created new career paths, but a significant skills gap remains.
- 5** A new digital assurance framework is helping individual projects to address the risks historically faced by public sector ICT projects, but the Scottish Government has not had enough staff to share common lessons learned. Its Digital Directorate has not effectively prioritised which projects it can make the biggest difference to, or clearly communicated what support it can offer. It introduced new procedures to improve how it prioritises projects during 2018.



Context



1. The world is changing at a fast pace, and digital technology is a key driver. New technology makes it possible to do things that were not imagined ten years ago. For the public sector it offers governments the opportunity to change how they deliver public services and interact with citizens. But it also requires governments to behave differently to make the most of these opportunities. Improving public services in today's world is more about changing cultures to embrace uncertainty, to put citizens' needs at the heart of service delivery, and to truly collaborate across organisations and sectors. Building a **digital government** ⓘ is the responsibility of all public bodies, but vision and leadership need to come from the centre.

2. Digital technologies are required daily to keep organisations functioning and delivering public services, often to the most vulnerable in society. Governments need to be able to predict and react quickly to emerging technology, and help public bodies understand how this could be used to improve outcomes for citizens. Governments also need to assess what risks new technology brings and put appropriate safeguards in place.

3. Governments around the world are trying to transform public services and build digital governments. It is difficult to do, takes time and many governments encounter challenges. Each country starts from a different position due to culture, the state of existing systems and history, so it can be difficult to compare progress. However, lessons can be learned from across the world and we share some examples from other countries in this report and in the **international supplement** ⓘ available on our website.

4. In building and enabling digital government, governments need to:

- show strategic leadership
- set the tone and provide support and guidance
- decide what they lead on and what areas they will help others to develop and transform
- develop processes to make collaboration and innovation easier for others.

5. Building a digital government is an evolving process. It cannot be done quickly and needs to be embedded in policy design through to service delivery, requiring everybody to work together. Ten years from now joined-up public services, enabled by digital, will be the norm and not an aspiration. Significant effort and investment are needed now to achieve that aim.



Digital government is modern government

Building digital government is about bringing the public, private and third sectors together with citizens, to design services that meet users' needs and deliver better outcomes; making best use of technology and innovation.



About our work and this report

6. Digital technology and transformation are so fundamental to public sector reform and how organisations operate that we look at these as part of all our audit work; from audits of individual public bodies to national performance reports on different policy areas.

7. In May 2017, we published a set of digital principles for organisations to consider when planning and implementing digital programmes. These were based on findings from our previous audit work and that of other audit agencies. All our reports focusing on digital, and useful guidance, can be found on our [digital e-hub](#). Our forward work programme is available at www.audit-scotland.gov.uk

8. This report is the first in a series that will look at digital progress across the public sector. It focuses on the strategic role of the Scottish Government in enabling digital government. It:

- sets out what progress the Scottish Government has made since May 2017 against **key factors** of a government's role ([Key factors, page 4](#))
- identifies what further work is required and what is currently planned
- uses examples from other countries to highlight how governments have made progress.

The Scottish Government published its digital strategy for Scotland in March 2017

9. The Scottish Government refreshed its digital strategy (the strategy) in March 2017, reflecting the rapidly changing world of digital transformation. This set out its vision for Scotland to be recognised throughout the world as a vibrant, inclusive, open and outward-looking digital nation. The strategy is ambitious and aims for digital to be at the heart of everything government does: designing services around citizens, developing digital skills, and encouraging innovation and collaboration across sectors to increase productivity and economic growth. The strategy can be broadly broken down into the following areas, reflecting the high-level outcomes it is designed to achieve:

- **digital government** – for example, developing common system design and technology standards and putting assurance arrangements for overseeing digital projects in place
- **digital public services** – for example, working together to deliver digital public services based on common platforms, such as developing a common payments system that the whole of the public sector could use
- **connectivity** – for example, implementing superfast broadband and 4G and 5G programmes
- **digital economy and skills** – including programmes to build and improve digital skills across businesses and schools



Principles for a digital future: Lessons learned from public sector ICT projects
May 2017



Realising Scotland's full potential in a digital world: A digital strategy for Scotland
Scottish Government,
March 2017



Superfast broadband for Scotland: Further progress update
September 2018



- **digital participation** – for example, programmes to help citizens learn new digital skills
- **cyber resilience** – for example, the development of action plans to ensure people and businesses are safe online.

10. The strategy contained 130 actions and relies on action from organisations across the public, private and third sectors. Our view is the Scottish Government is responsible for monitoring, reporting and driving progress as a whole. It also has lead responsibility for delivering some specific actions of the strategy.

11. This report looks at how the Scottish Government is leading digital transformation and monitoring progress against the strategy and focuses on the progress it has made in delivering the areas of ‘Digital government’ and ‘Digital public services’. These areas are fundamental to transforming service delivery. The Scottish Government is currently developing a cyber resilience framework for public bodies and is working with partners across the economy to promote the use of data as a source of service transformation and economic growth. We have not included these areas in our report. The issues covered in this report will be a useful reference for the new cyber resilience framework.

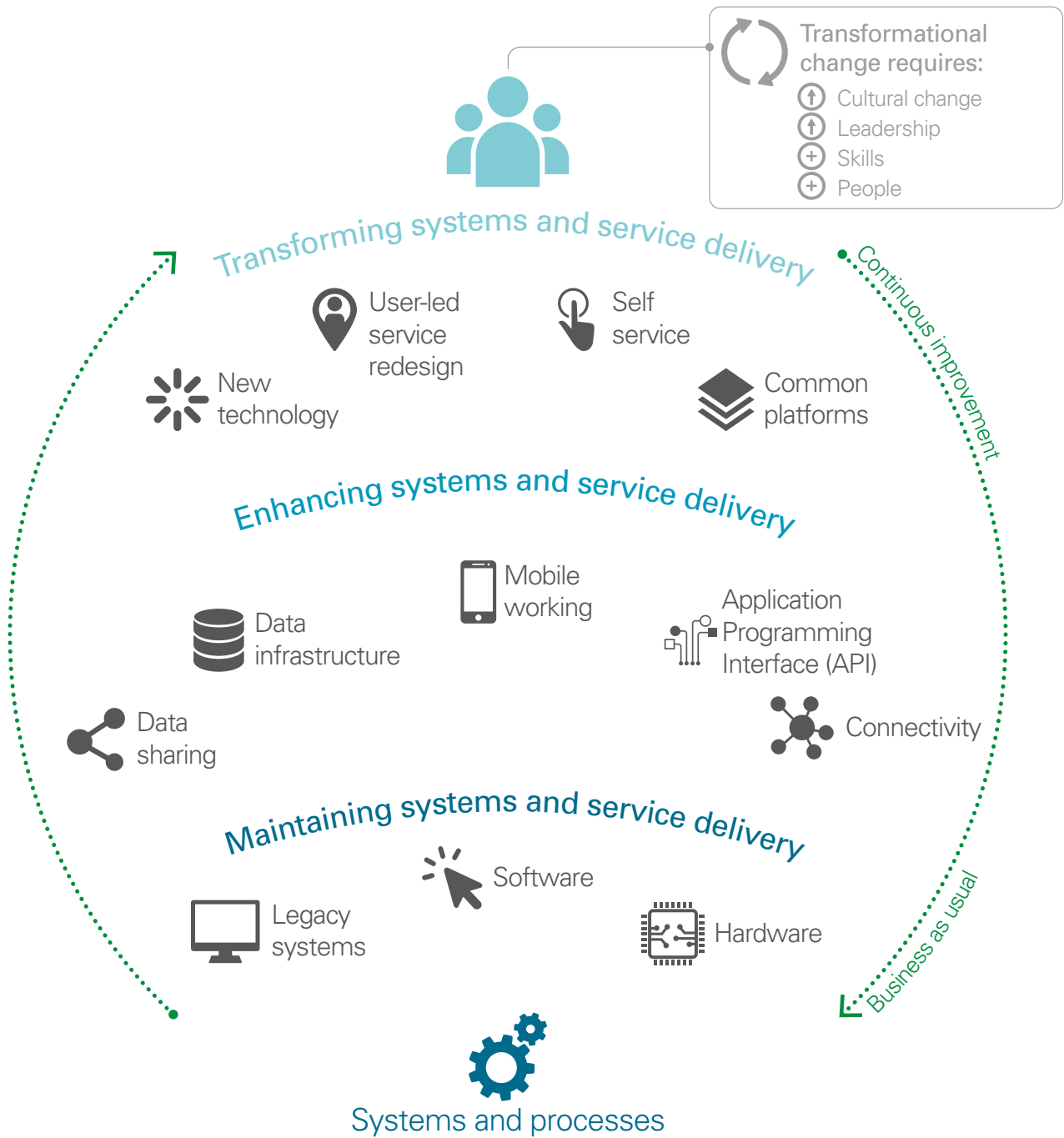
Transforming public services requires investment in technology and people

12. Transforming service delivery is not just about using innovative technology and getting people online. It is about redesigning how services are delivered to better meet users’ needs and is as much about people and changing cultures as technology. It might involve investing in new innovative technology, or it could involve reusing existing technology and infrastructure in a different way. This needs leadership, coordination and strategic planning to ensure systems, processes and people across sectors can work together to have most impact. Eventually, what is new, innovative and transformative today will become the day-to-day operations of the future ([Exhibit 1, page 9](#)).

Exhibit 1

Enabling digital government and transforming services

Digital government has lots of different parts. It includes maintaining current and legacy systems, as well as preparing for and delivering new ways of working supported by technology. It is constantly changing and what is new today will become business as usual in the future. Transformation can take a long time and happen in a series of small steps, or be a fundamental change to a whole process.



Strategic vision and leadership



The Scottish Government is in a unique position to play a strategic role in leading, overseeing, influencing and coordinating activity across the public sector to ensure Scotland’s digital strategy is delivered.

The Scottish Government has not yet shown the strategic leadership necessary to meet its ambition

13. The Scottish Government set out its digital vision for Scotland in the strategy. To achieve this vision, all sectors, including the private sector, must work collaboratively. The Scottish Government is in a unique position to look across activity in support of the strategy and identify where actions are having impact, where gaps remain, and any barriers to progress. It can bring stakeholders together to discuss progress and understand how best it can help to improve progress and remove barriers. Strategic leadership means leading by example, putting building blocks in place, inspiring people with innovative ideas and helping to make these happen. Scotland is a small country, and this provides a real opportunity for the Scottish Government to bring everyone together to deliver the ambitions of the strategy.

14. Strategic leadership also involves creating an environment and culture where public sector organisations can work and trial things together, and with industry, in a consistent way to common standards while learning from experience. Our *Principles for a digital future* highlights the importance of creating the right culture. It is hard to create and change, but leadership has an essential role in setting the tone at both a strategic and programme level.

15. The strategy’s vision is ambitious, and the Scottish public sector has tight finances and a limited number of people with the right skills to deliver this. Prioritising activities and knowing where best to direct scarce public sector resources and skills for the greatest impact are important, as well as collaborating with and making best use of the knowledge, skills and resources of the private and third sectors.

16. Enabling change through digital technology is the responsibility of the whole of government. While one area – the Digital Directorate within the Scottish Government – can take the lead and coordinate activities, it requires the support of the whole of government at a senior level.

17. The Scottish Government created a new ministerial role for Public Finance and Digital Economy in June 2018. This provides more focus and visibility to the strategy’s delivery and helps wider parliamentary scrutiny of digital activity. It



Principles for a digital future: Lessons learned from public sector ICT projects
May 2017



Digital Directorate structure

[Exhibit 2 \(page 14\)](#)



demonstrates a commitment to digital government and aims to champion digital across the public sector. Digital connectivity remains the responsibility of the Minister for Energy, Connectivity and Islands.

18. Throughout this report there are examples of where the Scottish Government is starting to make progress and demonstrate strategic leadership:

- The Health and Care digital strategy is a joint strategy between the Scottish Government, Convention of Scottish Local Authorities (COSLA) and NHS Scotland and is aligned to the Scottish Government's digital strategy.
- The Scottish Approach to Service Design (SAatSD) is an approach to designing services around citizens' needs and is being promoted jointly by the Scottish Government and Local Government ([Case study 1, page 12](#))
- Common standards and assurance reviews are helping organisations to deliver digital programmes ([Ensuring value for money](#) )
- Its CivTech programme is demonstrating new ways for the public sector to buy and develop solutions by working with small and medium-sized enterprises ([SMEs](#) )
(Facilitating innovation and looking to the future )

19. However, the Scottish Government needs to take a wider strategic role to champion and lead progress across the whole of the public sector. This includes creating a more collaborative culture between sectors, where respective roles are understood and information is shared openly to support learning and the development of strategic joint plans. Areas where we consider the Scottish Government needs to do more include:

- Monitoring and reporting on overall progress against all actions in the strategy. This includes collecting and sharing evidence across the public sector on which actions are making the most difference and where gaps remain, to inform future priorities and action.
- Understanding the collective investment required to achieve the strategy, including the level of current and future investment available to support digital transformation.
- Facilitating strategic collaboration across the public sector. This will enable discussions on overall priorities, cross-sectoral approaches and future training needs.
- More systematically looking across the public sector and internationally at the opportunities and risks around new and emerging technologies. It should use this to inform future Scottish Government activity, including workforce planning, and to support public bodies to make the most of these opportunities.



SME

A small or medium-sized enterprise. Defined as a business employing fewer than 250 people, and annual turnover of less than £40 million.



Case study 1



Scottish Approach to Service Design – A strategic approach to redesigning services across sectors

- The Scottish Government created a new leadership role of Chief Design Officer (CDO) in July 2018 to lead and develop a new way of designing and delivering digital public services across the public sector.
- The Scottish Approach to Service Design was introduced by the Scottish Government in late 2018. The approach puts the citizen at the centre of services. Processes and underlying systems are then redesigned around citizens' needs. It needs organisations, people, systems and processes to be joined up, often across different sectors. Transforming services in this way needs cultural change, new skills, training and support.
- The CDO has developed guidance and a training programme with the Local Government Digital Office delivering training sessions.
- Central government, health and local government bodies are starting to adopt this approach.
- The approach and further guidance will be rolled out to more organisations across the public sector during 2019/20. The CDO started an initial assessment of the impact of this Scottish approach in early 2019.

Source: Audit Scotland

International example 1




Strategic approaches leading digital governments around the world

The Simpler, Faster, Better Services Act 2019 empowers the Chief Digital and Data Officer (CDDO) of the Government of Ontario, Canada, to oversee the provision of digital public services. The Act authorises the CDDO to set principles and standards for public sector organisations with regard to developing and using digital services and making data publicly available.

Source: Audit Scotland; and the Government of Ontario, Canada





Supplement: Enabling digital government, International examples
June 2019 




The Scottish Government needs to ensure that it has the necessary skills and experience at senior level to lead change

20. Our *Principles for a digital future* highlighted the importance of having appropriate skills and experience at a senior level within an organisation. The Scottish Government's role in driving forward digital transformation across central government and the rest of the public sector makes this even more critical. This requires experienced people who have the time to lead and influence change. **Technical foresight**  and commercial experience are areas in which the public sector often lacks skills and the Scottish Government is no different. The Scottish Government's Strategic Insights Unit (Directorate for Performance and Strategic Outcomes) recently commissioned a study to look at future technologies and their potential impact (**Facilitating innovation and looking to the future** ). Commercial experience remains a gap and it is looking at ways it can bring more industry expertise into government, for example through the Digital Fellowship programme ([Exhibit 6, page 34](#)).

21. In summer 2018, the Scottish Government restructured its digital directorate ([Exhibit 2, page 14](#)). The new structure is clear and gives focus to key areas such as assurance, service design, data, and collaboration with public sector bodies and industry. It also provides a leadership role for areas including service design and data.

22. The Scottish Government did not plan effectively for the approaching retirement of the Chief Information Officer (CIO) as part of this restructure. The Scottish Government's CIO had strategic oversight of Scottish and central government ICT programmes, overseeing the assurance framework and ensuring quality (**Ensuring value for money** ). The CIO was also head of the **Digital, Data and Technology profession (DDaT)**  and responsible for the Digital Talent and Development team. The CIO's retirement in April 2019 leaves a significant gap in technical knowledge, experience and a network of industry contacts. The Scottish Government is considering how best to replace the CIO role and provide more strategic technical foresight. It has decided to create a new Chief Technology Officer (CTO) with an interim CTO being put in place from June 2019. They will fully scope the requirements for the permanent role.

23. We highlight in the **Ensuring value for money**  section of the report that the assurance function and staff of the Office of the Chief Information Officer moved to the new Internal Audit and Assurance Directorate.



Principles for a digital future: Lessons learned from public sector ICT projects

May 2017 



Technical foresight

The ability to know what technology will be available and of use in the medium term, and to understand the opportunities and risks this may present.



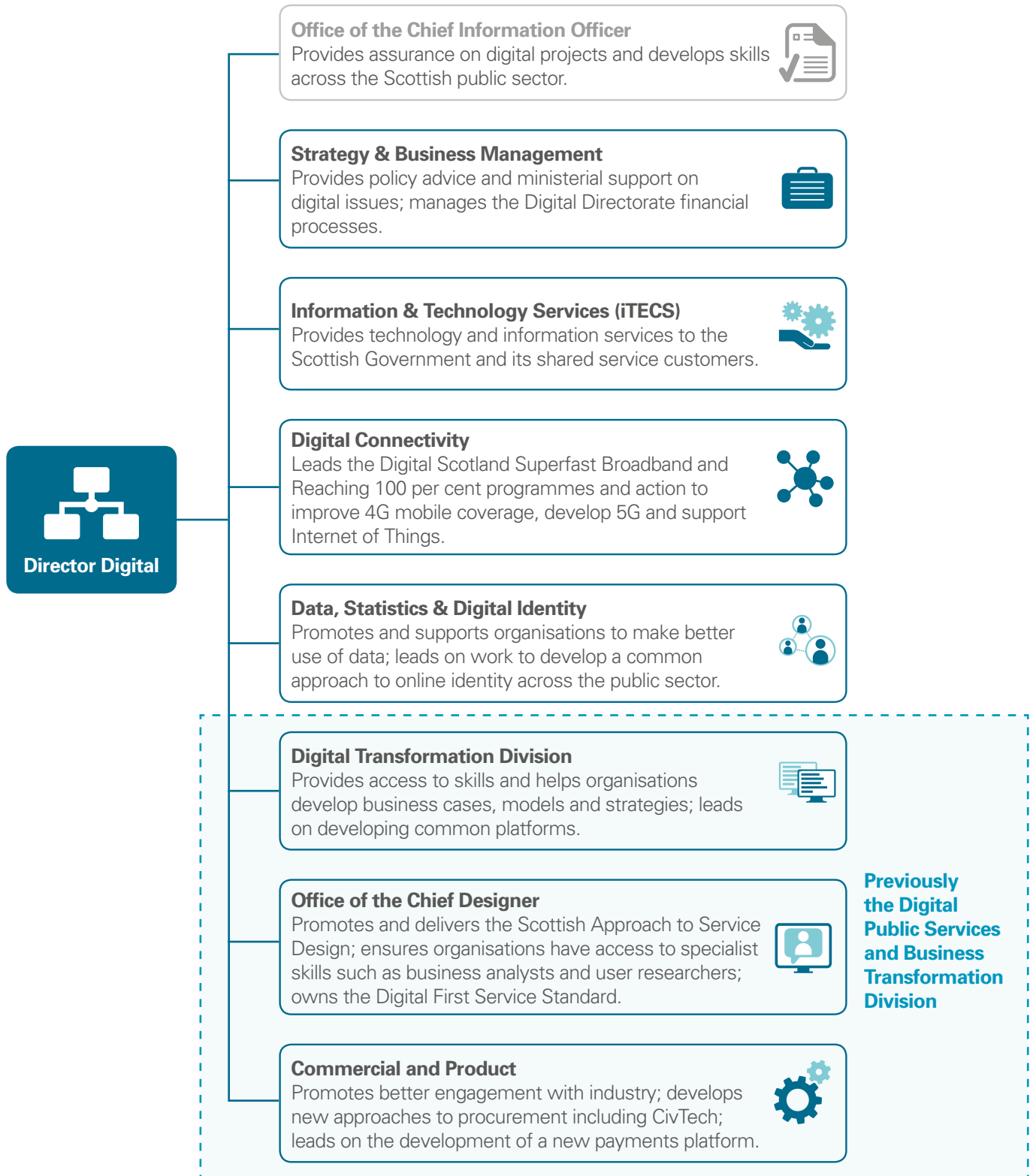
Digital, Data and Technology profession.

Designed to attract and retain people with the required skills ([Exhibit 6, page 34](#))



Exhibit 2

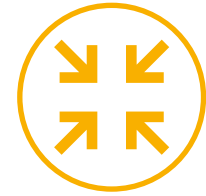
Scottish Government Digital Directorate's structure



Note: From April 2019, the assurance team within the Office of the Chief Information Officer moved to the Scottish Government Internal Audit and Assurance Directorate. The Digital Talent and Development Team and other functions of the OCIO remain within the Digital Directorate.

Source: Audit Scotland

Investment



The Scottish Government’s digital strategy requires long-term investment to achieve its vision. Understanding what has been invested and what is available for future investment will help the Scottish Government understand how deliverable its vision remains.

The Scottish Government does not know if the digital strategy is achievable within current and future budgets

24. When the Scottish Government introduced the digital strategy there was no baseline assessment, across the public sector, of how much money would be needed to deliver it. The Scottish Government needs to understand whether bodies across the public sector have the money and people required to transform services and deliver the ambitions of the strategy. Understanding what has been achieved to date will help inform the Scottish Government’s medium-term financial strategy and identify areas where it might need to provide more support.

25. The Scottish Government does not know how much money is currently being invested, nor how much is still required to deliver the digital strategy across the whole of the public sector over the medium term. This includes how much money is spent maintaining existing systems and services, or the proportion of spending that is transforming services by putting new infrastructure and technology in place to better integrate service delivery ([Exhibit 3, page 17](#)).

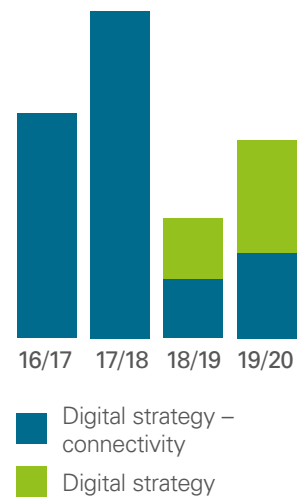
26. Since 2016/17, the Scottish Government’s annual budget has included funding for delivering its digital strategy. This is largely in relation to its connectivity programme and the work of the Digital Directorate. It does not reflect the full picture as several programmes across the public sector are contributing to delivering the strategy over a number of years. The Digital Directorate provides support to a variety of central government transformation programmes, for example implementing the Scottish Government’s social security programme.

27. There are a number of programmes being delivered by individual bodies across the public sector which are enabling services to be provided in a digital way. These require investment and common skills. Currently, there is no clear picture of activity across the public sector and what is being achieved.

The Scottish Government knows what is being invested and delivered across central government but not more widely

28. The Scottish Government maintains a register of central government ICT programmes including the estimated full-life cost of each. These projects are at different stages in their lifecycle and not all can be classed as transformative or directly contributing to the digital strategy. It is the best available indicator of how much is being invested across central government. There are currently around 351 ICT projects on this register. The estimated full-life cost is around £1.2 billion.

Digital strategy budget figures



2016/17
£86.3 million

2017/18
£125.7 million

2018/19
£46.3 million
(£23 million)



2019/20
£76 million*
(£43.1 million*)

*2019/20 Draft Budget




Of these 351, 26 are considered **major ICT projects** . [Exhibit 3 \(page 17\)](#) shows the number of major projects currently planned or under development over the next 13 years. These 26 projects represent around seven per cent of all registered central government digital projects, but their estimated costs amount to 70 per cent of the total.

The Scottish Government needs to jointly map out the significant current and planned projects across all sectors

29. The level of investment will change across the lifecycle of these programmes. Digital programmes can last anywhere from a couple of years to over ten ([Exhibit 3, page 17](#)). These programmes require Scottish Government funding and are also competing against each other for the same programme management and digital skills which are in short supply (**Supporting organisations** ). NHS Scotland also has ambitious plans, as part of its Digital Health and Care Strategy, to create a **digital platform**  over the same period. This will require funding and similar skills.

30. Mapping out all the significant programmes across the public sector will help the Scottish Government, and public sector bodies more widely, plan the level of investment required over time and predict when certain skills are likely to be in high demand. This information would then help inform the Scottish Government's medium-term financial strategy, and that of other public sector bodies. It would also help identify common systems that could be developed collaboratively, and inform skills programmes such as the Scottish Digital Academy, to ensure that people will have the right skills when needed ([Exhibit 6, page 34](#)).

31. The Scottish Government is in a unique position to be able to map out the significant current and planned programmes. To do this, it needs to make better use of the information it has available (for example, the central government major projects register and procurement information) and to work with NHS Scotland and the **Local Government Digital Office**  to identify major programmes and predict when potential pressure points might arise.



A major project is one with a lifetime cost over £5 million, or that is deemed to be of significant risk to the organisation in terms of capability and capacity.



NHS Scotland's digital platform aims to create a common data store that different organisations' operating systems will be able to access and use to deliver services and share information.



The Local Government Digital Office is formed of 32 Scottish councils joining to support and drive the local government digital transformation strategy developed during 2015/16. The councils jointly fund the operating costs of the Digital Office and share its resources.

International example 2

International research indicates that there is no standard way of measuring digital investment



Practical examples of the ways that other governments measure spending include:

- The Australian Digital Investment Management Office provides online reporting of the progress against timelines and budgets for various digital programmes.
- In Denmark, the Danish Council for IT Projects conducts and reports financial reviews on a twice-yearly basis.

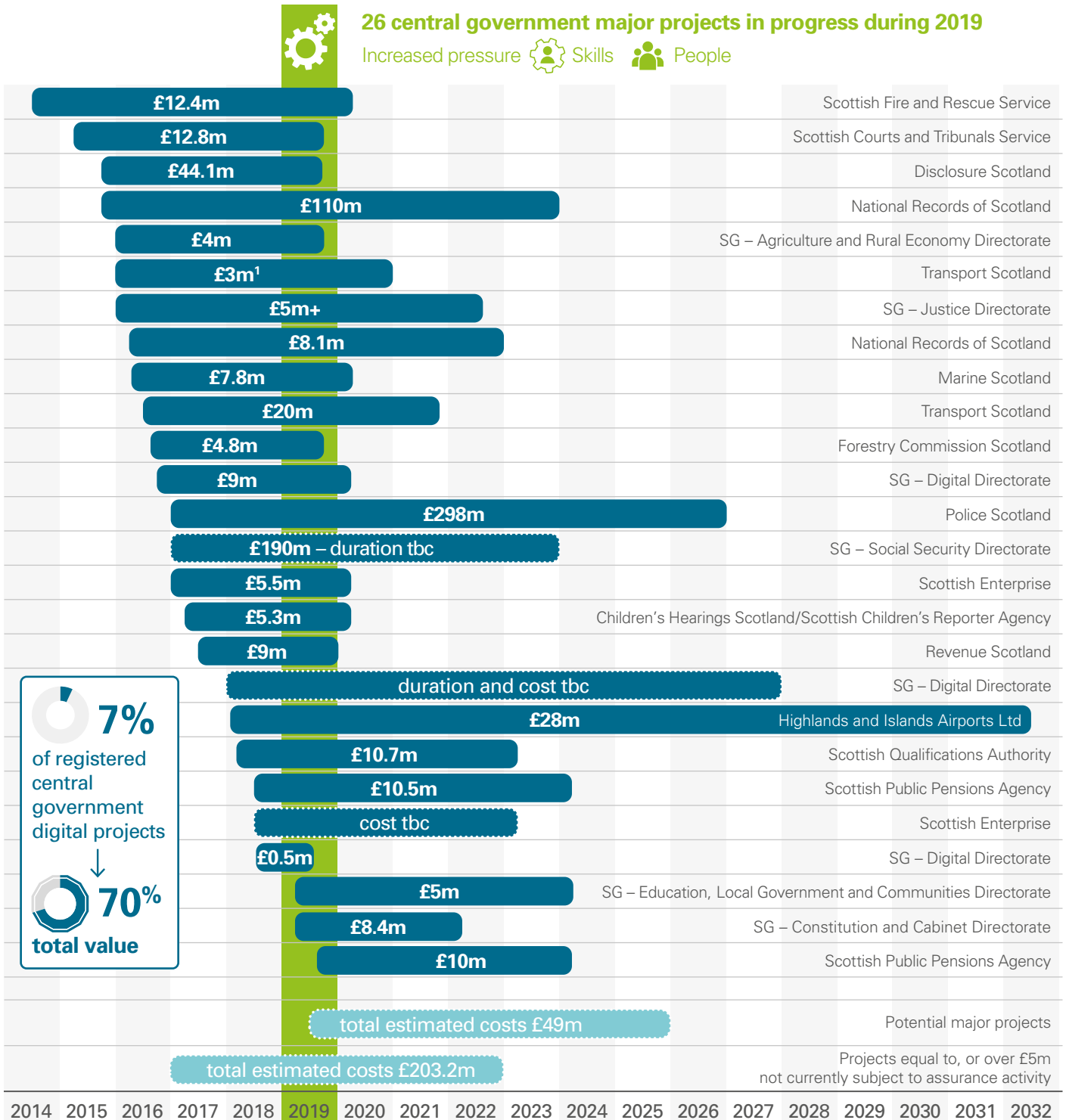
Source: Audit Scotland; the Australian Government; and Danish Government



Exhibit 3

Timescales and cost of major digital programmes in central government

Out of a total of 351 registered ICT projects in central government, 26 are major ICT projects. They make up around 70 per cent of the current known total value. There will be many more digital and ICT programmes going on in other sectors at the same time.

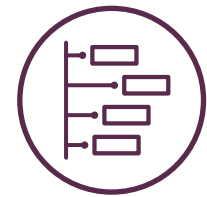


SG: Scottish Government

Note: 1. £3 million over 4 year life of contract, £4.6 million over 8 years with extensions.

Source: Scottish Government update on major ICT projects to the Scottish Parliament Public Audit and Post-legislative Scrutiny Committee, May 2019

Prioritising and monitoring progress



It is important for the Scottish Government to monitor progress towards delivering the digital strategy and prioritise activities, to ensure that the strategy’s outcomes can be delivered within available resources and timescales.

The Scottish Government does not know what progress has been made against all the actions of its digital strategy across the public sector

32. The Scottish Government’s strategy sets out what it wants to achieve but not how it will deliver this or who will be responsible for it. It sets out a high-level measuring framework within the strategy and the Scottish Government provides an annual update to ministers setting out what has been achieved against this framework and milestones for the next year. The annual updates are not published or widely shared with partners across the public sector and do not clearly set out:

- what progress the wider public sector is making
- how progress is aligned to the specific actions in the strategy
- what lessons are being learned from current developments
- what the current gaps and priorities are for the next year and subsequent years and whether priorities have changed.

The Digital Directorate reviewed its monitoring arrangements between August and December 2018. This identified:

77

actions that the Digital Directorate is directly responsible for

6

actions with no person identified to lead

15

actions with no recent progress recorded

50

actions assessed as outwith the Digital Directorate control

20

actions with no person identified to lead

40

actions with no recent progress recorded

This process has also identified actions where the scope had widened, or could be combined with others. Some new actions were also identified. The approach was being refined in May 2019.



33. The Scottish Government did not establish processes for monitoring benefits and progress against all the actions in its strategy across the public sector from the start. As a result, it does not know if the actions across the public sector to deliver its digital strategy are being progressed and are effective in delivering what they set out to achieve, or if there are any gaps. This means that the Scottish Government cannot effectively make decisions about where it needs to do more to support actions from the strategy. Without understanding what is working, and where the money is being spent (**Investment** 📉), it cannot prioritise activity effectively.

34. The Scottish Government has recognised this and has put processes in place to address this. In December 2018, the Scottish Government also commissioned a study to help it determine progress against its digital strategy, what had been achieved, and how effectively it was supporting central government bodies.

Governance arrangements are complex, and boards were not monitoring progress effectively

35. During 2018, the Scottish Government recognised that its governance structures for overseeing digital transformation were not operating effectively. Roles were not clear meaning there was a lack of oversight and coordination of activity. Governance boards also recognised that the pace of digital transformation was slower than desired.

“ Intentions, measurements and evidence supporting outcomes should be considered early in the planning process. ”



Planning for outcomes
June 2019 📄

Governance and management board papers from 2018 show that:

the pace of digital transformation was slow, and there was a lack of a cross-sector approach

there were not enough people with the right skills to deliver the Digital Directorate’s support and assurance functions

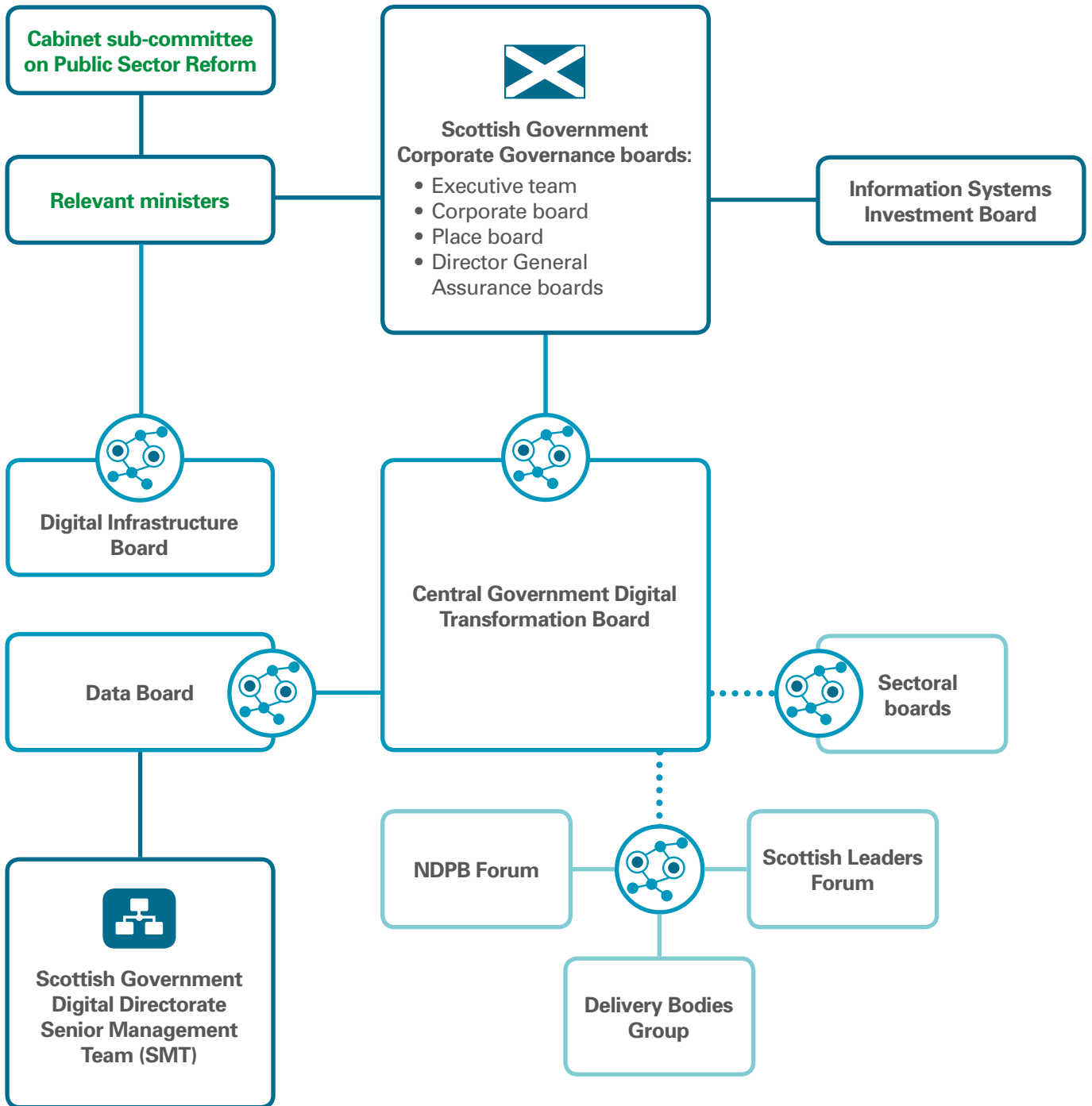
central government bodies did not know what services the Digital Directorate could provide or how to access them

36. A new structure was put in place from October 2018 with a Central Government Digital Transformation Board (CGDTB) created to take responsibility for monitoring progress against the strategy ([Exhibit 4, page 20](#)). This provides more strategic oversight of the strategy and recognises the fundamental role of digital transformation in delivering public sector reform. However, it remains a confusing structure and the remits of CGDTB and other groups, and ownership of the strategy, need to be more clearly articulated across the public sector.

37. The Digital Directorate’s senior management team (SMT) is the management board responsible for monitoring Scottish Government action against the strategy’s aims ([Exhibit 4, page 20](#)). It did not receive a detailed report setting out the number of actions, identified leads and monitored progress until December 2018. Previously, it had been looking only at the projects it was leading or directly involved in, meaning there was no strategic view of progress across the public sector for 21 months following publication of the strategy.

Exhibit 4

Governance and management structures for overseeing the strategy from October 2018



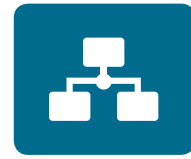
Cross-sectoral membership designed to facilitate collaboration



The Digital Directorate has introduced new arrangements to help it prioritise more effectively

38. The Scottish Government’s Digital Directorate is responsible for monitoring progress against the strategy and delivering key aspects of it. It is also responsible for the day-to-day support and running of core Scottish Government systems and supporting and assuring central government digital projects. To help deliver the strategy and support organisations effectively, the Digital Directorate has to prioritise what it does and what it gets involved in.

39. During 2018, the Digital Directorate reviewed its structure and operating model. A new process was developed to determine how the directorate, particularly the Digital Transformation and the Office of the Chief Designer divisions, prioritise and decide which Scottish Government and central government projects they provide support and expertise to. An assessment matrix and questions were developed to help teams do this.



Digital Directorate structure

[Exhibit 2 \(page 14\)](#)

During 2018, the directorate reviewed its structure and operating model. This identified that:

it did not have enough people to support the 90 projects it was involved in

there was no clear process in place for prioritising what projects the directorate supported

divisions within the directorate were working in isolation and people did not know if they were working with the same organisations

40. The new structure and operating model, alongside the new governance arrangements, aim to help the Scottish Government prioritise and monitor its activity more strategically, ensuring it is focusing on the areas where it will have most impact. For this to work, the Scottish Government needs to communicate the new structures and operating model to central government organisations, and across the public sector.

Facilitating collaboration



The strategy sets out the Scottish Government’s vision to ‘collaborate across cultures and borders’. This requires the Scottish Government to work with others and facilitate collaboration with other governments, and between sectors, users and industry.

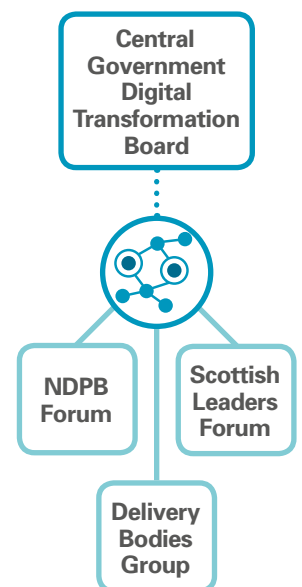
The Scottish Government needs to better demonstrate how its structures will facilitate strategic collaboration across sectors

41. The digital strategy provides a common vision and goals for all sectors. The Scottish Government needs to take the lead and create a culture where everyone understands this shared vision and their respective role in delivering it. Fully implementing the strategy requires everyone to work together to align activities and deliver joined-up services that meet users’ needs. Leaders across all sectors are working in a complex and fast-changing environment, so it is important that mechanisms exist to regularly:

- share data, information and ideas
- understand each other’s role and plans and how they are contributing to implementing the strategy
- identify interdependencies between different programmes.

42. The Scottish Government’s revised operational and governance structures are designed to facilitate a collaborative approach ([Exhibit 2, page 14 and Exhibit 4, page 20](#)). Membership of the main governance boards includes people from across the public sector, third sector, industry and academia. In addition, there are a number of cross-government forums that are designed to facilitate sharing of information and knowledge more generally. The chair and members of the Central Government Digital Transformation Board (CGDTB) engage with these forums.

43. However, there is no executive level, cross-sector strategic forum specifically for digital which brings people together to discuss strategic priorities and delivery plans and agree respective roles ([paragraph 36, page 19](#)). The Scottish Government needs to assess whether the current forums in place can fulfil this role or whether there are any gaps. It also needs to consider whether the CGDTB is receiving enough information from other cross-government forums to take a view on which organisations need to collaborate and how it can help facilitate this.



Governance and management structures
[Exhibit 4 \(page 20\)](#)



44. The Scottish Government needs to do more to collaborate with and learn from governments across the world on a consistent basis and share what it has learned more widely. It is starting to do this and there are examples of where it has looked at actions of other governments for individual projects ([International example 3, page 25](#)).

45. The Scottish Government's digital director and members of his directorate sit on a variety of programme and project boards across sectors. Joint membership of governance boards ensures that people are linking up at programme level and can share knowledge. The Scottish Government needs to use the information from these meetings to provide a strategic view of progress, and to coordinate and prioritise its activities across the public sector.

46. Collaboration also requires joint planning across sectors. Joint planning was one of the actions identified in the Digital Directorate's review that did not have an owner ([paragraph 32, page 18](#)). Having joint plans will help facilitate collaboration and help prioritise and direct resources to where they are most needed.

“ Chief Digital Officers, or equivalents, in Scottish Government, local government, NHS Scotland and the third sector will be encouraged to develop and implement joint action plans and we will share our ideas and experiences internationally with other progressive digital governments.

Action from strategy

”

47. Collaborating with industry is also important. The public sector is often reliant on the commercial sector to deliver its transformation and digital programmes. Often there is a lack of inhouse expertise and knowledge of emerging technologies in public sector organisations. People from the technology sector can bring new ideas, different experiences and ways of working that the public sector can learn from.

48. The Digital Directorate's new commercial and product division has a critical role in establishing better links with industry ([Exhibit 2, page 14](#)). It is currently:

- looking at how the public sector can better use the skills and experience of suppliers. An example of this is the Digital Fellowship programme ([Exhibit 6, page 34](#))
- developing more collaborative approaches between the public sector and SMEs. CivTech is an example ([Case study 6, page 42](#))
- assessing whether there is a need to develop quicker ways to buy products and services more aligned to today's fast pace of delivery.

49. Designing services around users also requires organisations to collaborate with the people who will use the system or service being designed. This is encouraged as part of the Scottish Approach to Service Design. We have previously highlighted how the Scottish Government's Social Security programme has created user experience panels to help design the benefits and supporting systems.

“ Effective joined up working is vital to achieving outcomes.”



Planning for outcomes

June 2019




Social Security: Implementing the devolved powers

May 2019

Paragraphs 86–89



Common approaches and standards are helping to foster a more collaborative culture

50. Collaboration cannot happen without the right culture and infrastructure. People need to be open to sharing ideas and working together. Systems and processes should support the safe and secure sharing of data and information. **Cloud technologies**  are starting to make this easier, but organisations will need help to make the transition to this.



Cloud technology involves delivering computing services, such as software, data storage and servers over the Internet.

(Exhibit 7, page 41)

A number of Scottish Government initiatives are helping to encourage and demand a more collaborative approach. For example:

The Digital First Service Standard requires organisations to consider using cloud technologies and common platforms and make data available where appropriate when designing new services

New data standards are currently being designed to ensure safe and better use of data

The Scottish Approach to Service Design is led and designed by the Scottish Government and is largely delivered through the Local Government Digital Office

51. These initiatives are significant developments. The Local Government Digital Office has adopted the Digital First Service Standard and NHS Scotland has committed to adopting them. Some individual bodies from across the public sector are starting to use the Scottish Approach to Service Design. Having all sectors working to common standards and approaches should make collaboration easier.

Case study 2



The Digital Champions programme is about creating networks as well as skills

The Scottish Government launched its Digital Champions programme in October 2013, primarily to develop the digital skills and awareness of public sector leaders (**Supporting organisations** ). It provides the opportunity to learn about innovation, technology and how to deliver digital programmes. However, it also provides opportunities to collaborate by creating a network of leaders with a common interest in delivering better public services.

Collaboration is easier when there are established networks and the right culture. This needs to happen at all levels of an organisation. Creating cross-sector forums for people involved in digital programmes at different levels within an organisation should also be considered.



International example 3

Scottish Government collaboration with international governments



Both the CivTech Programme and Office of the Chief Designer have engaged with international governments and public organisations to share knowledge and experience. During 2019, for example, the Office of the Chief Designer will jointly deliver service design seminars with the UK Government Digital Service, and an International Design in Government conference with the Government of the Netherlands.

Source: Audit Scotland; and the Scottish Government



Supplement: Enabling digital government, International examples

June 2019 

International example 4

Cross-government collaboration around the world



Several governments around the world include senior roles or groups whose function is to facilitate collaboration and lead programmes for digital government. In New Zealand, the Digital Government Partnership, a collection of stakeholders from across the government, supports the Chief Digital Officer and facilitates an integrated approach to implementing New Zealand's digital strategy.

Source: Audit Scotland; and the New Zealand Government

Ensuring value for money



The Scottish Government has a role in making sure that central government bodies invest money appropriately and deliver value for money. This includes implementing robust assurance processes for digital and ICT projects, so that projects that do not meet the needs of users or deliver value for money can be stopped.

The Scottish Government strengthened its approach to assurance in 2017

52. We have previously reported on the Scottish Government’s strategic oversight and assurance arrangements.¹ These were introduced to improve the design and delivery of central government digital and ICT projects, and ensure they meet users’ needs and deliver value for money. The Technical Assurance Framework (TAF) includes the following:

- Major project reviews: These were initially launched in 2013 and have been revised four times since. They apply to over 100 central government organisations and require that major ICT projects undergo independent assurance reviews at key stages (or gates) of a project to ensure that they are being governed and delivered appropriately. A project’s senior responsible owner (SRO) needs to put appropriate assurance processes in place to help successfully deliver a project.
- **Digital First Service Standard** ⓘ (Digital First) assessments: All new digital public services projects in central government are assessed against 22 standards to ensure services are designed around the user, and that organisations have the business and technical capacity and capability to deliver the project.



Digital First Service Standard

Launched in 2017. Based on UK Government Digital Service’s Digital by default standard.

Designed and owned by the Scottish Government’s Digital Directorate.

Between October 2016 and March 2019:

92

reviews and assessments performed

49

of these were on Scottish Government projects

23

reviews were for the Social Security programme



Case study 3



Examples of the Technical Assurance Framework reviews adding value

The OCIO asks project senior responsible owners (SRO) for feedback on completion of all reviews. Project teams from seven organisations also provided us with feedback.¹ These indicate that both the major project reviews and Digital First assessments are adding value in a number of ways, and also highlight areas for improvement:

Examples of how reviews have added value include:

- Providing assurance on governance, procurement and project management approaches.
- Learning new skills and knowledge from review teams to help inform future projects.
- Raising awareness of user research and how to design digital services.
- Highlighting weaknesses such as arrangements for handing over the software from the developer to the business.

Feedback also included some suggested improvements:

- Earlier engagement with assessors to help project teams prepare. Some teams had not anticipated the amount of preparation required.
- Tailor reviews more to the type of projects to make sure they are as streamlined as possible.
- Ensure there is some continuity in the review team between different phases of a project to ensure a consistent approach. It has proved difficult for the OCIO to get reviewers when a specific skillset is required.

Note 1: Feedback was collected from the following organisations' project teams: Scottish Environment Protection Agency, Scottish Enterprise, Historic Environment Scotland, Social Security Scotland, Scottish Public Pensions Agency, Registers of Scotland and National Records of Scotland.

Source: Audit Scotland; and Scottish Government

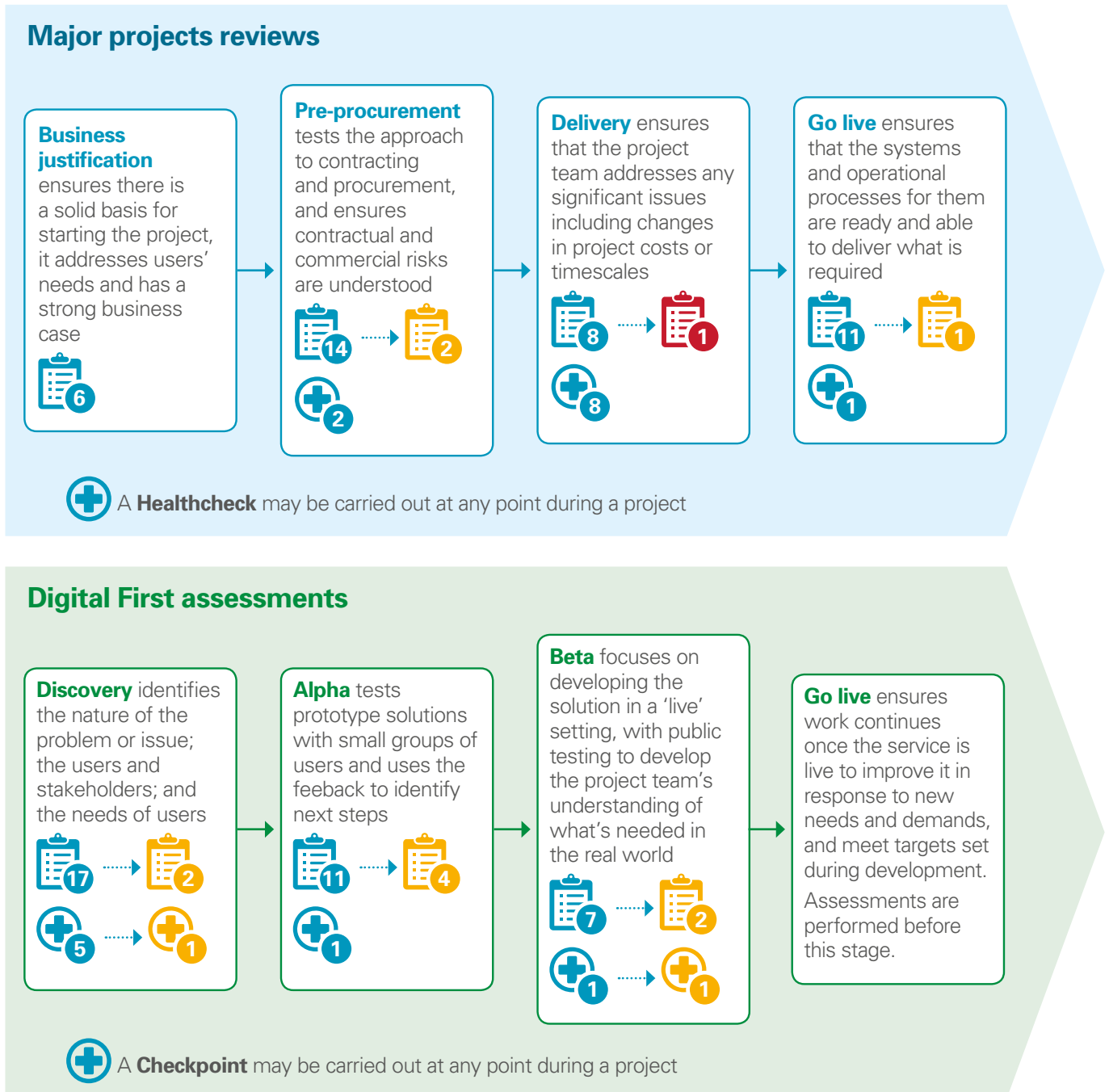
53. The major project review process was strengthened in 2017 with the introduction of a set of 'Stop-Go' assessment gates at key stages of a project. When the OCIO assesses a project as 'Stop', the organisation's accountable officer can continue with the project only if required improvements are made, or with ministerial approval.

54. The TAF is adding value by identifying gaps and ensuring these are addressed before projects can move to the next stage. This is helping projects put the key building blocks in place to deliver a successful digital project ([Case study 3](#)).

55. The majority of reviews have been at the initial stages of projects (discovery, business justification and pre-procurement) ([Exhibit 5, page 28](#)). This is a positive sign as it gives the project time to resolve any issues at as early a stage as possible. So far one project has received a 'stop' assessment, with 13 being assessed as requiring remedial action before moving to the next stage. Again, this demonstrates an effective process which is identifying issues and ensuring action is taken to resolve them before the project can continue. It is important there is transparency around this and that governance boards are fully aware of assessment results and actions taken ([International example 5, page 30](#)).

Exhibit 5

Number and type of reviews delivered by the OCIO between October 2016 and March 2019. Major project reviews and Digital First assessments are performed at key stages in a project's life cycle.



Total number of reviews / healthchecks / checkpoints carried out at that stage



Number of reviews / healthchecks / checkpoints requiring remedial action before continuing



Number of reviews requiring the project stops

Note: The Social Security Best Start Grant Phase 1 has been through all DF phases and three major project review phases.


Source: Office of the Chief Information Officer



56. Major transformation programmes, such as the Social Security programme, have a significant impact on the volume of reviews the OCIO has to perform ([Exhibit 5, page 28](#)). The OCIO uses existing frameworks and a pool of reviewers from across the public sector with different technical expertise, meaning that reviews must be planned well in advance. It has struggled to get experienced reviewers on occasion for Digital First assessments and has used commercial arrangements to help. This highlights the need for a joint map of all significant programmes across the public sector to identify when people and skills will be needed for the programmes and for reviews. This is the responsibility of the Scottish Government, but it also relies on individual programmes supplying the right information to the OCIO in advance.


The Scottish Government has not shared or learned lessons from reviews

57. A major part of the OCIO's role is to identify common issues and share lessons from reviews. As a result of staff absence there was a delay in putting a feedback analysis tool in place, and difficulties in recruiting meant the OCIO did not have the capacity to fulfil this role during 2018.

58. It is also evident that the introduction of the **Digital First Service Standard**  and the delivery of major programmes such as the Social Security programme has increased the volume of reviews, meaning that the OCIO has not been able to perform this critical function. Although its budget increased annually in anticipation of the increase in the volume of reviews, this was not sufficient to meet demands.

59. The potential impact of not identifying and sharing lessons learned is as follows:

- Common issues or weaknesses in central government bodies' digital programmes will be repeated across organisations.
- Assurance will identify similar issues repeatedly over time, meaning that the Scottish Government will not make effective use of its limited resources.
- Opportunities to learn from others' good practice could be missed.
- The assurance process does not continuously improve and adapt to the fast-paced change in delivery and, as a result, stops being effective.
- Common gaps in knowledge and skills are not identified and built into Scottish Government training programmes and workforce plans.

60. When designing and revising standards and common approaches, such as the Scottish Approach to Service Design, the Scottish Government needs to consider what impact this might have on the wider demand for specific skills and capacity. We cover this in more detail in the **Supporting organisations**  section.

61. The TAF is not currently fully adopted by other sectors. NHS Scotland is reviewing its own assurance arrangements and is considering potential future arrangements. Expanding the coverage of shared assurance processes and digital standards across government would be a positive step but could place significant demands on an already limited digital skills market at both a programme level and for review teams.

OCIO annual expenditure and number of reviews




The Scottish Government expects to publish its revised Digital First Service Standard in summer 2019.

Revisions are aligned to the UK's Government Digital Service (GDS) review of its equivalent standard and take account of feedback from an independent review performed in 2017/18.



The Scottish Government has created a new integrated assurance team to better coordinate and plan reviews

62. The Scottish Government created an integrated assurance team during April 2019. This was to provide a more coordinated approach to all Scottish Government assurance activities and to align with the Digital Directorate restructure and the retirement of the CIO. The new team combines the functions of the OCIO assurance team with internal audit and the Programme and Project Management Centre of Expertise (PPM-CoE), which is responsible for performing **gateway reviews** .

63. A new directorate has been created and is led by the Chief Internal Auditor. This aims to ensure that major project reviews and Digital First assessments are independent from both the owner of the standards and from the digital projects under review. The precise operational arrangements for the integrated assurance team were being developed during April 2019. The move creates potential for a more coordinated approach to overall assurance arrangements and resourcing. It will allow the OCIO assurance team to have greater visibility of wider Scottish Government portfolio plans and what projects might be on the horizon.



Gateway reviews

Short focused reviews performed at key stages of any major project (infrastructure, digital etc).

There are six types of gateway review.

As well as opportunities there are a number of risks that the Scottish Government should consider when designing the operational arrangements for this team:

There have been capacity issues within existing assurance teams. It may be difficult to attract the required people to the team to perform reviews and share lessons learned

Moving the OCIO from the Digital Directorate is important for independence but could mean losing technical knowledge and insights from the day-to-day interaction with technical experts

The retirement of the CIO means there are fewer experienced people to check the quality of review reports before they are sent to the SRO. This could result in a reduction in assurance quality and trust in the process

64. As it finalises the new organisational arrangements, it is vital that the Scottish Government considers these risks and clearly communicates these important changes and what they will mean for central government bodies.

International example 5

Approaches to technological assurance



The progress of government digital programmes is monitored and assured in different ways around the world. In Australia, the Queensland Government reports publicly on the status of digital programmes through online performance dashboards open to the public. Government organisations in New Zealand can benchmark their own risk maturity and identify improvements through engaging with an online self-assessment tool.

Source: Audit Scotland; the Australian Government; and New Zealand Government

Supporting organisations




The Scottish Government has an important role in supporting organisations to deliver digital and ICT projects by providing access to the required skills, expertise and technology.

The Digital Directorate is supporting central government organisations but needs to better understand what impact it is having

65. In order to support organisations effectively, the Scottish Government needs to know the impact of the services it provides. This will help inform what future support, skills and training it needs to develop and how it delivers this.

66. The Scottish Government created the Digital Transformation Service (DTS) in summer 2015 to support central government organisations developing and delivering digital transformation projects. It did this by pooling and sharing digital skills and expertise that would otherwise be difficult for individual organisations to access. This was partly in response to recommendations made in our Managing ICT contracts reports.² DTS provided a variety of services including:

- helping develop options appraisals, business cases and digital strategies
- access to key skills such as business analysts, user research, technical architects, and programme and commercial management.

67. During 2018, the DTS was supporting around 90 individual projects. However, it had not considered where best it could add value and prioritise its support to make best use of the skills and resources it had. It undertook a review and put processes in place to address this (**Prioritising and monitoring progress** ). DTS assesses the benefits it expects to achieve at the start of each engagement and collects feedback from the organisations at the end. However, there is no evidence that it strategically reviews the benefits achieved both in the short and longer term to know what actions are having the most impact.

There is a lack of understanding of available support

68. Feedback we received from a sample of central government organisations indicates that the services provided by the transformation service are adding value and are seen as helpful (**Case study 4, page 32**). There is evidence that not all organisations are aware of the full range of support that can be provided by the Digital Directorate or how to access it. The onus has been on each organisation to be aware of the available services and what support might help them.



Digital Directorate structure

[Exhibit 2 \(page 14\)](#)




Managing ICT contracts in central government: An update

June 2015 



69. The Digital Directorate was unable to provide support to some bodies looking for additional help in areas such as service design and user research, due to it not having enough people to meet demands. The directorate cannot provide support to every organisation so it is essential it has transparent processes in place to assess and prioritise what programmes it can lead and support ([paragraphs 38–40, page 21](#)), and signpost organisations to the full range of support available, including skills programmes and CivTech.

70. The directorate recognised the need to improve the service’s effectiveness in supporting government digital transformation. The DTS’s role and services were reviewed as part of the Digital Directorate restructure in 2018. This led to the creation of **three new divisions** .

71. The directorate was developing its operational arrangements and a new service catalogue in spring 2019. It needs to communicate its new structure and services across government, so organisations know what is available and how to access support. This will also help set expectations and help to ensure that it has enough people to meet the demand.

Case study 4

Examples of support the Digital Transformation Service provided



- National Records of Scotland – the organisation’s project team formed an ongoing relationship with DTS through staff secondment arrangements to support how its system was designed and structured, and its business analysis and user research. DTS also supported the wider organisation with staff recruitment for digital specialists.
- Scottish Enterprise – the organisation’s project team obtained DTS support and guidance for its user experience research and design, and its content design guidelines. DTS also helped the organisation to develop plans for how its systems would be designed and structured to improve their future scalability.

Source: Audit Scotland


The shortage of digital skills remains a barrier to progress

72. The shortage of digital skills across public and private sectors in Scotland presents challenges to the Scottish Government in achieving its ambitions for digital government. The Scottish Technology Industry Survey 2018 highlighted the two most important skill-sets for respondents as software and web development, and commercial and business support skills.³ Demand for cloud computing, cyber security and data-related skills is also increasing.

73. We have previously highlighted the importance of having the right skills for delivering successful digital and ICT programmes across an organisation. This includes specific digital skills and project and commercial management skills.



Three new divisions

Digital Transformation Division 

Office of the Chief Designer 

Commercial and Product 

Digital Directorate structure

[Exhibit 2 \(page 14\)](#)



Scottish Government analysis on its wider workforce during 2018 indicates that the skills most in demand are programme management, leadership and management and digital. Our recent report *Social Security: Implementing the devolved powers* highlighted that the Social Security programme had found it difficult to recruit the range of skills and experience required, with particular difficulties in securing digital and programme management skills.

74. The increase in digital projects and programmes across the public sector is increasing demand for these already scarce skills. New Scottish Government standards and approaches are also increasing demand for specific skills. For example, the Scottish Approach to Service Design, and the Digital First Service Standard, have increased demand for business analysts and user researchers for programme delivery and to perform assurance reviews ([paragraphs 56 and 69](#)). The Digital Directorate is responding to demand for skills by trialling new courses, including a Business Analyst course during January–March 2019. The Scottish Government needs to understand how its approach will affect demand for specific skills and factor this into workforce and training plans.

The Scottish Government has introduced initiatives to address the skills gap

75. International research shows that there is no common or simple approach to addressing digital skills gaps across the public sector. The Scottish Government has introduced a range of initiatives in recent years supporting the delivery of its digital strategy and individual organisations ([Exhibit 6, page 34](#)).

76. Alongside these initiatives, the Scottish Government is modifying its recruitment and selection practices for digital and technical roles. It recognises that recruitment processes may not fit with the competitive and fast-changing digital skills market. Measures to tackle this include trials of the following:

- shortening the recruitment process to reduce delays before an appointment is made
- adapting candidate assessment processes to better align them to those used in the technology industry; for example, CVs are accepted rather than using the standard Civil Service application forms and practical, real-life technical exercises are used to test candidates' skills
- giving major programmes, such as Social Security, more control over their recruitment arrangements to help fill vacancies more quickly.

77. However, a fundamental conflict remains between the Scottish Government's recruitment framework and the digital skills market, specifically the restrictions the Civil Service pay structure places on its ability to offer salaries that can compete with those available in the commercial sector. Offering a pay supplement for the DDaT profession helps but the Scottish Government recognises that more could be done to sell the wider benefits of working in the public sector. The Scottish Government now needs to address the shortage of critical commercial and programme management expertise, technical foresight, and to better coordinate plans across the public sector to help direct skills that are in short supply more effectively.



Social Security:
Implementing the
devolved powers
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[Paragraphs 86–89](#)



Exhibit 6

Scottish Government initiatives to address the digital skills gap





Initiative	Background	Impact	Future considerations
<p>Digital, Data and Technology profession (DDaT)</p> 	<p>Aligned to the UK Government Digital Service (GDS) DDaT framework.</p> <p>Scottish Government launched its version in December 2018.</p> <p>Over 40 job roles organised into seven job families:</p> <ul style="list-style-type: none"> • technical • product and delivery • user-centred design • data • IT operations • quality assurance testing • cyber security and information assurance. <p>Up to £4,000 annual supplement with some flexibility.¹</p> <p>620 people are now included within this profession across Scottish Government and associated bodies</p>	<p>This provides a clear career path to existing staff and potential employees. The additional supplement for these roles is similar to the ICT supplement previously offered. It is difficult for the public sector to compete with private sector salaries within its financial constraints.</p>	<p>The Scottish Government needs to keep these roles under review to ensure they remain the right roles to respond to the changes in demand for skills.</p> <p>The value of the supplement should be kept under review to ensure it remains competitive.</p> <p>More could be done to promote the other benefits of working in the public sector, such as flexible working, holidays and pensions, and the variety of work.</p>
<p>Scottish Digital Academy</p> 	<p>Launched in 2016.</p> <p>Run in collaboration with the GDS Academy, to ensure the training aligns with government digital needs across the UK.</p> <p>Focused on ensuring Scottish public sector organisations have a coordinated learning and development programme to develop and grow in-house capability to build digital services.</p> <p>Courses are largely focused on developing knowledge and skills in delivering Agile projects and designing services around users' needs.</p>	<p>Changing cultures is difficult and can take a long time, but this programme will help by developing specific skills and an awareness of Agile and designing services around user needs.</p> <p>820 people from 43 organisations across the public sector have attended courses.</p> <p>21 Scottish Government leaders have completed the Hands on Agile for Leaders programme.</p>	<p>The Scottish Government recognises it needs to further develop how it assesses the impact of these courses. For example, using case studies to demonstrate what has been learnt, and evaluating feedback and using this information to refine its courses to ensure they remain relevant.</p> <p>The Scottish Government is working with Codeclan to help develop coding and data analysis skills across the public and private sectors.</p>

Exhibit 6 continued

Initiative	Background	Impact	Future considerations
<p>Digital Champions</p> 	<p>Launched in 2013.</p> <p>The programme is open to chief executives, directors and digital leads across the public sector.</p> <p>Aimed at building awareness of digital technology and transformation. It also aims to increase knowledge and confidence to promote the digital agenda in their organisations to help drive change.</p>	<p>This is helping to build awareness at a senior level which will help change cultures.</p> <p>By March 2019, 275 public leaders from across central government had completed the programme; 19 of these were Scottish Government leaders.</p> <p>During 2018, a Scottish Government survey of participants found that:</p> <ul style="list-style-type: none"> • 80% felt the programme was either excellent or very good overall • 85% thought the programme had helped them to transform services, encourage different thinking, and be more innovative. 	<p>The Scottish Government plans to make changes to the programme for its 2019/20 intake, by involving an alumni working group to improve the impact of the programme.</p> <p>Survey respondents indicated that more needs to be done to create opportunities for collaborative learning for public sector leaders.</p> <p>Collaboration is important at all levels of an organisation and consideration should be given to widening this programme out to different levels of staff.</p>
<p>First Minister's Digital Fellowship programme</p> 	<p>Launched in 2018.</p> <p>Based on the US Government's Presidential Innovation Fellows Programme.</p> <p>It is aimed at bringing in affordable commercial and technology expertise from the private sector to generate shared learning.</p> <p>Secondments last for periods of between six and 23 months. Fellows remain an employee of their organisation.</p>	<p>This will help to address the shortage of commercial experience and technical foresight which has been lacking at a senior level in the Scottish Government. However, this is on a small scale.</p> <p>During 2018, three Fellows joined the Scottish Government for periods of between six and 23 months.</p>	<p>The Digital Fellowship is relatively new and the Scottish Government has not yet assessed its effectiveness. To have a real impact it will be important to ensure that Fellows come from a wide range of suppliers.</p>

Note 1. Annual supplement of up to £4,000 with flexibility for the Head of Profession to agree up to a maximum of £5,000 or up to 20% of salary.

Source: Audit Scotland



Building platforms



The Scottish Government has a strategic role in putting common systems and digital platforms in place for others to use, avoiding duplication and unnecessary cost.

The Scottish Government does not have a complete picture of what common systems currently exist across the public sector

78. It is the Scottish Government's role to develop a catalogue of existing licences, systems and services across central government. It can then use this information to make strategic decisions about what existing systems could be shared and used collaboratively, and what needs to be built or bought. The Scottish Government cannot develop or host everything itself and must identify which organisations are best placed to host and build common platforms.

79. There are over 200 public sector bodies in Scotland delivering different services using a variety of systems and licences. Although the types of service can be varied and wide-ranging, the systems that underpin them are not. For example, most organisations will require case management systems, finance, payroll and payment systems. These will be delivered through different software licences and legacy systems. This means there might be duplicate systems being used and paid for across the public sector for similar purposes.

80. The Scottish Government is planning to develop a catalogue of central government services, systems and licences during 2019, but it has taken too long to achieve this. This is an important step in identifying what common systems might be needed in the future, and what the Scottish Government will need to prioritise its investment in to have most impact and avoid duplication.



A key part of the strategy is to create a **digital ecosystem**. This is where common services and systems can be shared, created and reused on an accessible platform by different public sector organisations.

Between February and April 2018, the Digital Directorate undertook a review to determine what organisations would want from a digital ecosystem  and what the priorities should be.

This identified that:

there is no visibility of other organisations' systems across the public sector

a standard approach to reusing systems and services is required across the public sector

any catalogue would require associated systems and services to be attractive to customers



The Scottish Government has identified online identity and payments systems as potential common platforms

81. Governments around the world are starting to build common platforms to verify the identity of citizens and businesses and to pay and receive money to and from them. The Digital Directorate is leading on the development of the following common platforms for the rest of the Scottish public sector to use:

Digital Publishing

a platform to ensure a common approach to publishing information

Digital Identity Scotland (DIS)

an identity authentication and verification platform

Payments

a platform for public sector bodies to make and receive payments to and from individuals and organisations

Licensing

a platform designed to simplify and standardise the way government administers and grants licences

82. The Scottish Government chose these as the key platforms it could lead on that were of strategic importance and common across the public sector, and where organisations were not collaborating effectively.

83. The Digital Identity Scotland (DIS) and payments programmes are at early stages and are clearly linked. Checking the identity of a person or organisation applying to receive a payment is a critical function. Both programmes are also critical for the long-term solution for the current Social Security programme and it will be important for these three programmes to continue to be jointly planned and coordinated to ensure timescales are met, and that solutions meet users' needs. This is particularly important as it impacts on the most vulnerable people in society. [Case study 5 \(page 38\)](#) highlights the approach the Scottish Government is taking with its DIS programme.



Case study 5



Digital Identity Scotland programme. A collaborative and open approach to service design and building a common platform

The Digital Identity Scotland programme was set up in January 2018. It aims to test ways in which an online identity system can be delivered, safely providing easier and better access to public services for Scotland's citizens. Between December 2018 and 31 May 2019, the programme was carrying out user and technical research to understand what type of solution was required. An outline business case will be produced at the end of this phase.

Collaborative approach:

Key stakeholders from across the public sector are represented on the programme board, including the Social Security programme, NHS Scotland and local government.

A stakeholder group meets quarterly and consists of around 20 members from across the public and third sectors. It includes representation from organisations that currently deliver identity solutions and applications.

Changing cultures – open and agile and designed around the user:

- Board and group papers are published online in advance of meetings unless of a sensitive nature.
- The programme is being delivered using Agile project management.
- The Scottish Approach to Service Design is being used. Citizens and public sector workers who have experience of using online services have been included in preliminary scoping work.

Source: Audit Scotland



The strategy contains an action to develop a single sign-in and authentication process for businesses and citizens to prove their identity when seeking access to online services and support.






Facilitating innovation and looking to the future



The Scottish Government's role is to create an environment that encourages continuous innovation and improvement across the public sector.

The Scottish Government is developing ways to help organisations innovate and collaborate

84. The Scottish Government needs to lead from the front to create a culture across the Scottish public sector which is open to **innovation**  and collaboration (**Facilitating collaboration** ). Organisations are more likely to innovate when they work together, so the Scottish Government has to decide what mechanisms it can use to foster an innovative and collaborative culture, what it prioritises and invests in, and what regulations might be needed to ensure new technology is used ethically and safely.

85. The Scottish Government is developing new data standards and **innovation principles**  to support and guide organisations as they innovate. These need to be put in place quickly and in a way that does not stifle innovation.

86. The Scottish Government also needs to have a picture of what skills will be needed in the future to embrace emerging technology, and the benefits it could bring to the economy and how public services are delivered.

The Scottish Government's plans for using new technologies are unclear

87. The Scottish Government's Strategic Insights Unit (SIU) commissioned a study looking at international technology trends and how these might impact on policy areas over the next ten years. It was considering the findings of this study in May 2019. Identifying opportunities to use emerging technologies appropriately and safely in policy or service design, and understanding what public services of the future might look like, is a key role for the Scottish Government. It now needs to actively and systematically gather these insights and share them across the public sector to help public bodies plan and innovate.



Innovation is about translating an idea into a product or service that adds value.

This can be through using new technology, developing new processes, or using existing technology in a new and different way.



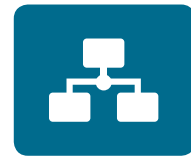
Innovation principles were being developed by the Scottish Government during spring 2019.



88. The work of the SIU and the creation of a Chief Technology Officer aim to address the shortage of technical foresight but will be dependent on getting a person with the right skills and experience. Collaborating with external organisations or international governments in this field could also help the Scottish Government to build its expertise.

89. There are examples of different parts of government investigating and trialling emerging technology ([Exhibit 7, page 41](#) and [Case study 6, page 42](#)), but this is largely happening in individual projects. The Scottish Government needs to share what has been learned across government and internationally. This will help maximise the benefits, prioritise future investment and make sure appropriate safeguards and training are put in place.

90. The Scottish Government needs to do more to put the right infrastructure in place to support change. Currently it is not leading by example in the use of cloud technologies, a key part of its strategy. An independent review of its Information and Technology Services Division highlighted that it currently does not have the required funding and people to innovate, and the adoption of cloud technologies remains aspirational. Ageing systems were also noted as one reason why the benefits of the cloud remained largely unexploited. This hinders the core Scottish Government but also some of its agencies which are reliant on its systems.



Digital Directorate structure

[Exhibit 2 \(page 14\)](#)

The Scottish Government has not fully capitalised on the potential of its CivTech programme

91. The CivTech programme is a good example of the Scottish Government being innovative. It has grown in size each year but is still on a small scale ([Case study 6, page 42](#)). The Scottish Government has not fully capitalised on the knowledge or experience it has gained from the CivTech process. To do so, it should set out plans for how it intends to expand the programme or use what it has learned to amend wider procurement processes ([paragraph 48, page 23](#)).

92. International example 6 demonstrates how two international governments are organised to look at emerging technology.

International example 6

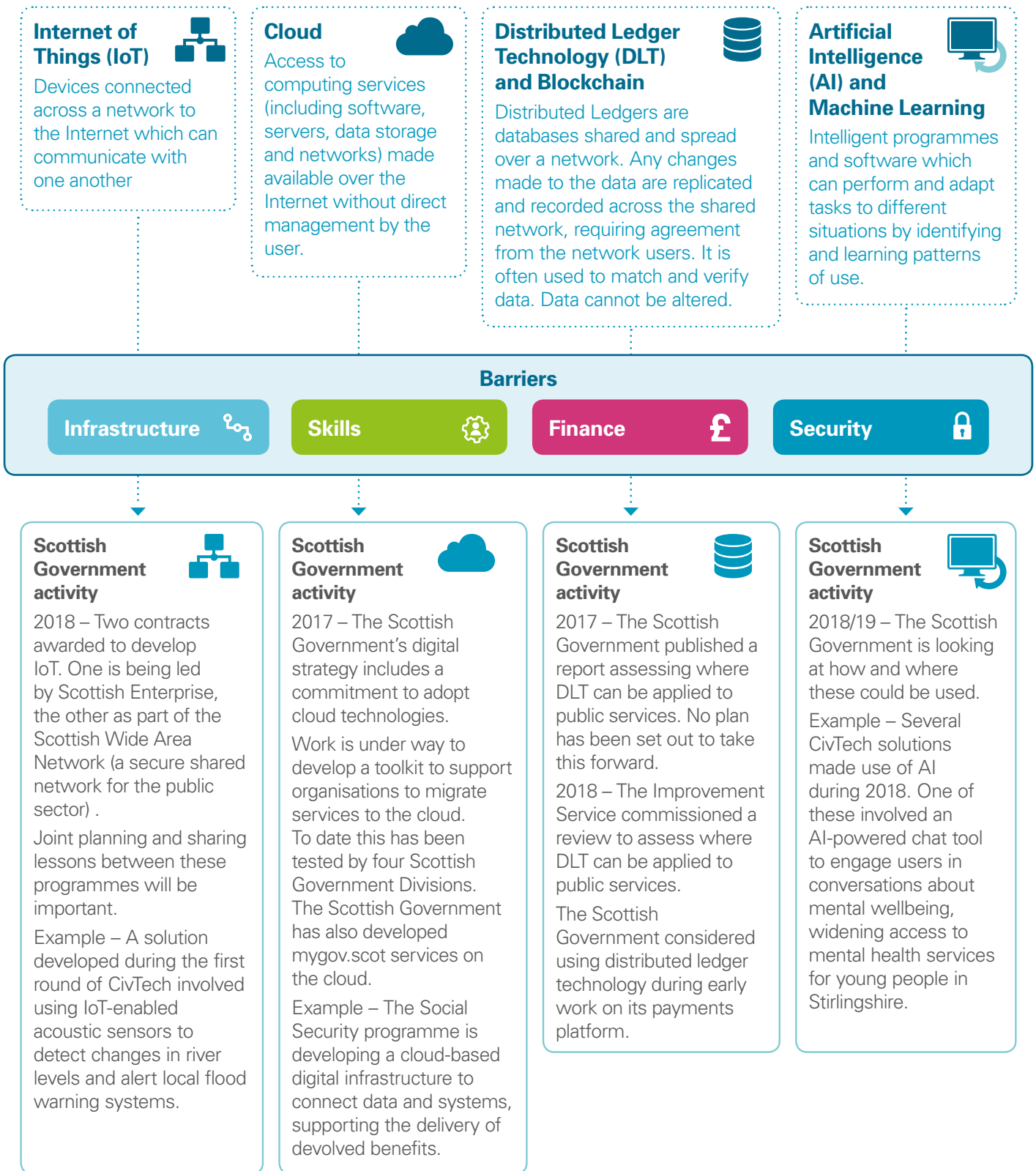
How other governments are organised to look at emerging technology



- The New Zealand Digital Government Partnership includes a working group whose role is to lead cross-government policy and regulatory work to identify opportunities and risks presented by emerging technologies.
- In Denmark, to develop technical expertise, the Consultancy Secretariat for IT operations facilitates cross-governmental knowledge sharing with an emphasis on professionalising government authorities' procurement and management of digital programmes.

Exhibit 7

Examples of new technologies currently being used and explored by the Scottish Government





Case study 6



The Scottish Government's CivTech programme is innovative and adding value

The CivTech programme (CivTech) began in 2016 to bring together the public and private sectors to find innovative solutions to public sector problems. It provides individuals, SMEs and other businesses access to public sector contracts they would not normally have access to through traditional procurement, helping them to grow and contributing to the wider economy.

Under traditional procurement, detailed requirements for a project are known at the start. Companies then bid to win this contract.

CivTech starts with a public body that has a problem that it does not know how to solve and so does not know the requirements at the start. This problem is then put out to small companies. The public body and companies then have the opportunity to collaborate to understand the problem and develop a solution. Funding is provided to develop a prototype with further funding available to the successful company to complete the solution.

It is demonstrating the advantages of earlier and collaborative engagement with potential suppliers. It provides public sector organisations with quick access to new innovative ideas and ways of working.

**28 projects
since 2016**

11 in 2018/19

57 jobs

Economic impact to date includes job creation and cost savings of £1.5 million for one public sector participant.

£4 million

Value of current and upcoming contracts for the products developed in first two years

In 2018, CivTech launched its Intrapreneur programme. This brings together representatives from public bodies and the companies involved in the CivTech process, to learn about different ways of approaching innovation, including business planning and how to use Agile methodologies. Workshops are run throughout the year aimed at creating a more entrepreneurial public sector.

Source: Audit Scotland

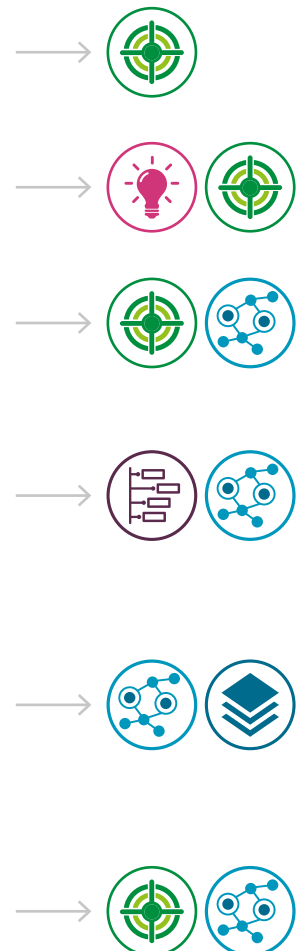
Recommendations



We have made recommendations for the Scottish Government to consider as it delivers its digital strategy. Our future work programme includes specific audits looking at digital across the public sector, but because digital is so fundamental to how all organisations operate now it will be a theme in all of our work. We will continue to monitor the Scottish Government’s progress in leading digital transformation as part of this.

To deliver its vision for digital government the Scottish Government should:

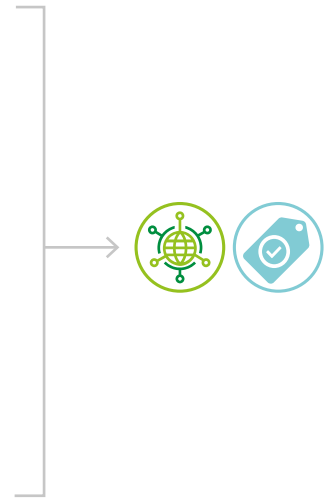
- articulate its strategic leadership role more clearly by facilitating a more collaborative approach and assuring itself that it has an appropriate level of investment and skills to fulfil this role
- ensure leadership has the technical foresight to understand technology developments and what this means for the public sector and the role of the Scottish Government
- ensure there is enough flexibility built into recruitment and procurement processes to cope with the fast-paced nature of digital transformation
- keep the new governance and monitoring arrangements under review to ensure they provide the required oversight and challenge of progress. This includes ensuring that there is an appropriate strategic forum to facilitate shared planning, prioritisation and action across the public sector
- jointly map out all significant digital programmes over time across the public sector to better prioritise and coordinate activities and people. This should include any interdependencies with the national platforms under development to ensure workforce, procurement and delivery plans are realistic and understood
- draw upon the knowledge and experience of other organisations and governments. This should include learning how similar forums across government, for example Council of Economic Advisors and International Council of Education Advisors, have been created to provide access to knowledge and expertise.





To better support central government digital programmes and ensure value for money is delivered, the Scottish Government should:

- communicate the Digital Directorate support service to central government bodies so they know what services are available
- ensure that the new integrated assurance team has the required people and skills to perform reviews and share lessons learned more widely
- ensure that all major project reviews and Digital First assessments are reviewed by an equivalent to the Chief Information Officer to ensure quality and consistency; and keep the framework and Digital First Service Standard under review to ensure they remain relevant
- focus on developing commercial and programme and project management skills as well as digital skills.





Endnotes



- 1 [*Principles for a digital future: Lessons learned from public sector ICT projects*](#) , Audit Scotland, May 2017; [*Managing ICT contracts in central government: An update*](#) , Audit Scotland, June 2015; and [*Managing ICT contracts: An audit of three public sector programmes*](#) , Audit Scotland, August 2012.
- 2 [*Managing ICT contracts in central government: An update*](#) , Audit Scotland, June 2015; and [*Managing ICT contracts: An audit of three public sector programmes*](#) , Audit Scotland, August 2012.
- 3 The Scottish Technology Industry Survey 2018, ScotlandIS, 2018.



Appendix

Audit methodology



We reviewed and used a range of information during our audit, including the following:

- Key documents, such as the Scottish Government’s digital strategy *Realising Scotland’s full potential in a digital world: A digital strategy for Scotland* and related internal and published documents.
- Papers and minutes from a range of Scottish Government boards and committees.
- Scottish Government budget documents.
- Feedback from Scottish central government bodies on their experiences of the support provided by the Scottish Government and the digital assurance framework.
- Digital strategies, associated publications, governance documentation and press releases from international governments and organisations, including:
 - The Australian Government and Digital Transformation Agency
 - The Canadian Government
 - The Danish Government
 - The European Commission
 - The International Telecommunications Union
 - The New Zealand Government
 - The Government of Ontario, Canada
 - The Organisation for Economic Co-operation and Development
 - The Government of Queensland, Australia.

We interviewed officials from the Scottish Government.

We also engaged with our Digital Advisory Panel.

Enabling digital government

This report is available in PDF and RTF formats, along with a podcast summary at:

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ISBN 978 1 913287 00 9 AGS/2019/3