

Public Audit Committee

30th Meeting, 2022 (Session 6), Thursday, 8 December 2022

Major ICT projects update

Introduction

1. At its meeting today, the Public Audit Committee will take evidence from Scottish Government officials on the management of public sector Information and Communication Technology (ICT) projects.
2. The Committee seeks to explore the work of the Digital Assurance Office, the Scottish Digital Academy, progress made against the recommendations of the Session 5 Public Audit and Post-Legislative (PAPLS) Committee in relation to its work on public sector ICT project, digital investment and some specific ICT projects that are referenced in the most recent ICT update received by the Committee.

Background

3. The PAPLS Committee considered a series of reports published by the Auditor General for Scotland concerning failings in public sector ICT projects which significantly impacted on public funds. The reasons for the failings were multiple, including public bodies underestimating the level of skills and experience required to manage a project, miscommunication between public bodies and contractors about what was required and a lack of oversight by the Scottish Government. The reports also highlighted poor planning by public bodies and the inability to recruit and train appropriately skilled ICT staff as other contributing factors.
4. Following its scrutiny of Audit Scotland's report, [Principles for a Digital Future: Lessons learned from public sector IT projects](#) in November 2017, the PAPLS Committee agreed to request six-monthly updates from the Scottish Government on the progress of Major ICT projects.
5. In March 2021, the PAPLS Committee published a report entitled [Key audit themes: Managing public sector ICT projects](#). The [Scottish Government's response to the report](#) is available on the Committee's webpage.

6. The Session 6 Public Audit Committee has agreed that it wishes to continue to receive these six-monthly updates. [The latest update](#), from July 2022, is available on the Committee's webpage.

Written evidence

7. The Scottish Government has submitted two pieces of correspondence to help inform today's evidence session. These can be found in the **Annexe**.

Next steps

8. The Public Audit Committee will decide any further action it wishes to take after it has taken evidence from Scottish Government officials.

Clerks to the Committee
5 December 2022

Directorate of Internal Audit and Assurance

Sharon Fairweather, Director



E: directorofinternalauditandassurance@gov.scot

Richard Leonard MSP
Convener
Public Audit Committee
Scottish Parliament
Edinburgh
EH99 1SP

1 December 2022

Dear Mr Leonard

DIGITAL ASSURANCE OFFICE

I am writing in advance of the forthcoming Public Audit Committee session on 8 December for which the operation of the Digital Assurance Office has been requested as an agenda item. I thought that it might be helpful to provide some background information in advance to aid discussion on the day.

Directorate for Internal Audit and Assurance

The Directorate for Internal Audit and Assurance was formed in 2019 to bring together independent assurance functions with the aims of delivering continuous improvement to assurance and to enable a more integrated approach to the provision of assurance services. Our functions include:

- **Internal Audit** – provision of independent assurance that an organisation’s risk management, governance and internal control processes are operating effectively. These services are provided to the Scottish Government and 24 public bodies.
- **Counter Fraud** – provision of expertise on the strategic and operational management of fraud risk in line with national counter fraud standards and the principles set out in the Scottish Public Finance Manual.
- **Data Protection Officer** – the Scottish Government’s point of contact for the Information Commissioner’s Office and the public, responsible for ensuring internal compliance and providing assurance to the highest level of the Scottish Government.
- **Digital Assurance Office (DAO)** – operation of the Technology Assurance Framework across Central Government

- **Portfolio, Programme and Project Assurance (PPPA)** – provision of independent assurance, typically through Gateway Review, for public bodies covered by the Scottish Public Finance Manual.

As a Directorate, we provide reports to the Scottish Government's quarterly Director General Assurance meetings and the Scottish Government Audit and Assurance Committee (SGAAC) as well as the Audit and Risk Committees for those bodies covered by Internal Audit.

Technology Assurance Framework

The Digital Assurance Office (DAO) operates within this wider assurance landscape and administers the Technology Assurance Framework which was agreed by Scottish Ministers in 2016 and implemented in early 2017. At the time, the introduction of the Framework reflected a deliberate shift towards a more interventionist approach to the assurance of digital projects. This was in response to a number of high profile public sector projects which had faced challenges (including the Police Scotland i6 project and the Common Agriculture Policy Futures Programme). The Framework applies to the Scottish Government and Central Government public bodies – it does not cover health bodies or local government. It is designed to help prevent projects from failing for common reasons and helps to identify issues early to enable these to be remedied in good time.

The Framework encompasses two key elements:

- a series of stop/go gates at key points during the lifecycle of major digital projects; and
- assessment for compliance with the Digital Scotland Service Standard (previously the Digital First Service Standard) for new or transformed services

I have set out more detail on these in Annexes [A](#) and [B](#) to this letter.

Project Register

The Framework also requires projects to be registered with the DAO and we write out at regular intervals to Scottish Government Directorates and public bodies to invite them to update the information we hold for them. This is the key tool to support the DAO in its role and the information provided helps us to gauge which projects may require mandatory assurance. The DAO considers updates to the project register on a fortnightly basis and determines whether follow up action is required. For example, if a new project has been notified that has the potential to be a major digital project then the DAO will follow up with that project to gather more information and to share information about the Framework.

The volume of projects registered with the DAO has grown over the years of operation with the number of major projects growing significantly - currently standing at 34, a growth of almost 50% over the last 3 years. This has resulted in a steady increase in the number of reviews carried out, with over 80 reviews in 2021-22, the highest annual figure to date. 2022-23 is tracking to a similar level.

Digital Assurance Office Resourcing

The Digital Assurance Office has been in a growth state since the Technology Assurance Framework was introduced and has increased in size over the past 18 months. I have briefly set out below the four core functions within the team and provided an organogram at [Annex C](#).

- **Engagement Management Team:** the engagement managers are part of the Digital, Data and Technology (DDaT) profession and work with Senior Responsible Owners and project teams to determine and advise upon assurance requirements, plan assurance activities and ensure that follow up action is taken in response to review recommendations.
- **Assurance Support Team:** this encompasses a broad range of functions including maintenance and integrity of the project register and administration activities associated with assurance reviews.
- **Digital Standard Assessors:** these roles are filled from the DDaT community on a rotational, secondment arrangement so that the assessors bring current delivery skills to the role. The assessors carry out Digital Standard assessments and provide a recommendation on whether a project may proceed to the next phase.
- **Continuous Improvement:** this is the newest team within the DAO, headed up by a Continuous Improvement Delivery Lead who joined the DAO in October. This is providing dedicated resource to improve performance through sharing good practice/lessons learned and refinements to the Technology Assurance Framework.

With the exception of the Communications Manager role which is currently under recruitment, all posts are currently filled with three posts covered by temporary staff.

Engagement Model

The DAO has an outreach model and the engagement managers lead on the work to establish whether a project will require assurance. There is an assigned engagement manager for each major digital project and each service which requires Digital Standard assessment. In addition, the engagement managers have early discussions with candidate projects about the potential for assurance and to provide detail on the Technology Assurance Framework.

The engagement managers co-ordinate with the other assurance providers within my Directorate to deliver an integrated assurance offering where relevant.

Impact of Technology Assurance Framework

Independent assurance provides an intervention at a point in time and therefore can never be a guarantee that things will not go wrong. However, there are a number of proxy indicators which suggest that there is a benefit to having a centralised, mandatory assurance function which requires projects to satisfy a set of requirements before proceeding:

- It is 2019 since a digital project was last stopped as a result of an assurance review conducted by the DAO.
- Less than half of the reviews conducted result in an outcome whereby the project may proceed without any conditions or a requirement to pause to take remedial action (see [Annex D](#) which provides an overview of the volume and outcomes of reviews since the Framework was introduced.) The profile of review outcomes has been similar throughout the years and is reflective of both major digital project reviews and Digital Standard assessments.
- The post-review surveys returned by Senior Responsible Owners following a major digital project review demonstrate that they found value from the review e.g. this year, of the 16 survey returns received, 10 found the review very beneficial and 6 found it beneficial.

Continuous Improvement

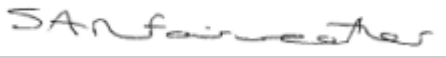
Given the increasing workload that the DAO has had to absorb, resource has been prioritised to ensure that projects and services receive the right assurance. Work on continuous improvement and lessons learned has not progressed at the same pace however work has been carried out over recent months to analyse the recommendations and observed good practice from reviews. This and other insights is feeding into the development of an overarching improvement framework which will support improvement of our own processes and assurance approach. It will also enable us to provide insights to stakeholders within the Scottish Government as well as promulgate good practice and case studies. As mentioned above, a Continuous Improvement Delivery Lead joined the DAO in October to lead on this work and I would be happy to provide an update to the Committee on progress next year.

Lessons are shared organically through our day to day work, with the DAO and review teams frequently making connections between projects and signposting good practice and contacts. For example, the Social Security Programme's release management approach has been shared with other projects, and peer review of procurement documentation has been encouraged.

The common issues identified from reviews are not new and existing good practice guidance, including Audit Scotland's '[Principles for a Digital Future](#)', remain pertinent. Often this is associated with the relative skills and expertise of the project team. The series of assurance reviews that projects are required to undergo helps to avoid projects continuing to progress before they are ready to do so whereas, prior to the current assurance arrangements, they would have likely proceeded regardless and the issues would have become magnified. In this respect, the Digital Assurance Office provides a safety net.

I hope this is helpful background but I would be very happy to discuss this in more detail or provide further information.

Yours sincerely

A handwritten signature in cursive script that reads "S. Fairweather". The signature is contained within a thin black rectangular border.

Sharon Fairweather
Director for Internal Audit and Assurance

MAJOR DIGITAL PROJECT REVIEWS (STOP/GO GATES)

1. Definition of a Major Digital Project

The Scottish Public Finance Manual (SPFM) sets out a definition of major investments which includes project which:

- have a total anticipated whole-life cost of £5 million+ inclusive of fees and VAT or is above your delegated authority limits or
- could create pressures leading to a potential overspending on portfolio budgets or
- would entail contractual commitments to significant levels of spending in future years for which plans have not been set or
- could set a potentially expensive precedent or
- will be challenging to deliver within existing resources and capability and/or represents a material level of expenditure and/or will have a material ongoing financial impact or
- are novel, and/ or contentious and / or complex, or
- could impact on the delivery of a Programme for Government commitment or
- require primary legislation

Where a Senior Responsible Owner considers that the project may be a major investment, the SPFM requires them to submit a Risk Potential Assessment to the Directorate for Internal Audit Assurance. This provides an initial indication of cost and risk to supplement a discussion between the Digital Assurance Office and Senior Responsible Owner about whether the project should be classed as a major digital project.

2. Types of Review

There are six review types:

- **Business Justification Gate:** to ensure the basis for starting the project is sound, addresses user needs and has a robust, strategic, business case.
- **Pre-Procurement Gate:** to test the contracting and procurement strategy and ensure the contractual and commercial risks are understood.
- **Delivery Gate:** to ensure that the project addresses any significant issues including cost or time slippage.
- **Go-Live Gate:** to ensure that systems and business processes are ready for service and capable of delivering.
- **Health Check:** a bespoke review with scope determined through a terms of reference (this could be requested by the Senior Responsible Owner or recommended by the DAO or Review Team).
- **Assurance of Action Plan:** to consider the appropriateness of action taken in response to one of the other review types, typically where the previous review has not delivered a good outcome.

The reviews take the form of documentation review and interviews but can also include other methods as appropriate. The Review Team writes a report which, for all Gate reviews, includes the following:

- **Delivery Confidence Assessment:** the probability of successful delivery to time, cost and quality.
- **Overall Recommendation** on whether the project can proceed (with or without conditions); should pause until remedial action is taken; or should stop because it is irrecoverable.

The inclusion of the Delivery Confidence Assessment and Overall Recommendation in Health Checks and Assurance of Action Plans is determined by the terms of reference for the review.

The DAO actively monitors the action plans which projects are required to submit in response to the recommendations contained within the review report and seeks supporting evidence that these have been completed.

3. Gate Checklists

The scope of the 4 Gate reviews is set out in checklists which are tailored to each review. These have been informed by good practice, the Gateway Review regime and also by subject matter experts (e.g. procurement and digital) within the Scottish Government. The checklists are on a 2 year formal review cycle and will next be due for review in 2023. The checklists align to Audit Scotland's principles for success as set out in ['Principles for a Digital Future'](#).

4. Independent Review Teams

Major digital project reviews are led by a Review Team Leader who is accredited by the Infrastructure and Projects Authority (the UK Government's centre of expertise for major digital projects and infrastructure). The Review Team Leader is supported by a Review Team Member, also accredited by the Infrastructure and Projects Authority, and/or public servants who bring particular expertise e.g. procurement.

The projects cover the costs of the Infrastructure and Projects Authority accredited reviewers.

DIGITAL SCOTLAND SERVICE STANDARD ASSESSMENTS

1. Digital Scotland Service Standard

The [Digital Scotland Service Standard](#) (DSSS) is owned by Digital Directorate and sets out the approach for delivering new and transformed digital services. It is intended to help ensure that services are based on the needs of users, are sustainable and continuously improving, secure and resilient, and that good technology choices are being made.

2. DSSS Assessments

The DAO conducts assessments of services' compliance with the DSSS at the following stages:

- End of the Discovery phase
- End of the Alpha phase
- Entry into Public Beta or Live
- Checkpoint – these can take place at any time to consider whether the delivery is on track to meet the DSSS.

A triage process is in place to consider the risk/cost profile of a service which determines the appropriate type of assessment for the service. High and medium risk/cost services are assessed by the DAO's Assessment Team. Low risk/cost service assessments take the form of a written submission by the Service Team which is considered by the DAO's lead engagement manager.

Minimum Evidence Frameworks are in place for both the Agile and Waterfall methodologies and these guide the scope of assessments along with the specific terms of reference produced for each assessment. The assessment process includes a Show and Tell by the Service Team, review of documentation and briefing session on specific criteria.

The Assessment Team produces a report which sets out whether the service has met/not met each of the 14 criteria within the DSSS and, similarly to major digital project reviews, provides an overarching recommendation about whether the project should proceed (with or without conditions); should pause until remedial action is taken; or should stop because it is irrecoverable.

The DAO actively monitors the action plans which projects are required to submit in response to the recommendations contained within the assessment report and seeks supporting evidence that these have been completed.

3. Assessment Team

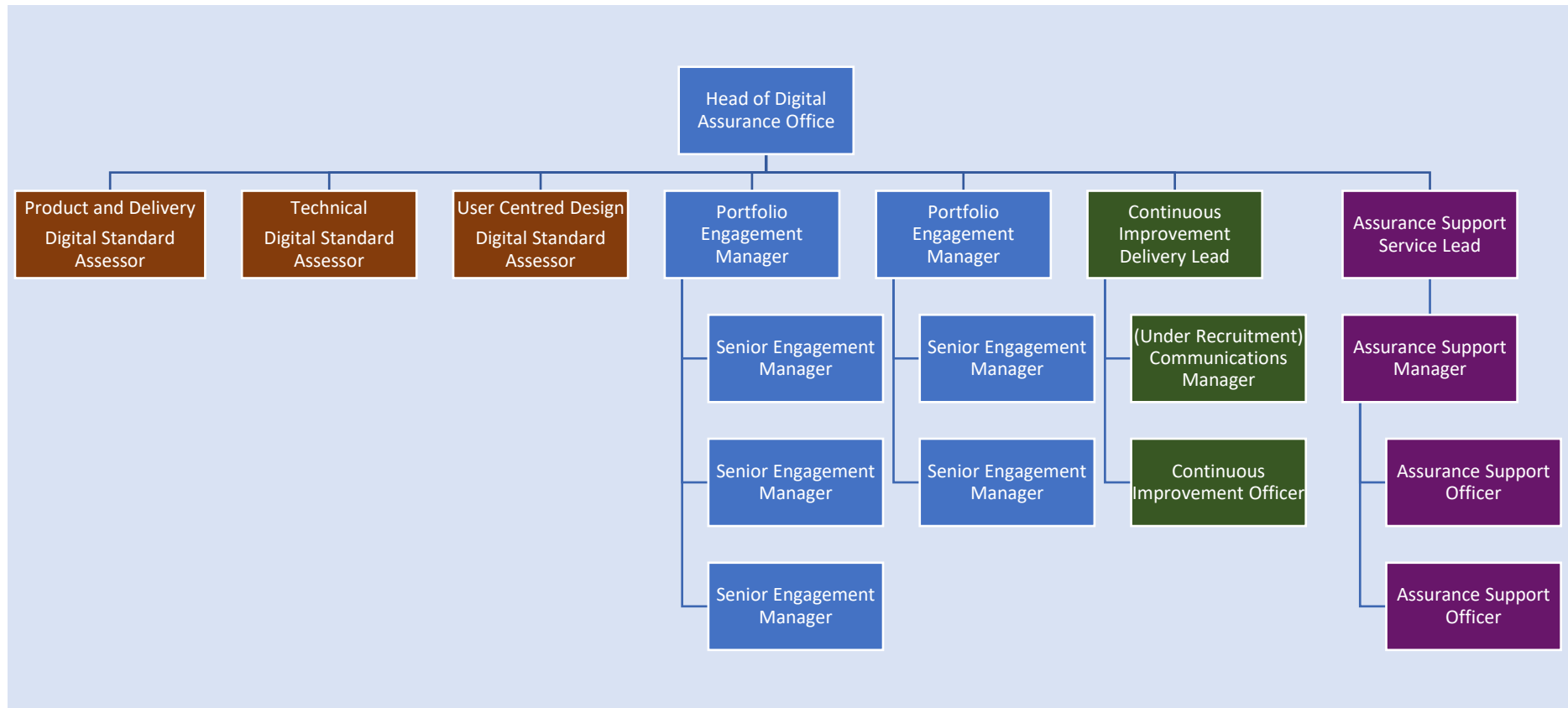
There are three assessors within the DAO covering the three core themes of the DSSS:

- User Centred Design

- Technical
- Product and Delivery

The assessors join the DAO on a secondment arrangement within the Digital Data and Technology (DDaT) profession. This enables a rotational approach to filling the assessor posts whereby DDaT professionals with the appropriate skills and capabilities join the DAO for a period of 12-24 months before returning to their core role. This ensures that the assessors have current skills and also provides them with a development opportunity.

DIGITAL ASSURANCE OFFICE ORGANOGRAM



REVIEW VOLUMES AND OUTCOMES (2017 TO DATE)

1. Major Digital Project Reviews

Major Digital Project Reviews - Volumes	199	100.0%
Business Justification	18	9.1%
Pre-Procurement	54	27.1%
Delivery	34	17.1%
Go-Live	29	14.6%
Health check	52	26.1%
Assurance of Action Plan	12	6.0%

Major Digital Project Reviews - Outcomes	199	100.0%
Proceed to next stage	66	33.2%
Proceed to next stage with conditions	77	38.7%
Do not Proceed until remedial action taken	18	9.0%
Close the project	2	1.0%
Continue in current stage	12	6.0%
Continue in current stage with conditions	4	2.0%
Not applicable*	20	10.1%

2. Digital Standard Assessments

Assessment Volumes	161	100.0%
Discovery	45	28.0%
Alpha	48	29.8%
Beta	49	30.4%
Checkpoint	19	11.8%

Assessment Outcomes	161	100.0%
Proceed to next stage	70	43.5%
Proceed to next stage with conditions	55	34.2%
Do not Proceed until remedial action taken	21	13.0%
Close the project	0	0.0%
Continue in current stage	5	3.1%
Continue in current stage with conditions	6	3.7%
Not applicable*	4	2.5%

*This reflects reviews/assessments where it was agreed by the Digital Assurance Office that a stop/go decision was not required e.g. because it was a targeted review to consider a particular aspect of a project rather than a whole project review.

Digital Directorate
Geoff Huggins, Director

a b c d

E: Geoff.Huggins@gov.scot

Mr Richard Leonard
Convenor Public Audit Committee

publicaudit.committee@parliament.scot

cc. Minister for Business, Trade, Tourism and Enterprise
Permanent Secretary
Director General Corporate
Director of Internal Audit and Assurance

2 December 2022

Dear Mr Leonard

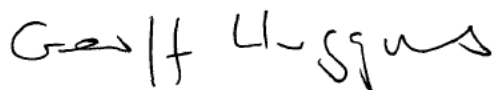
MAJOR ICT PROJECTS – ACCOUNTABILITY AND GOVERNANCE

I refer to your letter dated 22 April 2022, in which you asked for further information in relation to the establishment of the Digital Spend Control service, and my update of 20 May 2022.

I attach as an Annex an update on the work which sets out how our thinking has evolved across the Summer and the implications for the forward workplan.

I hope that you find this information helpful and would of course be happy to provide any further detail at the Public Audit Committee meeting on 8 December 2022.

Yours sincerely



Geoff Huggins
Director Digital

Spend Controls Pilot Outcomes

We undertook two pilots to test the Spend Control process within the Digital Directorate over the summer. One pilot focused on work in relation to future Scottish Government telephony services, and the other was a desk review of the Scottish Government's Payments Service which went live earlier this year.

These pilots were intended to test the proposed service design, and better understand the capacity and resource requirements needed by the service team and the programme or project delivery teams.

There were three principle outcomes from the pilots as follows:

- It was challenging to make spending assessments in the absence of clear rules and mandates regarding the architecture and design of digital services.
- There were overlaps with the Digital Assurance process that need to be worked through further to ensure that work is not duplicated, and to reduce the overall assurance burden.
- The resource requirement for digital specialists required for comprehensive reviews and assessments was significant, and to extend beyond the pilots the team would need to scale significantly.

On the basis of the pilot work and other discussions, including the evidence session with the Public Audit Committee in March 2022, we are developing new thinking on how to secure greater value and improved outcomes in respect of digital delivery.

Our objective is to deliver digital public services that are easy to access, predictable and effective. To secure that objective we need to look beyond individual services and programmes and consider the overall functioning and capability of the system. This requires a common approach to technology, including agreed architectural blueprints, easily accessible components, as well as a single approach to identity.

A New Approach

Shifting the focus from individual projects and programmes to the system level will not happen by chance or through existing ways of working. The Scottish Government is developing a change programme for 2023 focused on portfolio management, the development and implementation of clear frameworks for taking forward digital activity, as well as greater overall control of capability and resources.

The Digital Board will consider the outline programme for 2023 at its meeting on 12 December 2022, and will have oversight of delivery of that work programme. The programme is likely to include:

- Scottish Government level control of digital investments through a prioritisation process, based on business need and contribution to digital public services. This

would deliver a portfolio of programmes and projects which is right-sized to available funds and capability.

- 'Red lines' to apply mandatory requirements for key digital elements such as architecture, data and design to develop the overall system coherence, and leverage investment over time.
- Targeted support for digital transformation, focused on the design, data, architecture, capability and commercial components of the change process.
- Greater control over digital capability, including recruitment, allocation and development, to ensure priority digital initiatives are appropriately resourced, and to enable long-term delivery planning with a reduced reliance on high cost contract resource.

We will be happy to keep the Committee updated on the programme of work, and would intend to write to the Convenor following the meeting of the Digital Board on 12 December with an update.