Digital Directorate
Information & Technology Services

The Scottish Government
Riaghaltas na h-Alba

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A Review of Information Management in the Scottish Government

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1. Purpose of the Review

The strategic purpose set out by the Permanent Secretary is to review corporate processes for the storage, retrieval and deployment of corporate information to ensure they are fit-for-purpose in responding to the latest technological developments and the expectations of Ministers, the Parliament and the public, whilst also supporting the Scottish Government's (SG) reputation as an open, capable and responsive government.

1.1. Methodology

The review gathered information from a number of sources including:

- interviews with staff at various levels of the organisation across different functions
- surveys of staff with information management responsibilities
- reviewing current policies, processes and governance
- analysis of data gathered on the most common systems used to store and manage information in general day to day business
- collaborative learning and some benchmarking research of the information management approaches of other government organisations and departments in the UK and internationally

2. Executive Summary

2.1. Key Findings

- The Scottish Government (SG) has reached a strategic tipping point in its approach to information management. There is now a compelling case for the organisation to re-evaluate and reset its approach to information management to ensure that it minimises the risks and takes advantage of the opportunities associated with global changes in technology, and supports its future business and digital strategies.
- The business value of the SG's information should be fully recognised and valued as it is crucial to the success of the business of government and the SG's vision of being open, capable and responsive. Improved information management practices can improve decision making and generate substantial economic benefit. Information should therefore be afforded equal strategic priority to other corporate assets such as people, infrastructure and finances.
- SG should develop a comprehensive corporate information management strategy which sets out the direction of travel for the organisation to deliver its information management priorities, policies and approach to achieving best practice. This should cover culture, capability and controls to ensure clear and effective governance.
- In order to ensure that information is used to best advantage and to reduce risk, there needs to be comprehensive oversight of information systems and governance. This will improve performance, avoid silos and ensure greater consistency and should be applied to corporate systems and processes but also supported by enhanced governance and scrutiny at local level.
- Further action is required to ensure that policies and guidance are implemented fully and compliance with information law is achieved. The organisation's information often forms its record of work and should be protected by disciplined information and records management.
- Whilst the eRDM (electronic records and documents management) system is used widely as the corporate solution for managing documents and records, there is also widespread use of alternative processes and systems for creating, storing and managing information. A change in culture is required in order to address a significant and growing landscape of unstructured

information which is not properly managed and is difficult to access, search and reuse. This legacy environment also constrains the organisation's business and technology strategies. Enhanced governance should therefore also apply oversight to the use of such information systems. Lessons learned should also be applied to the implementation of new digital information systems to mitigate future risk.

- Available data about the organisation's information management practices should be better utilised to support performance monitoring and information governance.
- There is poor uptake in information management training which has led to a lack of skills and knowledge about best practice information and records management at all levels.
- The SG has recently invested in its information management infrastructure by upgrading the corporate eRDM system, acquiring new digital information management tools and developing a new model of blended training resources. These are strong foundations upon which to improve information management capability and reduce risk but they must be backed up by best practice and the right behaviours at all levels in the organisation.

2.2. Priority Recommendations

The following is a summary description of the key recommendations set out in section 12 and which are also reflected in an indicative strategic plan in section 11. The Scottish Government should:

1	*Raise the corporate priority and strategic profile of information and records management to better reflect its business value and encourage improved behaviours and culture.*
2	*Implement a corporate whole-of-government information management strategy.*
3	*Establish a corporate information governance model.*
4	*Implement a corporate information management performance framework.*
5	*Manage down the availability and use of unstructured information repositories and develop clear criteria, guidance and policy for the management of information outside of the corporate eRDM system.*
6	*Deliver a corporate improvement programme to address key risks and gaps in the short to medium term whilst building a sustainable and responsive business model for best practice digital information management in the future.*
7	*Embed lessons learned in the implementation of new digital information systems.*
8	*Review resourcing of information management within local, directorate and corporate functions.*

3. Introduction

Government organisations and the wider public sector find themselves increasingly confronted with many complex information management challenges and these are perhaps more pronounced for the Scottish Government (SG) given the pace of the increasing growth of the organisation and breadth and scope of its business model and services. In many ways, the growth of digital information has only compounded these issues for government organisations which can commonly include:

- a large number of disparate information management systems
- little integration or coordination between information systems

- range of legacy systems requiring upgrading or replacement
- direct competition between information management systems
- no clear strategic direction for the overall information or technology environment
- limited and patchy adoption of existing information systems by staff
- poor quality information, lack of consistency, duplication and out-of-date information
- little recognition and support of information management by senior management
- limited resources for deploying, managing or improving information systems
- large number of diverse business needs and issues to be addressed
- difficulties in changing working practices and processes of staff
- competing internal priorities impacting on the ability to coordinate corporate activities

Many of these challenges are relevant to the SG, not least through a very significant and complex landscape of numerous repositories of information stored in many different formats across various platforms hosted on the SCOTS[1] infrastructure.

4. The Strategic Case for Change

4.1. The Value of Information Management

Information is a precious commodity for the organisation and is crucial to the success of the business of government and the SG's vision of being open, capable and responsive. To support this the SG needs to enhance the degree to which it recognises and values its information. It should be valued in equal measure to other key assets like people, finances and infrastructure.

Information management is the term used to describe all activities concerned with using information in all its forms. It is the means by which an organisation plans, identifies, creates, receives, collects, organises, governs, secures, uses, retrieves, controls, disseminates, shares, maintains, preserves and disposes of its information; as well as any means through which the organisation ensures that the value of that information is identified and exploited to its fullest extent.

Information management should be more than just a collection of individual policies and procedures for certain disciplines like records management, data protection and freedom of information. In the digital era and with the expectations of the public, the Scottish Parliament and other stakeholders around the availability of and access to government information, the organisation needs to fully appreciate that its information is its record of work and as such should be protected by best practice handling and corporate discipline.

Government records are defined as recorded information in any form, created or received in the day to day work of government. They are characterised by their essential purpose and value which is to provide reliable evidence of actions, decisions and events – the 'who, what, when, and why' something happened. The SG's records should be primary sources of information which include unpublished documentation in any format. To demonstrate the value of such information it should be viewed as a corporate entity, managed in a consistent and corporate manner and maintained and protected in the corporate electronic documents and records management system known as eRDM. The review found a prevalence of localised non-corporate behaviours around information

[1] SCOTS is the secure official SG network and infrastructure on which all the organisation's technology solutions are hosted and supported.

management which can increase risk and potentially undermine the true value of the information the organisation creates, receives and manages.

4.2. The Growing Case for Change

The case for change in the SG's model of information management has been building over time. Key drivers for change continue to emerge and when taken with the conclusions of previous strategic reviews and assessments have brought into sharp focus the SG's strategic management of information. Collectively these drivers can now be seen as representing a 'tipping point' for the organisation to re-evaluate and reset its approach to information management. This review has reaffirmed and builds on the conclusions of preceding bodies of work which previously highlighted the challenges facing the SG around information and records management. These included:

- UK Cabinet Office Review of Government Digital Records December 2015
- UK Cabinet Office Better Information for Better Government January 2017
- SG eRDM Improvement Programme Full Business Case July 2017
- SG Corporate eDiscovery Project - Outline Business Case May 2019

Their key conclusions and recommendations are further detailed in Annex A of this report and they remain applicable to the SG today and continue to serve as key drivers for change. Common problems and conclusions made during these assessments and validated by this review include:

- Insufficient priority given to information management
- Significant prevalence of unstructured information and data which is not properly managed
- Policies & guidance not being fully implemented in practice
- Lack of corporate behaviours
- Limited readiness for digital advancements
- Impact on performance, efficiency, compliance and information security
- Need for culture change, strong governance and leadership

4.3. Information Compliance

The SG is committed to complying with a range of legal obligations including, but not limited to, the keeping of public records, data protection, freedom of information. To support these obligations long established corporate teams are in place staffed by dedicated, experienced and knowledgeable practitioners in these discipline who provide advice, guidance and operational support and oversight to the wider business on meeting these obligations.

The review found that the efforts and work of these teams and wider operational staff can be hindered by the current information environment, culture and working practices. The organisation's information management legal obligations, such as the Public Records (S) Act 2011, are not being best served by the volume and unstructured nature of information currently stored in unstructured repositories which do not have the level of business governance measures in place that exists around the corporate eRDM system. Optimising the organisation's capacity and capability to comply with information management related law and indeed its own policies should act as a compelling driver for change and improvement.

4.4. Responding to Public Inquiries and External Scrutiny

Responding to public inquiries, external and parliamentary scrutiny is now a constant and permanently embedded feature of SG's 'business as usual' environment. Inquiries relating to the SG's Covid 19 response are inevitable. Recent other examples include:

- The Scottish Child Abuse Inquiry
- The Buchanan/St Ambrose High Schools 'Bluewater' Inquiry
- The Hospitals Inquiry
- The Sheku Bayou Inquiry
- The Inquiry into the Scottish Government's Handling of Harassment Complaints

The SG's response to these inquiries has highlighted the challenges posed by the current information management environment not least the numerous and unconnected information systems used by the business and the sheer volume and largely unstructured nature of information they hold. The current approach to responding to these inquiries is generally reactive and tactical in nature with business areas creating dedicated teams to try and collate, structure and analyse all relevant information that may relate to or provide evidence of key actions and decisions having been taken or not. The work of these teams can be impeded as they try to overcome the complexity and inefficiencies inherent in the current information environment.

During the review it was noted that the DG Health and Social Care has developed a bespoke information governance model to support and manage decision making processes across a range of activities as part of their Covid 19 response. This model has had to highlight the importance of information being stored and managed in the corporate eRDM system. This information led decision making model is good practice in itself as well as being a tool designed to encourage best practice information and records management generally.

Crucially of course, it is not just at the point of reactively responding to any inquiry or information requests that challenges are encountered. Difficulties can also arise at the very point of responding to or planning for an event itself when the organisation relies on real time, reliable, accurate, well-structured and accessible information in a consistent manner that wherever possible follows the principle of a 'single source of the truth'. The business requirement for strong information management can equally apply to spontaneous major events, policy development, procurement decisions, project delivery etc.

4.5. The Impact of Inefficiency

It is important to recognise that there can be substantial economic benefits from better information management. Additionally, improved information management practices can improve the quality of business decision making, particularly where decisions are based on best evidence, and this in turn can lead to savings in business operations and service delivery. Reduced costs can be achieved simply by adopting a 'get it right first time' approach.

The current information environment can lead to widespread multiplication of effort across a range of business functions in the SG particularly in the pursuit and reuse of information held across various sources. Recent business critical events have served to highlight the difficulties which the current information landscape presents. These demonstrate the manual and technical effort that is required

to create retrospective tactical solutions to issues. The root causes are varied but typically are due to

- information management best practice not being fully applied in the first place
- the importance of the information not being fully understood
- information and records management not being considered a high priority
- staff not having sufficient time
- staff not understanding key processes or eRDM system functionality available to them
- the widespread availability of unstructured information stores which can be used as alternatives to eRDM
- cultural apathy and negativity towards using eRDM
- limited process automation

4.6. Case Studies in Inefficiency

During the review several examples emerged of tactical solutions being developed to overcome gaps and risks created by guidance and good practice not being followed at the outset. For example some business areas, including those gathering information relating to the response to Covid 19, were faced with huge backlogs of emails containing important business related information requiring to be filed in the corporate eRDM system. Significant business and technical resources were deployed to develop interim solutions to migrate this information to eRDM. This included consultancy support from the eRDM supplier and content having to be restructured and cleansed by the newly acquired corporate eDiscovery tool. The cost of this work can be significant and is potentially avoidable.

In these instances corporate email management guidance is available but like other training resources may not have been fully exploited. Functional integration between Outlook and eRDM and the new eRDM user interface has greatly simplified the filing of emails. There is also an email capture tool within eRDM which can automatically import emails in certain high volume mailboxes types such as those of senior civil servants or busy support teams. These tools should be fully exploited to reduce risk and inefficiency.

Similarly the new corporate eDiscovery solution should be fully exploited to achieve its original strategic purpose of supporting the business to structure, analyse and cleanse legacy unstructured information which is not fully managed. Until now the tool has been largely deployed for specific information retrieval requirements for inquiries.

4.7. Digital Technology Advancements – Opportunities and Risks

In the wake of the global Covid 19 pandemic one of the top information priorities set out by government organisations is to accelerate their digital business and technology initiatives. A current example of this has been the recent rapid deployment of Microsoft Teams to 16,000 staff using the SG SCOTS network to support mobile and remote working, secure video conferencing and digital collaboration. These will be followed by other information platforms in the Microsoft 365 suite of applications such as One Drive and Sharepoint.

There are both opportunities and risks in governments keeping pace with the global roadmap of digital information systems. Implementing the latest digital platforms also means introducing the next generation of information repositories for the business to create, collect, store and manage

information and the business needs to fully understand both the benefits and the implications of this. If the SG accepts that there are gaps, risks and issues in the current information environment which need to be addressed, then it must also safeguard the organisation going forward. Care should be taken to balance the benefits of digital technology with the core information needs of the business and its capability to keep up with, accept and successfully adapt to change.

As well as taking remedial action to address challenges of the legacy information environment, careful planning should also be applied to mitigate the risks of repeating the mistakes of the past during the delivery of new digital information systems. Future information risks should be mitigated now by applying lessons learned. Information and records management should not be afterthoughts in the delivery of new technology. The development of clear information management guidance, policy and governance should be planned in from the outset as core dependencies and workstreams in any projects delivering new or upgraded digital information systems. In essence the SG should do all it can to avoid creating a 'digital heap of tomorrow' containing poorly structured, poorly managed and difficult to find information which is created and managed in a non-corporate manner.

4.8. The Use of Social Media and Mobile Telephony

Information management in government is typically seen through the lens of physical, written information in the organisation's internal and official systems of work. Where necessary and appropriate, the SG's management of information needs to also consider how to capture the outputs of the dynamic world of digital working involving the use of mobile platforms, devices and social media.

Increasingly information can be received and communicated in ways that aren't always immediately visible to the wider organisation nor able to be immediately recorded for example in a corporate system. This simply reflects the often dynamic nature of business and availability of digital platforms and mobile devices rather than any deliberate act to avoid proper recording of information. This can sometimes include information that may relate to official business but not always in a formal business environment system, for example on telephony or social media platforms such as SMS texting, WhatsApp, Facebook, Twitter, Instagram etc. In fact business related information can often also be created and managed through verbal communications in person or via mobile platforms, for example chat at a social event attended by work colleagues or business partners, or on a video or audio conference call.

The SG has quite comprehensive policy and guidance on the use of social media and SMS texting. However this could provide greater clarity around the need, in some circumstances, for the official recording of information concerning key business related actions and decisions which are created, received, stored and communicated via these platforms and should apply equally to the use of work issue or personal mobile devices. Clarity on this is important to ensure such information is properly reflected in, or directly transferred to, official information systems, especially eRDM, either in real time or retrospectively.

5. The Challenges of the Current and Legacy Information Environment

5.1. Current State

The largest repositories containing general day to day business information are

- **eRDM** – the corporate documents and records management system accessible to all core SG staff and users from a range of Agencies and NDPB's using the SCOTS network

- **G Drives** – shared Windows drives allocated to business areas to manage documents
- **H Drive** – individual Windows drives allocated to all staff including those with no access to eRDM
- **Public Folders –** legacy Outlook folders designed for shared access
- **Outlook** – the corporate email solution

From a technical governance perspective these are all supported data stores hosted on the corporate SCOTS infrastructure. However from a business perspective, taking eRDM aside, the others are not corporate information systems. They are repositories with largely unstructured and unaudited information which is not subject to sufficient business governance especially from a corporate perspective. This information can be difficult to access and retrieve other than for the individual users or local teams who create and manage the content. Tables A and B below highlight the scale of information that has been gathered in these electronic stores and the absence of any meaningful information governance relating to them and much of the content they contain.

It should be noted this is a quantifiable profile of data obtained from iTECS Division. It was beyond the scope and capability of the review to provide a full and meaningful qualitative assessment of this data.

Table A – the quantifiable view of the content of the 'big five' commonly used data stores[2].

	eRDM	G Drives	H Drives	Public Folders	Email
Files/Folders	**1 million**	**35 million**	**3.5 million**	**88,000**	**21,000 mailboxes**
Number of items	**38 million**	**26 million**	**35 million**	**34 million**	**155 million emails**
Storage consumed in terabytes	**30 Tb**	**13.5 Tb**	**20.5 Tb**	**3.4 Tb**	**6.5 Tb**

***Table B* – a comparison of strengths and weaknesses (excluding Email)**

	eRDM	G Drives	H Drives	Public Folders
Corporate Policy	✓	✗	✗	✗
Corporate Business Owner	✓	✗	✗	✗
Corporate Training Model	✓	✗	✗	✗
Structured Data	✓	✗	✗	✗
Full Audit Capability	✓	✗	✗	✗
Full Version Control	✓	✗	✗	✗
Inbuilt records management capability	✓	✗	✗	✗
Inbuilt corporate search engine	✓	✗	✗	✗
Workflow	✓	✗	✗	✗
Integrated with other corporate systems	✓	✗	✗	✗
Secure & integrated external sharing with synchronised audit & records management	✓	✗	✗	✗
Supports compliance with Public Records (S) Act 2011	✓	✗	✗	✗

[2] Source: iTECS Division.

Proportion of total information content	**28%**	**72%**

There are of course many assumptions and caveats that can be made around the data content of all these information stores. For example there is likely to be significant duplication of information across all of these repositories. Whilst that might provide comfort that some versions of documents are correctly stored in eRDM it actually creates an issue around multiple versions of documents held in different systems leaving the business with the task of establishing what is the most up to date and accurate document or record.

Business users searching the content stored outside eRDM rely on a combination of local knowledge by individuals or teams and using basic Windows explorer search functionality. To try and meet more corporate information searching requirements, such as responding to inquiries, dedicated personnel have had to be assigned to search information at an enterprise level to provide greater surety that results would be complete and accurate. The recently implemented eDiscovery solution now provides an improved capability to more reliably search some of this unstructured content and provide greater assurance about the outputs. It is not however a solution routinely used by the general business. Section 11 also refers to eDiscovery and its benefits.

Taking email aside, in purely quantifiable terms, Table B shows that only around 28% of information items stored in the main four repositories is maintained within eRDM which is the only corporate solution which brings the full information management safeguards outlined in the same table.

5.2. Key Risks

Very limited sample eDiscovery analysis found information held in the these systems which ought to have been stored in eRDM but wasn't. Information of a sensitive nature or containing personal data was also found. This has the risk of weakening the effectiveness of the processes and outcomes of both the IAO review of Information Asset Registers and corporate Certificates of Assurance. These data stores can create significant information risks to the organisation including:

1. **Reduced levels of legal compliance** -
    - Public Records (S) Act 2011 – the content is not subject to records management including retention or disposal schedules.
    - FOI – the content is not readily searchable and hinders efforts to meet freedom of information requests.
    - GDPR – the content can include sensitive personal data which is difficult to review and risk assess.
2. **Sub optimal capability and performance** - the business does not have the degree of confidence it should around its ability to reliably search and reuse the organisation's own information. This is a general issue which hinders routine day to day business but importantly it does not best serve the requirements of key corporate initiatives and inquiries
3. **Sustaining a non-corporate culture** - the availability of these alternative repositories is in itself an 'excuse' or blocker and can actually discourage some staff from using eRDM. This poses a risk to the credibility and integrity of eRDM but also the corporate file plan and records management plan signed off by the Keeper of the Records of Scotland.
4. **Security of information** – the sheer volume of unstructured information lying across a multitude of disparate repositories and sources amounts to a corporate risk in its own right which is not properly mitigated due to the lack of surety around ownership, insufficient governance and limited or no audit.
5. **Inefficiency** - associated with staff time wasted trawling through the various information sources which also contain multiple duplications of the same information.

6. **Unnecessary costs** - associated with the storage and infrastructure management overhead of the various repositories.
7. **Constraining SG strategies** - complexity and costs associated with the challenge of migrating huge volumes of unstructured, poorly managed data as part of a future strategic migration to the cloud. SG should be taking measures to cleanse and structure its data in readiness for any future potential migration to the cloud.

5.3. Business Non Value

Some of these data stores may have some very limited administrative metadata applied to some content such as marking a file, folder or item as having restricted access or being password protected. However there is very little metadata of real business value. There is little or no descriptive information about the context, quality, condition or characteristics of the data. In general this huge collection of unstructured information offers up very limited corporate value to the SG.

One of the priority areas of focus in a corporate IM Strategy should be measures taken to reduce the availability and use of these alternative repositories. This will also help marshal staff towards greater adoption and consistent use of the corporate eRDM system for everyday documents and records management.

6. Information Governance

6.1. Key Information Governance Gaps

"Records managers are not the only key players involved in managing organisational information, particularly where the transactions of an organisation's activities are recorded in multiple business systems (e.g. human resource and finance systems, enterprise information management systems, and so on). There is a need for all information professionals to be able to work together collaboratively, each bringing their own particular expertise to the mix.

Records Management and Information Culture : Tackling the People Problem - G. Oliver & F. Foscarini, 2014

The SG has some well-established individual operational policies, controls and processes in key information management disciplines such as records management, data protection, freedom of information, information security and ministerial correspondence.

Corporate teams in these specialist information disciplines work hard to deliver the needs of the organisation but often do so in isolation of each other. Whilst corporate in their intended nature and title, they tend to operate in silos, more as a collection of disparate operational functions and controls rather than forming an efficient and integrated end to end model of information management practices and governance. This can lead to inefficiency, gaps in the management of information and strong skills and knowledge not being shared and spread across functions. This can also create a culture of departmental or localised 'tunnel vision' and competing priorities around information management. There is no corporate level collective oversight of these information management processes.

Some gaps in information governance also exist at a strategic level. Roles have been assigned such as Accountable Officer, Senior Information Risk Owner and Information Asset Owner. There is however no executive level governing group which is either dedicated to information governance or has it as a core agenda item at meetings. Information management does feature in executive level scrutiny when it is tracked as a particular risk or issue. For example the current corporate risk register cites Covid 19 impacting on FOI response targets and also documents a risk relating to resources,

capability and capacity to respond to public inquiries. Some of the root causes of the challenges facing these business requirements are already outlined in section 2 of this report.

The DG ODO has specific responsibility as the organisational Senior Information Risk Owner (SIRO). However information management is a core component of all business functions in all DG areas and Directorates. It should not be separated out and viewed as a specific function or endeavour for one distinct area to own and deal with. It should be recognised that information governance is an equal and enterprise wide responsibility across all DG areas, Directorates and Divisions.

It was also noted that previous thematic audits and inspections by Internal Audit and the Information Commissioners Office focussed on specific areas i.e. readiness to implement GDPR and the management of data security incidents. The organisation should ensure it is well placed going forward to respond to future scrutiny in the event information governance forms part of that.

Delivering some of the key recommendations in this review will unquestionably benefit from enhanced governance and visible strategic sponsorship at a corporate level. This could be established initially through DG Assurance Groups perhaps reporting to the Executive Team and Corporate Board. The remit of the latter includes overseeing that there is an effective model of internal controls, risk management, financial stewardship and other governance requirements. These groups could provide strategic support and oversight of information management and any key recommendations taken forward from this review.

6.2. Establishing a Corporate Information Governance Group

As an immediate measure to bridge some of the key governance gaps the SG should consider creating some form of corporate information governance group at a senior operational level. This will help develop a greater sense of corporate and collective responsibility around information governance, as well as drawing on skills and expertise to improve and shape best practice now and going forward. Membership could be drawn from senior practitioners from key business areas and other representatives as listed below.

- Head of KIM
- KIM Education and Business Engagement
- Freedom of Information
- National Records of Scotland
- Corporate Records Management
- Ministerial Correspondence
- Data Protection
- People Directorate
- Legal Directorate
- Cyber Security
- Digital Directorate
- Representative IAO
- Representative from Business Management Units
- Representative IMSO
- Representative from Agencies/NDPBs
- Non-executive/external representative

This group could act as a senior business advisory body on information management to Executive level governance groups. An immediate focus of the group could be to support and oversee the delivery of recommendations and actions from this review. It could also consider the development of a business case to assess the viability of establishing a corporate Information Governance and Assurance Division. Such a function could potentially bring the various information management functions into a single corporate multidisciplined Division to capitalise on the combined experience, skills and common business objectives of various disciplines which could provide both strategic assurance and operational oversight.

6.3. The Welsh Government Comparator

Part of the benchmarking activities undertaken included analysis of the Welsh Government's (WG) information management model where the business and technical information environments and challenges have significant similarities to that of SG. They too have been exploring and implementing ways to tackle the difficulties of brigading staff towards a more corporate model of information management and solutions which either resolve the problems of unstructured and insufficiently managed legacy data or at least prevent the situation getting worse. They also have the same corporate software applications for documents and records management, secure cloud collaboration, workflow and eDiscovery and are on a similar path as SG towards implementing Microsoft 365 products.

The Welsh Government has implemented measures aimed at reducing information governance risk associated with unstructured and poorly managed information systems. For example they have closed off all access to shared network G Drives and have made the individual H Drives of all staff read only. This has helped brigade staff towards using their equivalent of eRDM for their core information management.

The Welsh Government also identified governance gaps in the organisation which they addressed by investing in new roles known as Knowledge and Information Managers based within each of their four DG areas. This is now seen as a crucial component in corporate information governance which provides

- a dedicated information governance and assurance function to encourage, develop and maintain high standards and compliance across the Directorates within their DG area
- a conduit with corporate information management functions such as records management and data protection teams.
- advice and support to officials/teams within their DG including IAOs
- performance monitoring and quality health checks on information management

This review makes recommendations relating to managing down the use of these non corporate information systems, creating a corporate governance model and investing in the resourcing of information management. The action taken by the Welsh Government should help inform any measures taken forward by SG.

7. Performance Management

The review found only a handful of measures utilised in the SG which aim to gauge performance in certain areas of information management. These are:

- All staff joining the organisation and annually thereafter are required to conduct an annual knowledge check on handling personal data and complying with GDPR.
- Performance tracking of response times for Freedom of Information Requests.
- Progress tracking of the completion rates of reviews of local information assets by IAOs
- The yearly Corporate Certificates of Assurance process.

The last two of these measures follow a largely localised self-assessment process. A review of these

processes, including their profile and meaningfulness should be considered in the context of the findings of risk summarised in section 3.2.

Other than ad hoc performance monitoring locally in teams and Branches there is no structure or defined process to evaluate performance on general information or records management good practice. Importantly this includes an absence of performance monitoring around current training, skills and knowledge in processes and the use of eRDM.

The review found that only around a quarter of staff who should use eRDM have undertaken the basic online course in how to get the best out of the recently modernised system. Better tracking of the training of Information Asset Owners could also be significantly improved. Section 8 also refers to training.

Valuable management information and business intelligence is available and should be exploited much more than it currently is. eRDM has an inbuilt management information reporting tool which can generate reports on the use of the corporate system at an individual, Branch, Division, Directorate, DG or organisational level. The learning management system hosting all training in the use of eRDM can also provide reporting on the uptake and completion of training in eRDM. Neither of these outputs is used in earnest to support performance monitoring or assurance activities.

Managing information in the SG would benefit from the implementation of an integrated performance management approach to help drive improvements, good practice and compliance among individual staff, business areas and the organisation as a whole. This would not just benefit information management itself but would add value to the achievement of wider organisational goals. Performance measures could be used to increase the use of eRDM, reduce the unjustified use of alternative information systems and complete minimum standard training. The use of work based objectives for senior staff and mandatory objectives for general staff could also be considered.

8. Training and Guidance

8.1. Uptake in Training

All staff in core SG are expected to use eRDM for their documents and records management. The majority of them would have received face to face training in the legacy application some time ago, in some cases up to 15 years ago. Knowledge of key functionality, the ‘how’, will have dissipated as will an understanding of the business purpose of using eRDM, the ‘why’.

At the end of 2019 a completely modernised web based version of eRDM, known as eRDM Browser, was delivered to all users. The new application addresses many usability issues in the previous version raised by staff, including easier general documents management and improved search functionality. To support its adoption and use a significant education, communications and change management programme was delivered. This included a new blended model of training resources including online modules and webinars that users could self-select and consume in a way that caused minimum disruption to their day job. The minimum standard was a short online overview course explaining how to get the best out of the new system which takes around 30-40 minutes to complete. To date however only around a quarter of users have completed this course. Consideration should be given to making this course mandatory to ensure all staff using eRDM are competent in its key functionality and to drive up adoption and use and reduce the risk of continued use of alternative repositories.

8.2. Defining Records and Using eRDM

Over time eRDM has become viewed by many staff as an administrative records filing system. It is in fact a business critical information management solution for the day to day management of documents within a corporate file plan with inbuilt records management features. Over time behaviours and habits have continued or been developed where much business information is managed outside of eRDM with the intention in some cases that if its important in some way a final version of an item should or may be 'filed' in eRDM, rather than it being the primary source of information and all its versions being properly managed in eRDM.

There is significant variance in understanding among staff about what information should be managed in eRDM, when and why. Different operational interpretations on what constitutes a 'record' is one of the factors. Culturally a gap has been allowed to grow between documents and records management when in fact the gap should be quite small to the point where the default is that there is almost no difference. Put simply, the majority of information created within the SG relates to the business activities of the organisation. It is owned by the organisation and to reflect its value it should be protected, properly structured, managed and readily accessible. This is best achieved within eRDM. In effect the organisation needs to put the 'D' back in eRDM. Training, guidance and policy should clarify the working definition of what constitutes a SG record and this should be applied consistently. The following is a draft definition for consideration and further refinement:

> *Records contain information that is needed for the day to day work of the SG. This includes all versions of recorded information in any form, created or received in the conduct of government business and which can provide evidence of activities, transactions and decisions carried out by, or on behalf of, the organisation. Their value and purpose is to provide a primary source of the truth and reliable evidence of and information about 'who, what, when, and why' something happened. This information must be recorded and managed in the corporate eRDM system.*

8.3. Clarifying What Not To Do

Instruction on information and records management is available to staff on what to do, how to do it and to some extent why to do it. However there is very little explicit direction to staff on what not to do and why not to do it. For example there is no specific instruction around managing information in repositories other than eRDM and the risks to the business of doing so. This gap should be closed and training, guidance and policy should be updated or developed to provide clear and explicit instruction around this to remove any ambiguity and reduce risk.

8.4. A Corporate Approach by Default

The organisation should seek to implement measures to have staff manage information in a consistent and corporate manner and where they have access to it this should be done in eRDM. Criteria should be developed against which the management of the organisation's information in a system other than corporate eRDM is properly managed and authorised. Such criteria acts as a robust test and additional safeguarding layer for the organisation's business information.

Key principles formed the criteria signed off by the SIRO for the deployment and use of the corporate eDiscovery solution. These principles were **necessary, justified** and **proportionate**. These could equally apply to any business scenario where the rationale and justification for not storing and

managing information in eRDM is demonstrably set out and signed off by a senior official, possibly the IAO for the business area concerned, and ratified by the SIRO or someone acting on their behalf.

8.5. Specific Role Based Training

The training provided to local Information Management Support Officers (IMSOs) should be reviewed. It is currently only focused on records and file management within an eRDM context. This is important but could be broadened to capture wider information management practice such as understanding the information management principles and good email management. The training provided to IAO's should also be reviewed and broadened from asset management and data protection to include key information management processes and responsibilities.

A general information management best practice course should also be considered for staff working in Directorate and Divisional BMUs. These resources are best placed to understand the business priorities of their area and where good information management can add value and reduce risk. They provide close support to senior managers and IAOs as well as a degree of oversight of operational teams. The content for this is largely already there as a result of significant updating of material as part of the new blended training model.

9. The Need for an Information Management Strategy

In addition to the conclusions and some proposed actions highlighted in this report, key recommendations are also set out for consideration. Central to these is the development of a corporate information management strategy which should clearly set out a direction of travel for the organisation to deliver its information management priorities, policies and approach to achieving best practice and compliance.

The information management strategy should align to other strategic priorities and support the overarching vision of being an open, capable and responsive government. Strategic goals should be defined which represent the future state vision around information management and a clear commitment by the SG Executive Team to creating the environment to deliver those goals. The Information Management Strategy could be based on a model of **three C's** – ***Culture, Capability and Control*** and its strategic goals could include:

Scottish Government Information Management Strategic Goals	
Creating the right organisational *culture*	➢ We value our information as a precious asset which underpins our everyday business. We treat it as no less valuable than people, finances and infrastructure ➢ Information management is a strategic priority for the SG and supports our vision as an open, capable and responsive government ➢ At all levels of the organisation we recognise and promote the importance and priority of good information management ➢ The drive for best practice is embedded in the way we handle information and 'doing it right first time' is standard practice ➢ Our behaviours around information management are consistent, corporate and aimed at achieving the highest standards

Improving information management *capability*	➢ We proactively improve the information management skills of all staff. ➢ We create business and digital solutions to analyse, transform and streamline the structure and business value of our legacy data ➢ We reduce duplication and rework through better business processes supported by automation and value creation through the provision of reuse opportunities. ➢ Wherever possible our information has a single point of truth. ➢ We provide the best available information systems which meet the needs of our work ➢ Our information management provides a return on investment through improved and consistent data, information and knowledge sharing and management. ➢ We can readily provide, exchange and publish information across the SG and externally when appropriate. ➢ We ensure the right information is available, to the right person, at the right time, in the right format, at the right place, enabling effective and efficient working, improved business decisions and accountability
Establishing clear and effective information governance and *controls*	➢ We have meaningful, appropriate and consistent controls and information governance arrangements in place at all levels of the organisation. ➢ Roles and responsibilities for managing our information assets throughout their lifecycle are not just assigned, they drive information management best practice, continuous improvement and quality assurance in our day to day business ➢ Our information management is planned annually and links to and supports our strategic priorities and objectives. ➢ We have effective measures in place to evaluate, encourage and drive our performance around information management ➢ We meet our own high standards, policies and ethical responsibilities and fully comply with our information management legal and regulatory obligations.

10. The Foundations for a Way Forward

As outlined previously the SG has at its disposal a range of functions, tools and controls which when taken together should represent a solid platform to build upon and implement the necessary changes and improvements in its management of information. There has also been significant recent investment to enable transformation of its information management capability though a major programme to modernise key corporate systems and services. This included

- the modernisation of the underlying infrastructure supporting the corporate electronic documents and records management system known as eRDM
- the implementation of a new, modernised web based desktop eRDM application to 12,000 users, supported by a workflow engine to automate key records management processes
- a new cloud document management platform, integrated to the corporate eRDM system, to support secure collaboration with external partners and customers.
- the creation of a new blended training model to support best practice information management and the use of the new eRDM and Connect cloud collaboration applications
- a new corporate eDiscovery solution to enhance the searching of legacy information stored out with eRDM and any future measures to restructure and cleanse legacy data in support of wider business and technology strategies.

11. The Benefits of eDiscovery

Data Management and eDiscovery should be key components in the organisation's Information Management Strategy. The SG has invested in a corporate eDiscovery solution which has already delivered significant business benefits in supporting specific information searching and analysis requirements. The eDiscovery business case was supported by collaborative learning with other organisations including the Welsh Government, Home Office, Serious Fraud Office and Police Scotland who have all deployed the solution. This powerful software offers a key enabler in overcoming some of the challenges of the legacy information. It has already ingested and re-indexed the entire contents of the network G Drives which can then be de-duplicated and cleansed. This enables more efficient and reliable searching, analysis and reuse of information.

Crucially eDiscovery can support the business in identifying information which should no longer be retained or which should be stored in eRDM and subject to proper records management. It will also support longer term technology strategies around potential migration to cloud based hosting services. Senior officials in iTECS have recognised that the SG cannot contemplate migrating the current mass of unstructured and problematic information to other hosting environments.

A dedicated but very small eDiscovery team was recently established within the KIM Branch of iTECS. These resources, trained in the use of the new specialist eDiscovery software, have primarily been drawn into supporting the operational business requirements of specific inquiries. Whilst this is a valid use of the tool it impacts on the team's ability to focus on supporting the development of a strategy to deliver the original strategic objectives around the cleansing of legacy data etc.

The eDiscovery resource profile should ensure capability and capacity can match both the immediate operational needs of the business and the organisation's business and technology strategies around digital data. eDiscovery will be a key enabler in those strategies which should also address not just legacy 'on premises data' but also information that may be hosted in the cloud.

12. Exploiting Workflow and Business Process Automation

Workflow is a significant enabler in unlocking information management benefits not just through the release of efficiencies but improving information governance by reducing error and risk. The SG has invested in a corporate workflow engine as part of the eRDM Improvement Programme. This has already delivered benefits though automating some records management processes and touchpoints between the corporate records management team, IMSOs and end users.

Currently the delivery of workflows is a part time function and responsibility of a very small team in the KIM Branch with call off support from the software supplier. Increasing capacity and capability in workflow development would deliver efficiency and effectiveness benefits and provide further return on investment. The resourcing of this function should be reviewed in conjunction with that of the eDiscovery and Education and Engagement teams.

13. Outline Strategic Plan

This report makes key recommendations which are also reflected in the following high level strategic plan which sets out a timeline based on short, medium and long term objectives. The recommendations follow in section 14.

High Level Strategic Plan for Information Management

<table>
<tr><th></th><th>SHORT TERM
YEAR 1</th><th>MEDIUM TERM
YEAR 2</th><th>LONG TERM
YEAR 3 +</th></tr>
<tr><td>Values and Culture</td><td colspan="2">Recognise and enhance the value of information. Raise the corporate priority and strategic profile of information and records management. Improve behaviours and culture.</td><td rowspan="6">Embed and sustain new model of information management best practice and continuous improvement</td></tr>
<tr><td>Strategy</td><td>Implement a corporate whole-of-government information management strategy</td><td>Ongoing review and continuous improvement</td></tr>
<tr><td>Governance</td><td>Establish a corporate information governance model</td><td>Ongoing review and continuous improvement</td></tr>
<tr><td>Performance</td><td colspan="2">Implement a corporate information management performance framework</td></tr>
<tr><td>Investment</td><td>Review resourcing of information management at local, Directorate and Corporate Levels</td><td>Ongoing review and continuous improvement</td></tr>
<tr><td>Risk Reduction</td><td colspan="2">Deliver a corporate improvement programme to address key risks and gaps in the short to medium term.
Embed lessons learned in the implementation of new digital information systems e.g. Microsoft 365</td></tr>
</table>

14. Key Recommendations

Key Recommendation 1

Take measures to recognise and enhance the value of information to the organisation and improve the culture around information management. This should include significantly raising the corporate priority and profile of information and records management, so that their value and importance visibly links to and supports strategic goals.

Key Recommendation 2

Develop a corporate, whole-of-government Information Management Strategy that sets the strategic direction for the SG's digital information policies, practices and processes.

Key Recommendation 3

Implement a corporate information governance model which creates a cohesive and collaborative approach across all information disciplines to drive best practice and compliance and ensure information management practices meet legal obligations, accountability requirements, business needs and stakeholders' expectations.

Key Recommendation 4

Develop and deliver a corporate improvement programme aimed at addressing key information management risks and gaps in the short to medium term whilst building a sustainable and responsive business model for best practice digital information management in the future.

Key Recommendation 5

Create and implement a performance management framework which provides an integrated approach to helping the SG achieve best practice by monitoring and improving information management performance at all levels including individuals, teams, Branches, Divisions, Directorates, DG areas and the organisation as a whole.

Key Recommendation 6

Take measures to significantly manage down the availability and use unstructured information repositories, such as the Network Drives and Outlook Public Folders and develop clear criteria, guidance and policy for the management of information outside of the corporate eRDM system.

Key Recommendation 7

Reduce risk to the future business of the organisation by taking forward lessons learned into the implementation of the next generation of digital information systems, including Microsoft 365 applications and ensuring best practice information management is embedded in their configuration and use.

Key Recommendation 8

Review the resourcing of information management in the organisation. This should include resources within local, directorate and corporate functions as well as resourcing the delivery of the recommendations from this review.

15. Annex A – Summary conclusions from strategic assessments of information management within the UK and Scottish Governments

Review/Assessment	Key Findings/Recommendations
December 2015 **UK Cabinet Office** Review of Government Digital Records	• Policies and guidance on capturing and managing digital information are sound; the problems come in the implementation; • Existing systems which require individual users to identify documents that should constitute official records, and then to save them into an EDRMS (Electronic Document and Record Management Systems); or corporate file plan, have not worked well. As a result, almost all departments have a mass of digital data stored on shared drives that is poorly organised and indexed • Two main issues: what are the best technologies going forward to ensure that digital information is properly managed in future; and what technologies can help to organise and search existing legacy digital data stored outside EDRMSs • There will be a need to ensure the appropriate culture is embedded in departments and that changes are backed up by a high level push to make sure new procedures are followed in practice
January 2017 **UK Cabinet Office** Better Information for Better Government	• Government information management has yet to meet the digital challenge. Most departments hold significant amounts of unstructured legacy digital information and few have a full understanding of the legislative, reputational and operational risks this poses and the wasted efficiency opportunity • Our aim should be simply that government departments get better at managing their legacy collections and improve current information management by drawing on all the levers at their disposal and should: ▪ Evaluate the level of risk they face from legacy digital information collections and take appropriate action ▪ Undertake renewed efforts to drive information management compliance across their business ▪ Identify and progress strategic initiatives to improve government information management structures and processes cross-government
July 2017 **Scottish Government** **eRDM Improvement Programme - Full Business Case**	Strategic Case approved by the Executive Team identified the need to • Significantly raise and enhance the profile and business priority of documents and records management across the Scottish Government • Improve the understanding and application of key business processes, best practice and compliance • Increase the wider adoption and use of the corporate eRDM solution

	• Create visible business leadership, ownership, corporate priority and strategic direction in information management and for all levels of senior management to visibly, continually and unequivocally assign appropriate corporate priority and significant time and resources to creating a successful organisation wide environment to deliver improvement.
May 2019 **Scottish Government** **Corporate eDiscovery Project - Outline Business Case**	The legacy information environment (outside of eRDM) • Is not properly managed, unaudited, not corporate and in its current state cannot be quickly, easily or reliably searched or reused by the business corporately. • Adversely affects capability, performance and compliance. • Represents a corporate level information security risk in itself through its sheer volume and lack of structure, audit and proper governance • Is inherently inefficient and carries unnecessary cost • Constrains the Scottish Government's current and future digital and business strategies.