CabinetOffice

Government ICT Strategy

March 2011

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FOREWORD

1. Government information and communications technology (ICT) has a really bad name. Much of this is unjustified. All big organisations – whether in the public or private sector – have examples of failure in delivering big ICT projects and programmes. In the public sector, the failures tend to be very public, while in the private sector, it is easier to keep them in decent obscurity. It is not obvious that the record of government is significantly worse than that of other big organisations.

2. Nonetheless, there have been significant failings. The Coalition Government is determined to do things better. Government ICT is vital for the delivery of efficient, cost-effective public services which are responsive to the needs of citizens and businesses. We want government ICT to be open: open to the people and organisations that use our services; and open to any provider – regardless of size.

3. We have identified the following challenges, many of which are interconnected:

- projects tend to be too big, leading to greater risk and complexity, and limiting the range of suppliers who can compete;
- Departments, agencies and public bodies too rarely reuse and adapt systems which are available 'off the shelf' or have already been commissioned by another part of government, leading to wasteful duplication:
- systems are too rarely interoperable;
- the infrastructure is insufficiently integrated, leading to inefficiency and separation;
- there is serious over-capacity, especially in data centres;
- procurement timescales are far too long and costly, squeezing out all but the biggest, usually multinational, suppliers; and
- too little attention has been given at senior level to the implementation of big ICT projects and programmes, either by senior officials or by ministers. Similarly, senior responsible owners (SROs)

have rarely been allowed to stay in post long enough.

4. To address these challenges, we have done – or will do – the following:

- introduce new central controls to ensure greater consistency and integration;
- take powers to remove excess capacity;
- create a level playing field for open source software;
- greatly streamline procurement and specify outcomes rather than inputs;
- create a presumption against projects having a lifetime value of more than £100 million;
- impose compulsory open standards, starting with interoperability and security;
- create a comprehensive asset register;
- create a cross-public sector Applications Store;
- expect SROs to stay in post until an appropriate break in the life of a project/programme; and
- encourage boards to hold ministers and senior officials to account on a regular basis for the progress of ICT projects and programmes.

5. This strategy sets outs the strategic direction of central government ICT and the key actions that will be delivered over the next 24 months. The Chief Information Officer (CIO) Delivery Board will publish a strategic implementation plan, in collaboration with departments and HM Treasury, by summer 2011. All these initiatives will be funded from within existing spending plans. They are all about spending money better, rather than spending more, and will be used as exemplars of the Government's major projects methodology.

The Rt Hon Francis Maude MP
Minister for the Cabinet Office

INTRODUCTION

6. Information and communications technology (ICT) is critical for the effective operation of government and the delivery of the services it provides to citizens and businesses. It offers key benefits by enabling:

   - access to online transactional services, which makes life simpler and more convenient for citizens and businesses; and
   - channels to collaborate and share information with citizens and business, which in turn enable the innovation of new online tools and services.

7. ICT is a fundamental tool that every modern state needs – be it for school-leavers applying for a student loan, for a neighbourhood watch group scrutinising local crime figures, or in order to reduce travel costs for public sector workers by increasing the use of video-conferencing or remote working. This strategy will deliver better public services for less cost. ICT can release savings by increasing public sector productivity and efficiency. The savings are critical in order to reduce the structural deficit and continue to fund front-line services.

8. The Government ICT strategy will enable the building of a common infrastructure underpinned by a set of common standards. Government will work to accelerate implementation of the strategy as part of its drive to cut down costs and improve current capabilities.

9. The strategy will build on the ICT moratorium, project review and contract renegotiations which have allowed the Government to appraise and take control of spending and ensure that projects demonstrate value for money and effectiveness. It will further underline the Government's commitment to increasing transparency, through actions such as publishing government ICT contracts online. This will make it easier for the public to scrutinise how money is spent as well as opening up new opportunities for business.

10. The strategy is focused on driving real change. It sets out how government ICT will enable the delivery of public services in very different ways to the past. The Government is taking a different approach to deliver this strategy, characterised by a strong centre and continued commitment to greater transparency through regular and open reporting. The approach includes:

- mandatory open standards;
- spending controls to ensure that new ICT solutions comply with strategy objectives;
- transparency to ensure the continued comparison of common ICT services so that government gets the best price;
- increased standardisation and modularisation of business processes and supporting technologies to create a platform from which government can deliver new models of open and innovative public services;
- a new, strengthened governance structure; and
- greater engagement with departments and suppliers to remove cultural as well as technical barriers.

PART 1 – REDUCING WASTE AND PROJECT FAILURE, AND STIMULATING ECONOMIC GROWTH

11. The Government is committed to improving the way it delivers ICT-enabled business change so that investments in ICT support business needs and deliver expected benefits. To do this, government will adopt the right methods and policies and develop a skilled workforce in order to improve and exploit its ICT. By reforming its approach to ICT, government will also help to stimulate economic growth by creating a fairer and more competitive marketplace, with greater direct opportunities for small and medium-sized enterprises (SMEs).

12. Government will ensure that technology requirements are considered earlier in the policy-making process. This approach will be supported by the application of lean and agile methodologies that will reduce waste, be more responsive to changing requirements and reduce the risk of project failure.

13. Where possible, government will move away from large ICT projects that are slow to implement or pose a greater risk of failure. Additionally, the application of agile ICT delivery methods, combined with the newly established Major Projects Authority, will improve government's capability to deliver projects successfully and realise benefits faster.

14. The Government will also put an end to the oligopoly of large suppliers that monopolise its ICT provision. The Government will streamline the procurement process to break down the barriers that impede SMEs from bidding for contracts. The Government will also create a level playing field for SMEs and system integrators by creating a platform based on

common standards. The platform will enable SMEs to invest in new government ICT solutions and allow government to buy directly from them.

Sharing and reusing solutions

15. Departments will reuse and share ICT solutions and contracts, rather than purchasing new or bespoke solutions. The mandate of specific open standards will make ICT solutions fully interoperable to allow for reuse, sharing and scalability across organisational boundaries into local delivery chains. Government will not commission new solutions where something similar already exists.

16. Where appropriate, government will procure open source solutions. When used in conjunction with compulsory open standards, open source presents significant opportunities for the design and delivery of interoperable solutions.

17. To identify reusable applications, equipment and resources, government will populate a comprehensive cross-government asset register. The Government will also create an online Applications

Store to enable the reuse of business applications and components across the public sector.

The Customer Informations Systems, National Insurance Recording System and payment infrastructure are examples of systems and infrastructures shared by the Department for Work and Pensions (DWP) and HM Revenue and Customs. The Government Gateway is an example of an infrastructure shared extensively across central and local government.

DWP Shared Services provides a single enterprise resource planning tool and infrastructure which supports multiple departments, including the Cabinet Office and Department for Education.

Spending controls

18. The Government has implemented ICT spending controls to ensure that it spends taxpayers' money more carefully. The ongoing controls on new ICT spending and the use of external consultants and contractors have already released significant savings. In parallel with these controls, the Government has also carried out a rigorous review of its ICT portfolio of

projects valued over £1 million to identify those to be stopped, reshaped or allowed to proceed. The Government will continue to publish spending information on projects and specific services as part of its commitment to increasing transparency and driving down costs.

19. Building on the success of these measures, the Major Projects Authority has been established as the central scrutiny body to control ICT spending and advise departments at the earlier design stage how best to approach ICT solutions for business delivery needs.

20. Through portfolio management of our ICT landscape and the spending controls, we will be able to avoid unnecessary investment. This will release resource for innovation.

Improving the way government sources ICT

21. Government sourcing of ICT has often failed to deliver economies of scale and the most cost-effective use of taxpayers' money. The Government will therefore aim to

become a single and effective ICT customer which will leverage its considerable buying power to drive down the operating cost of its ICT.

22. Additionally, the Government will remove barriers to allow SMEs, the voluntary and community sector and social enterprise organisations to participate in the government ICT marketplace. Greater transparency and simpler channels for accessing data and government procurement tender opportunities will provide better support to businesses and open a fairer and more competitive market.

Presumption against large projects

23. Where possible, the Government will move away from large and expensive ICT projects, with a presumption that no project will be greater than £100 million. Moving to smaller and more manageable projects will improve project delivery timelines and reduce the risk of project failure.

Increasing ICT professional capability to deliver successful business change

24. Government has become over-reliant on external expertise from

consultants, contractors and interim staff, as well as the recruitment of public sector ICT leaders from the private sector. This has resulted in high costs and an erosion of the skill base within government. It is essential that our workforce has the capability to successfully deliver ICT-enabled business change and services.

25. The Government will publish an ICT Capability Strategy within the next six months, which will set out its approach to increase capability. It will include detail on talent management, the continued growth of the Technology in Business fast stream, and measures to increase the exchange of skills and best practice from the private sector.

26. Continuity in leadership and accountability are critical factors to the successful delivery of an ICT project/programme. Government will appoint SROs with the expectation that they will stay in post until an appropriate break in the life of an ICT project/programme, to reduce the risk of project failure.

Agile project delivery

27. Government will apply agile methods to ICT procurement and delivery to reduce the risk of project failure. Agile methods allow projects to respond to changing requirements and ensure that the solutions meet business requirements.

28. A Government Skunkworks has been established to develop low-cost, fast and agile ICT solutions. Skunkworks provides a new channel for SMEs and entrepreneurs to participate in government ICT with new and innovative solutions. Skunkworks is embedded into the spending approvals process which identifies where existing products can be reused or solutions developed in-house. Skunkworks is working to develop an environment for SMEs to test their solutions to ensure compatibility within government's future standardised cloud environment.

29. Skunkworks is working with venture capital, private equity and angel funders to provide support for SMEs and entrepreneurs as part of

its work on wider community engagement. The aim is to help break down some of the barriers to enterprise and agility by tackling common issues such as procurement, scalability and funding.

Benchmarking and performance measurement

30. Through continued and transparent performance measurement and benchmarking of ICT indicators, government will better understand spending and capability, and drive performance improvement across government.

		Delivery timescales		
Action		Within 6 months	Within 6–12 months	Within 12–24 months
1	To improve the sharing and reuse of ICT services and solutions, departments will populate the first stage of a comprehensive cross-government ICT asset register	•		
2	To become a single intelligent procurer of ICT, the Government will develop a new operating model for departments and will roll out a new procurement system	•		
3	To create a level playing field for the use of innovative ICT solutions, the Government will publish a toolkit for procurers on best practice for evaluating the use of open source solutions	•		
4	To assist with the deployment of agile solutions using open source technology, the Government will establish an Open Source Implementation Group, a System Integrator Forum and an Open Source Advisory Panel. These will aim to educate, promote and facilitate the technical and cultural change needed to increase the use of open source across government	•		
5	To create greater opportunities for SMEs and to reduce risk of project failure, the Government will publish guidance on the presumption against government ICT projects valued at over £100 million	•		
6	To increase SME participation, the Government will publish a new approach to ICT procurement that will reduce timescales and cost, and will ensure that SMEs are provided with improved opportunities to directly compete for government business	•		
7	To increase accountability, the Government will publish both estimated and actual procurement timescales for new procurements over £10,000, and details of contracts awarded to SMEs	•		
8	To encourage greater SME participation, the Government will publish all new tender documents over £10,000	•		
9	The Government will establish an approach and capabilities for agile delivery in government which can be replicated across departments (culture, multidisciplinary teams, risk-based testing, service-oriented architecture, product management and road-mapping)		•	
10	The Government will identify and agree the common technology components that are needed to underpin agile development		•	
11	The Government will create a 'virtual' centre of excellence across government and the private sector which can enable fast start-up and mobilisation for agile projects			•
12	The Government will identify a pilot project within each department to prove and embed the agile approach		•	
13	The Government will publish an ICT Capability Strategy including – as key outcomes – a blueprint for a programme to utilise and develop talent among existing civil servants, and the guiding principle that SROs will be expected to stay in post until an appropriate break in the life of an ICT programme/project to reduce the risk of failure	•		
14	The Government will create a fully operational, online Applications Store to enable the reuse of business applications and components across the public sector			•

PART 2 –
CREATING A COMMON ICT INFRASTRUCTURE

31. To carry out its day-to-day operations, government relies on complex and large-scale ICT infrastructure components. However, government departments have traditionally worked independently to design, procure and run their own ICT solutions. This has resulted in an expensive and fragmented ICT infrastructure which often duplicates solutions and impedes the sharing and reuse of services. A new approach is required to create the ICT that will deliver the modern public services which citizens and businesses expect.

32. The Government will push ahead with its agenda for data centre, network, software and asset consolidation and the shift towards cloud computing. It will mandate the reuse of proven, common

application solutions and policies. These solutions must balance the need to be open, accessible and usable with the growing cyber-security threat and the need to handle sensitive information with due care.

33. Common technology standards will enable the delivery of an open platform to support smaller, interoperable solutions. By opening up access to this platform, government will be able to procure solutions directly from SMEs rather than predominantly via systems integrators, helping to create a fairer and more competitive ICT marketplace.

34. Cloud computing delivers infrastructure, platform or software as a utility service, giving government the capability to respond to changing operational needs. The standardised cloud platform will also allow developers, especially SMEs, to generate innovative solutions.

35. In the past, legacy ICT systems have acted as barriers to the rapid introduction of new policies. A common infrastructure based on

open standards will allow for greater flexibility of policies and services delivered at lower cost and within a shorter timeframe.

Interoperability enabled by open standards

36. The Government will create a common and secure ICT infrastructure based on a suite of agreed, open standards which will be published and updated. The use of common standards can make ICT solutions fully interoperable to allow for reuse, sharing and scalability across organisational boundaries into local delivery chains. The adoption of compulsory open standards will help government to avoid lengthy vendor lock-in, allowing the transfer of services or suppliers without excessive transition costs, loss of data or significant functionality.

37. The requirements of cyber-security and information assurance will be embedded in the common ICT infrastructure. Green ICT standards that are pivotal to the delivery of improved cost efficiencies will also be factored into the design, delivery and disposal of ICT solutions.

38. Managing information effectively and appropriately is essential to the delivery of secure, seamless and efficient operational services. It provides the basis for informed decision making and the platform upon which performance can be measured. Modern, knowledge-based service delivery underpinned by effective information architecture and open standards will support government to build more transparent, trusted and efficient information exchange processes. The Government will develop an information strategy that is supported by an architecture framework which will underpin the design of government's new information systems.

39. The Government believes that citizens should be able to read government documents with the standardised document format reader of their choice. The first wave of compulsory open standards will determine, through open consultation, the relevant open standard for all government documents.

40. In a world increasingly interconnected by technology,

government cannot work in isolation. The Government will continue to work with the European Union to ensure that its ICT meets legal obligations and, where applicable, aligns its frameworks and strategies with those commonly agreed at a European level to improve the way Member States work across borders. The Government will work with countries across the world to learn from, share and reuse the best solutions and standards.

	Action	Delivery timescales		
		Within 6 months	Within 6–12 months	Within 12–24 months
15	To ensure that appropriate data is transparent and shared rather than duplicated, the Government will implement engagement processes for open data standards activity and crowd-source priority areas for data standards	●		
16	To reduce the cost and carbon footprint of government ICT, the Government will set up a programme to reduce the cost of data centres across the estate, leading to a 35% reduction in costs over five years	●		
17	To reduce the cost of government networks, the private sector will deliver the first instantiations of Public Sector Network		●	
18	To improve the flexibility and reduce the cost of desktop solutions, the Government will publish a common desktop/device strategy with detailed implementation plans	●		
19	To examine the benefits of delivering standardised desktop services using a cloud-based model, the Government will develop a desktop prototype for the cloud		●	
20	To detail how services will shift to cloud-based technologies, the Government will publish a Cloud Computing Strategy with implementation plans	●		
21	To enable delivery of interoperable and open ICT solutions so that they can be shared and reused, the Government will publish a reference architecture		●	
22	To allow for greater interoperability, openness and reuse of ICT solutions, the Government will establish a suite of agreed and mandatory open technical standards		●	
23	To recognise information as an organisational asset and to deliver improved access to clean and consistent information, the Government will develop an Information Strategy while maintaining necessary protection for sensitive information		●	
24	The Government will publish a Greening Government ICT strategy in line with the Government ICT Strategy and wider carbon reduction policies This will set out how government will achieve reductions in operational costs and carbon footprints, and will include the use of collaboration and mobile working technologies	●		
25	The Government will develop an appropriate and effective risk management regime for information and cyber-security risks for all major ICT projects and common infrastructure components and services		●	

PART 3 – USING ICT TO ENABLE AND DELIVER CHANGE

41. By standardising processes and creating transparent commercial models, the Government will build a common, flexible ICT infrastructure. This ICT platform will enable the delivery of open, diverse and responsive public services for all.

42. ICT is an enabler for opening up public service delivery to a range of providers competing to offer better and more cost-effective services. A common ICT platform provides the opportunity for a diverse range of providers to generate innovative solutions. Commoditised design will enable flexibility and agility of supply. Through opening up the market, costs will come down for the solutions and the platform itself, innovation will increase and services will improve.

43. ICT also provides an opportunity to change the relationship between citizen and government so that policy formulation and service design are developed in collaboration with citizens.

Agile, personalised and responsive services

44. Innovations in online commercial services have set high standards for an increasingly mobile population. Many citizens' expectations have shifted from traditional face-to-face, telephone or paper channels to more responsive 24/7 online personalised services and delivery through mobile devices.

45. Easy-to-use, trusted and flexible online transactional services, such as student loans or Jobseeker's Allowance, reduce the bureaucratic and time burden on citizens. Therefore, the Government will work to make citizen-focused transactional services 'digital by default' where appropriate using Directgov as the single domain for citizens to access public services and government information. For those for whom digital channels are

less accessible (for example, some older or disadvantaged people) the Government will enable a network of 'assisted digital' service providers, such as Post Offices, UK online centres and other local service providers.

Through Directgov, Jobcentre Plus provides a job search service for people looking for work. However, some citizens who need this service do not have access to a computer at home, but do own a mobile phone with internet access. Directgov and Jobcentre Plus therefore created a mobile browser service and application to provide access to the job search service on mobile phones in order to make it much more accessible. The job search app was downloaded over 100,000 times within the first six months of its launch in March 2010.

46. Directgov will invite third parties to build new applications and tools to integrate services and content, increasing the use of mobile technologies to make transactions between citizens and government simpler and easier.

47. To make it easier for citizens to access digital public services, it is essential to assure and keep secure the identity of our customers. This will improve interaction while delivering appropriate levels of privacy. The Government is committed to providing 21st-century identity assurance methods and is engaging with the private sector on this.

Democratic power shift using digital channels

48. Social media and e-petitions will allow citizens to have increased dialogue and involvement with the Government. This will ensure that policy is developed in consultation with citizens.

49. The Government will use technology to break down barriers and engage with citizens and businesses, bringing innovation to the way in which policy is formulated and delivered. Through greater digitally enabled engagement and collaboration, the Government will create and deliver policy in an open and accessible forum. This will enable citizens to influence, comment on and contribute to the decision-making process.

Opening up public sector provision

50. The Government is committed to opening up public sector monopolies and challenging old models of service delivery to drive improvement across public services. It will promote a public service economy based on open ICT markets with increased participation of SMEs, the voluntary and community sector, and other diverse providers to raise standards across public service delivery.

51. To achieve this, the Government must provide a technology environment that is flexible and usable across a wider delivery network. Opening up the delivery channels of government will require that we share systems with a new range of stakeholders and agencies, while ensuring the security of personal data.

52. The Government will open its data and application interfaces in ways that encourage businesses and social providers to develop new market opportunities. For example, the website Mumsnet uses Directgov tools built on standardised interfaces to provide their users with official up-to-date information on schools and family services. Similarly, local authorities use data provided by Directgov application programme interface (API) tools to enable users to access information on a range of national and local services.

HM Revenue and Customs (HMRC) has defined the APIs for its online services and made these, together with validation rules and test scripts, publicly available so that third parties can build software products which can calculate and submit information online. In addition to the filing products offered by HMRC, 1,500 commercial software developers now provide online filing products for more than 20 HMRC online services. Products and payroll packages developed by third parties have allowed employers to file 58 million P14 end-of-year submissions online.

53. To support this opening up of data, the Government will establish the Public Data Corporation to bring together government bodies and public data in one organisation. This will allow developers, businesses and citizens to access

data and use it to develop internet applications, inform their business decisions and identify ways to run public services more efficiently.

Collaborative and mobile public sector working

54. To connect, mobilise and reduce cost across the public sector, the Government will further exploit mobile technologies, collaboration tools, and video and teleconferencing. These technologies will equip the public sector workforce with the tools to operate flexibly, providing additional benefits to customers. Working flexibly will facilitate the rationalisation of the public sector's large and diverse property estate, reduce travel costs and carbon footprint, and have a beneficial impact on productivity.

Horizon scanning for future-proofed solutions

55. The Government will improve its capability to exploit the benefits of new technologies by establishing new approaches, ensuring that informed decisions are being made at an early stage. The Government will systematically scan the horizon to identify changes in technology and assess the associated opportunities and risks. A Director of ICT Futures will be appointed to take responsibility for improving the Government's capability to meet this challenge of fast-moving technology in order to drive change in the way in which the Government adopts a more rapid and open ICT development approach.

		Delivery timescales		
Action		Within 6 months	Within 6–12 months	Within 12–24 months
26	To make citizens' lives simpler and easier, the Government will mandate 'channel shift' (move online) in selected government services	●		
27	To open up new, innovative services from a diverse range of providers, the Government will create cross-government standards on APIs and develop a quality assurance 'kite mark'			●
28	To improve government capability to exploit new and innovative ICT solutions, the Government will appoint a Director of ICT Futures	●		
29	To facilitate a two-way dialogue with citizens, departments will ensure that an online channel is included in all government consultations	●		
30	To embed social media as a mainstream channel used routinely to engage with citizens, business and internally, the Government will develop practical guidelines on departmental access to the internet and social media channels		●	

PART 4 – STRENGTHENING GOVERNANCE

56. The strategy will be delivered through lead departments accepting responsibility for actions and parts of the ICT infrastructure model where delivery activities are already aligned with their work. This form of devolved delivery will require new and robust governance.

57. A governance structure (see Annex) has been created to drive delivery and critical early momentum.

58. A new ministerial committee (the Public Expenditure Committee (Efficiency and Reform), or PEX(ER)) has been created which will drive progress by providing a forum for scrutiny and decision making in order to ensure that government ICT is used more effectively to power public sector reform.

59. A CIO Delivery Board, comprising CIOs from the large delivery departments, will be established to sit above the CIO Council and advise PEX(ER) on progress. The Delivery Board will take ownership of the delivery and implementation of the ICT Strategy. This method of delivery will require corporate behaviour and action from all departments.

60. The CIO Council members are accountable for implementing the strategy in their organisation and portfolio managing their ICT. The CIO Delivery Board and CIO Council will be led by the Government Chief Information Officer, supported by the Efficiency and Reform Group based within the Cabinet Office.

61. Many of these actions represent not just technological change, but changes to the operating culture of government. Strong leadership within and across all departments will be required to drive this strategy forward.
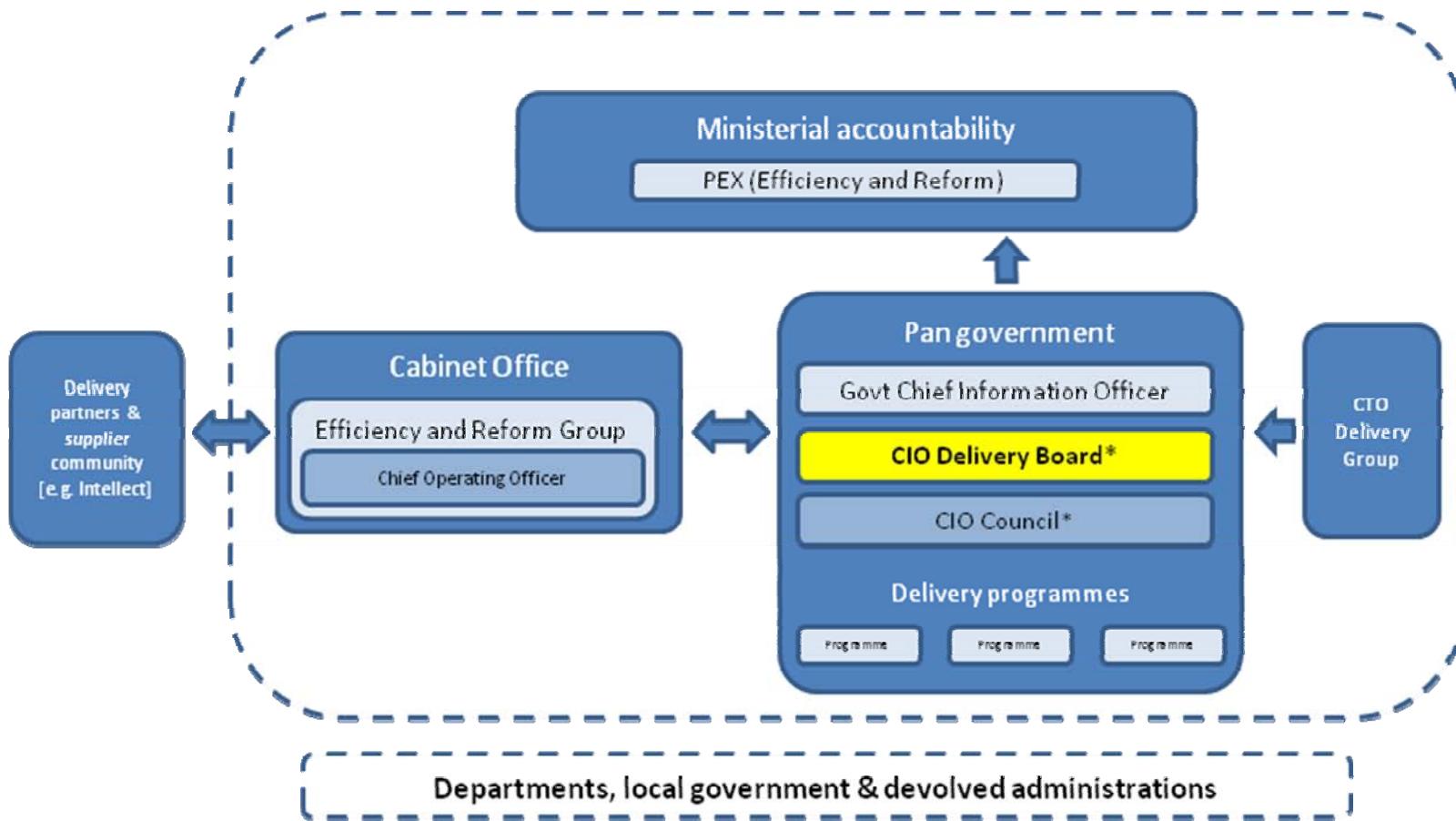
62. The governance structure will be reviewed as strategy delivery

challenges are identified during the development of the strategic implementation plan. Delivery of the strategy is dependent on a governance structure that:

- nurtures opportunities for innovation;
- scrutinises, measures and enforces compliance with mandated standards and actions;
- identifies successful solutions and leverages their wider adoption; and
- coordinates engagement with suppliers to commoditise services and deliver better commercial outcomes for government.

63. The strategy applies to central government, executive agencies and arm's length bodies. The Government will continue to work with wider public sector interests to ensure the delivery of better public services for less. The Cabinet Office will also work with the devolved administrations to develop a shared vision that aligns with the principles of the strategy.