HM Government

# Government ICT Capability Strategy

A sub strategy of the Government ICT Strategy
March 2011

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# Introduction

The Government has published an Information and Communications Technology (ICT) Strategy and Strategic Implementation Plan that set out at a high level the direction and key actions that Government needs to take to ensure the delivery of efficient, cost-effective public services responsive to the needs of citizens and businesses. To support delivery of the ICT Strategy, it has now developed this ICT Capability Strategy alongside new strategies on End User Device, G-Cloud, and Greening Government ICT.

This strategy addresses the "people" aspect of the future of Government ICT to complement the more technical strategies. Clearly the other strategic initiatives such as G-Cloud, and indeed areas such as cybersecurity, need new skills now, and their acquisition is a prerequisite for delivering those strategies. But the strategic challenge that this Capability Strategy addresses is how Government builds a cadre of expertise that continually and sustainably develops to keep up with a rapidly changing technical and commercial environment. This is a substantial task that moves the Government IT Profession forward significantly and quickly, and lays the foundation for many benefits in the future, including enabling more interchange between government and other sectors.

> This strategy fulfils Action 13 in the Government ICT Strategy. In adopting it, the Government has committed to a cross-government, profession-wide, common approach to
> - development paths for ICT professionals
> - curricula for ICT professionals
> - progression standards
> - managing talent & resources across departments
> - sourcing training and development
> - professional standards & accreditation.

For example, we have seen how over the last decade both commercial and government organisations have moved from a world where ICT systems were developed for use by internal staff (or public servants) who could be directly trained in their use to one where the end-user is the customer or citizens. This trend will continue. In a similar timeframe, a wide variety of outsourcing and shared service arrangements have been set up within government. Such shifts present new waves of skills needs (and others will come in future). So one of the first deliverables under this strategy is an analysis and model of the functions and skills that Government needs to have and retain in-house, particularly in relation to these two challenges.

These challenges are not unique to government. Consequently the implementation of this strategy will utilise industry-standard approaches, most notably the Skills Framework for the Information Age (SFIA). SFIA is regularly refreshed to keep abreast of trends in the industry such as those mentioned above.

For example, the 2011 edition (version five) includes pertinent skill categories such as user experience analysis, innovation, emerging technology monitoring, animation development, software development process improvement, information security, sustainability management, IT estate management, contract management and supplier relationship management.

The strategic challenge for the IT Profession in government, and the wider public service, is to improve the effectiveness and efficiency of its people's contribution to the business of government and public services at a time when the importance of ICT is increasing, reliance on it is increasing, expectations of it are increasing, scrutiny of it remains high, and supply of money for it is decreasing. This strategy is therefore about how the Government IT Profession deals with the key and interlinked issues of **capability** and **cost** to ultimately deliver **better ICT** for the Government and the public.

> ***The Vision for the Strategy***
>
> **Increased Capability + Reduced Cost → Better ICT in Government**
>
> The Government IT Profession will:
>
> - do its job better, using modern methods & tools
> - do more with the resources available
> - be more self-sufficient in people
>
> and **everyone** in and joining the Government IT Profession can see a route to realise their potential, **whatever and wherever** that may be.

The strategy has already initiated a portfolio of cross-government workstreams that deliver its components and put new processes in place to embed them in practice. This document describes that strategic programme of implementation work now under way.

The strategy breaks new ground by taking a cross-government, **profession-wide** approach to the development of ICT professionals and their management. It puts career development and progression structures in place for the whole of the profession, for the first time (illustrated in a Blueprint, described in this document). It aligns the Profession with external industry practice and with internal civil service strategies for learning and development. It also aims to attract people into the profession, from high calibre fast stream graduates to existing non-ICT public sector workers, recognizing the need to invest in existing staff.  This makes sense at a time when the external market for some skills is very strong.

The strategy will build processes that enable cross-departmental management of the talent within the Profession. Out of the strategy will come career paths and curricula for every ICT professional in government. Membership of the Government IT Profession will go hand in hand with participation in the frameworks and development paths created by this strategy.

Some parts of the strategy such as talent management processes will deliver results within the short and medium term. Others, such as showing a career path for graduate entrants to reach Chief Information Officer (CIO) level, will take many years to bear fruit.

Government ICT professionals need more than just the ICT skills defined in SFIA. Emerging from earlier work on a cross-government and cross-profession Skills Strategy, central government has established the Civil Service Learning (CSL) Common Curriculum. CSL is putting in place a portal (www.civilservice.gov.uk/learning) backed up by a cross-government shared procurement and supply framework for learning and development.

This provides the channel for ICT professionals to acquire wider personal and business learning, and the IT Profession's curriculum will integrate with it. Leadership is an important and integral part of that curriculum. The IT Profession's curriculum will also helpfully be able to draw on comparable curricula from other professions where they overlap with the IT Profession's one, notably Programme & Project Management, Procurement, Knowledge and Information Management, Policy, and Operational Delivery.

## Scope

The drivers for this work and hence the articulation of this strategy relate specifically to the Home Civil Service, but the expectation is that its approach, framework and many of its outputs are usable or adaptable elsewhere in the public service (with modifications to reflect different organisational and grade structures). It addresses managing and developing capability within the existing civil service pay and grading structure without seeking or anticipating any changes to that.

The strategy & its "Blueprint" for the IT Profession are about people whose career anchor is in ICT not organisational structures or posts, so its scope is not equivalent to the staff of ICT departments. They focus on cadres of people within the profession and their development and progression – for example "academies" are groups of people not institutions or buildings. They cover all grades and skill levels (although some of the implementation work begins with smaller groups or key senior ones to define workable processes that can then be extended to the Profession as a whole).

The work of the IT Profession and hence this strategy is about business computing and information systems in support of public administration. It does not intend to cover skills for areas such as engineering or electronics, or skills that are specific to just one organisation or function. It is well recognised that ICT professional skills overlap with other professional skill sets such as project management, information risk management, procurement and knowledge and information management, and the strategy will aim to make the most of such synergies to benefit ICT professionals.

The National Cyber Security Strategy recognises that to transform its cyber capability the UK needs to invest to develop its cyber skills base. A key part of that effort is ensuring that the right technical skills continue to be available to government to meet the full range of its cyber challenges — from the cryptographic expertise needed to keep our secrets secret to the more applied domains of secure systems design and pragmatic, risk-focused security accreditation.

Though this is a more multifaceted challenge than can be met in the ICT capability domain alone, it is essential that ICT professionals have an understanding of the principles of information risk management and cyber security. Both sets of professionals need enough knowledge, understanding and basic skills to work together. In addition, those in the ICT profession who are responsible for core elements of architecture, and hardware, firmware, and software design should have the correct cyber security training and skills.  The aim is that cyber security is built into ICT systems from the earliest stages. The Office of Cyber Security and Information Assurance is working with the Government IT Profession, BIS and CESG to ensure that these needs are met.

# The Strategy

**Foundations**

This strategy builds on
- the development of the IT Profession from 2004 to 2011, particularly cross-government collaboration enabled by the CIO Council, the Technology in Business fast stream and redeployment service, and the adoption of the Skills Framework for the Information Age (SFIA) as the standard means of defining ICT skills in government

- the Government Skills Strategy 2008–2011 and its Review recommendations

- the establishment of Civil Service Learning and the Common Curriculum

- the 2011 ICT Strategy for Government: this strategy delivers on action 13.

***ICT Strategy Action 13***

"Government will publish an ICT Capability Strategy that will include as key outcomes a blueprint for a programme to utilise and develop talent amongst existing civil servants and the guiding principle that Senior Responsible Owners (SROs) are appointed on the basis that they will stay in post until an appropriate break point in the ICT programme or project life to reduce the risk of failure."

***Note*** *work relating to SROs is being taken forward by the Major Projects Authority in the Cabinet Office and is not covered by the ICT Capability Strategy.*

**Key principles**

The strategy

- is common across the civil service & owned collectively by the IT Profession

- integrates the Civil Service Common Curriculum, and national skills frameworks (i.e. SFIA, in particular adopting Version 5 due late 2011), occupational standards and qualifications

- uses established professional bodies and education, training & development sources.

**Objective**

The objective of the strategy is to increase the capability of ICT professionals at all levels, setting standards for the key transition points to G6/7, to SCS, to CIO and graduate entry

**Aims**

The strategy aims to create the structures and processes across government that enable the Profession

- to have the right people in the right place at the right time to deliver successful ICT services and supported projects and programmes

- to generate medium and long term savings by reducing the spend on contractors, consultants, interims and external recruitment and redeploying ICT people whenever possible

- to raise and improve the profile of ICT professionals and the IT Profession across the public sector and with external partners (as a by-product of the above).

**Key Components**

The strategy has the following key components
1. The Blueprint for career development in the Government IT Profession which comprises:

  - entry and selection points

  - development streams (cadres)

  - development stages including curricula for grade groups

  - progression gateways

  - qualifications

  - development pathways for all

2. Cross-government initiatives to support implementation of the Blueprint consisting of

  - common processes for adopting the Blueprint in departments

  - a  common training & development supply framework

  - a cross-government process to match people to emerging resource needs

  - developmental secondments between government departments and into the private sector

  - community networks (for cadres and/or competency groups)

3. A common terminology and skills model for the ICT function retained in-house

4. A communications programme to support the delivery & implementation of the strategy

5. A measurement method to baseline and track the impact of the strategy.

# The Blueprint

The Blueprint (see Figure 1) is a pictorial way of showing how career development paths in the IT Profession, entry routes, progression (i.e. promotion) gateways, and curricula (for ICT skills, common civil service skills, and the gaining of wider experience) all fit together as a whole. It is for civil servants who identify themselves as members of the IT Profession, and everyone in the Profession fits somewhere within it. From their current position, everyone should be able to see possible routes forward in their development, identify the skills and the experience they need to acquire and the standards they need to reach, and have access to the means to achieve their goals.

**The component parts of each Development Stream**

CS Common Curriculum
   induction
   leadership
   management
   core skills
   mandatory skills
   specialised skills
ICT Professional Development Curriculum based on SFIA
   competency groups
   skills
   skill levels
Wider experience
Continuing Professional Development
Community Participation

The Blueprint provides the bridge between the specific development needs and curricula for the IT Profession, and the Civil Service Learning Common Curriculum. There is a significant amount of work involved in defining the content of each development stream (a rectangle in the picture) and making it accessible and usable — the number of possible combinations of grades, skills combinations and skill levels is very high.
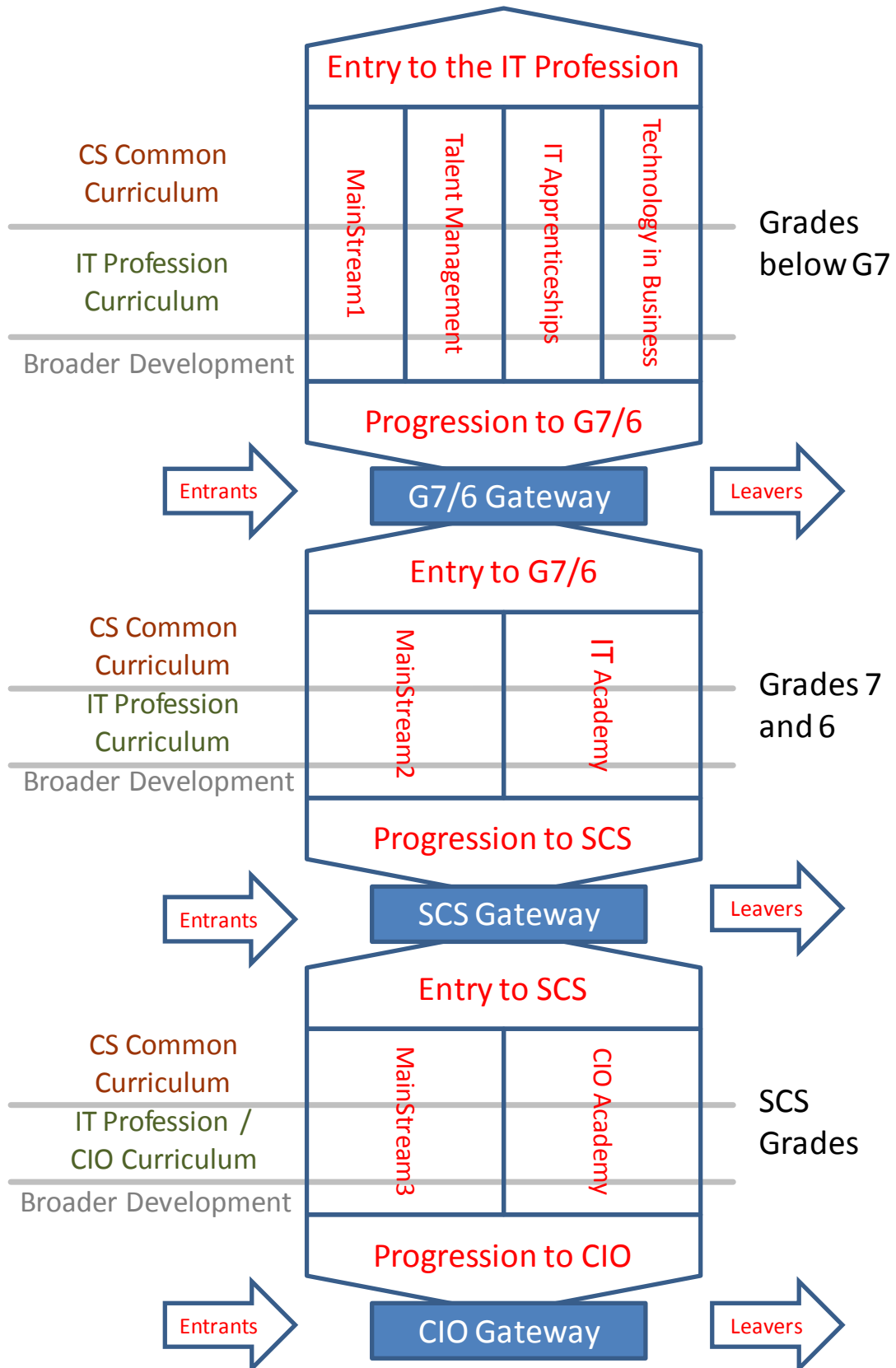
**Key to the Blueprint**

- Each rectangle represents a cadre of people defined by grade level and development stream. Each will have its own curriculum: Common + Professional + Broader Development. Each will have its own expectations of standards to be reached and qualifications.
  MainStreams 1 - 3 embrace all professionals that are not in one of the other specific development streams, so the majority of people will be in a MainStream. This allows technical specialists to progress to senior levels.

- Technology in Business is the existing Fast Stream graduate entry scheme, and Talent Management is the comparable accelerated development stream for non-graduate entrants. IT Apprenticeships currently exist in DWP.

- The IT Academy and CIO Academy are proposals for accelerated development streams at Civil Service Grades 6/7 (or equivalents) and the Senior Civil Service (SCS) respectively (recognising that there are CIO posts below the SCS).

- Entry to the Blueprint and exit from it is to/from the profession, not the Civil Service, allowing for switching professions within the Civil Service as well as entering and leaving the Civil Service itself. In this model, a civil servant from

another profession as well as an external candidate can enter at any level including CIO.

## Entry to the IT Profession

| | MainStream1 | Talent Management | IT Apprenticeships | Technology in Business |
|---|---|---|---|---|
| CS Common Curriculum | | | | |
| IT Profession Curriculum | | | | |
| Broader Development | | | | |

Grades below G7

### Progression to G7/6

Entrants → **G7/6 Gateway** → Leavers

## Entry to G7/6

| | MainStream2 | IT Academy |
|---|---|---|
| CS Common Curriculum | | |
| IT Profession Curriculum | | |
| Broader Development | | |

Grades 7 and 6

### Progression to SCS

Entrants → **SCS Gateway** → Leavers

## Entry to SCS

| | MainStream3 | CIO Academy |
|---|---|---|
| CS Common Curriculum | | |
| IT Profession / CIO Curriculum | | |
| Broader Development | | |

SCS Grades

### Progression to CIO

Entrants → **CIO Gateway** → Leavers

**Benefits**

The ultimate benefit will arise in medium & long term savings realised by increasing the capability of public sector ICT people and improving processes to manage the talent available, reducing reliance on external sources. As with any human resource development strategy, the benefits take some time to materialise (for example, the development path from Technology in Business Fast Steam entry through management roles to a CIO in a post in a smaller organisation could take around 10 years, or for a senior CIO role in a major department in the order of 20 years, though benefits from cross-government working should materialise much sooner). This strategy lays the strongest foundation yet that enables such progress to happen.

**Success Measures**

Success will result in:

1. a decreasing use of contractors, consultants & interims
2. an increase in intra-governmental placements and external secondments
3. an increasing recruitment of CIOs from within the public sector
4. continuing recruitment and retention of graduates through the Technology in Business fast stream
5. a strong talent pipeline  in terms of number of successors for SCS posts including CIO
6. improving levels of staff satisfaction/engagement with outcomes of the strategy
7. increased confidence in the profession externally and in government.

# Delivery and implementation

## Delivery Plan

The strategy will be delivered through a portfolio of workstreams each led by a Senior Responsible Owner drawn from the IT Profession Board.

**Workstream 1:** populate the Blueprint with

- the specification of professional and common civil service competencies, and wider experience, required of various cadres of people progressing through the profession at each grade level and stream, with model curricula

- the criteria for selection to specific development streams

- a match of competencies to qualifications and clarity of the role of qualifications and accreditation in certifying competence or experience – policy on & requirements for qualifications and accreditation

- competency and experience thresholds for entry to the next grade level – policy on & requirements for Progression Gateways

- common processes for adopting the Blueprint in departments

- a means of refreshing its content over time

   Workstream 1 is broken down into a set of five sub-workstreams each of which addresses parts of the Blueprint.

**Workstream 2**: develop supply frameworks for training and development, and oversee their adoption by departments

**Workstream 3**: workforce planning & talent management at senior levels — develop a cross-service mechanism for matching people to needs for resources, including knowing how many and where, and oversee its adoption by departments

**Workstream 4**: establish community networks for appropriate groups of people and any necessary support for them

**Workstream 5**: design and deliver a communications programme to support the delivery & implementation of the strategy

**Workstream 6**: develop a model and common terminology for the components of and skills required for the retained ICT function

The delivery workstream, implementation, and governance structure is illustrated in Figure 2. Details of each workstream will be published alongside this strategy.

Members of the IT Profession Board (ITPB) will take ownership of specific elements of the ICT Capability Strategy implementation work supported by working groups drawn from ITPB members' organisations and others. Progress will be overseen by the ITPB, chaired by the Government CIO (Joe Harley) and the Government CIO Delivery Board (CIO DB) lead on ICT Capability (Andy Nelson, CIO at the Ministry of Justice) acting as Senior Responsible Owner for the implementation as a whole. A small team in Cabinet Office will support the ITPB and its members in the management of implementation.

ITPB members have committed to ensure adoption of the products from the strategy in their own departments.

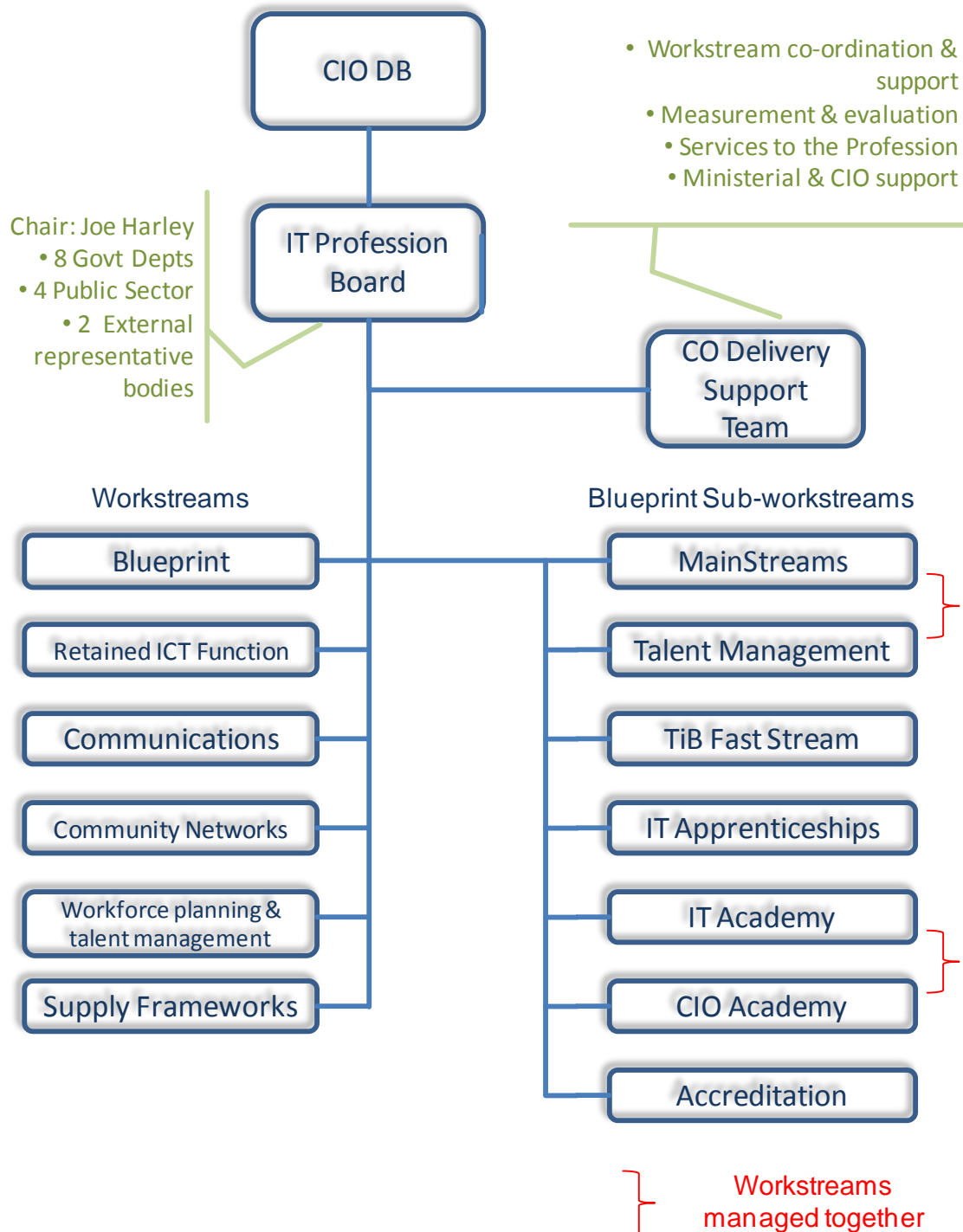## *Governance and Delivery Approach*



Figure 2: Strategy implementation structure & governance

## Timetable

The table below highlights the key steps towards implementing the strategy.

| Key Outcome | Completion Date |
|---|---|
| Model for retained ICT function & its skills needs | Feb 2012 |
| First IT Profession Curriculum components in place | April 2012 |
| Cross-government talent management process in place for the SCS | Sept 2012 |
| Revamped Technology in Business fast stream development programme ready for 2012 intake and existing members | Sept 2012 |
| "Academy" development programmes defined for staff with potential for SCS and CIO roles | Sept 2012 |
| Career development framework ("Blueprint") complete for all ICT professionals | Sept 2013 |

Alongside these, the IT Profession Board has set itself the following specific targets

| Target | Date |
|---|---|
| Decreased use of contractors: central government ICT departments will have no more than 15% of their retained headcount filled by contractors by March 2015 | March 2015 |
| Increased recruitment of CIOs from within the public sector: 10 "graduates" of the CIO Academy by March 2015 | March 2015 |
| Continued recruitment and retention of graduates through the Technology in Business fast stream, averaging 20 per year for the next 3 years | Sept 2014 |
| A strong talent pipeline of successors for senior posts: 50 people in the IT Academy in 3 years | Sept 2014 |
| Increased lateral development moves for staff with high potential: 10 cross-government temporary assignments per annum at each of SCS and below SCS | Sept 2013 |

**Measurement of Impact**

In principle, once the structures and processes developed by this strategy are in place and ready to use over the years ahead, many of the impacts should be measurable in terms of numbers of people or money. In time, that will provide indicators of how effective the components, and hence the strategy, have been. No measurement systems currently exist for the IT Profession that are relevant to the new ways of working that are being created, so part of the work to be done is to design and implement such tools. The baseline against which to measure progress is in fact not the situation today, but the situation prevailing when each of those new ways of working begins to be adopted, so the aim is to have such data defined and collected at that time.

**Strategic Risks**

1. A lack of adoption and compliance by department(s) impacts service wide benefits.
   Mitigation: departments to work collectively to develop solutions and IT Profession Board members to lead adoption in their departments.

2. A lack of agreement on recruitment, progression and qualification policies.
   Mitigation: departments to work collectively to develop solutions and IT Profession Board members to lead adoption in their departments.

3. No means of measuring; inadequate baseline data.
   Mitigation: work to be done by the IT Profession Board to develop suitable measures to enable baselines to be set when strategy's products are begun to be used.

4. Proposed professional learning and development is unaffordable in future.
   Mitigation: approaches to L&D will use existing and low cost services and processes wherever possible, e.g. development & interchange programmes, in a better structured and targeted way.

# Appendix

## The ICT Capability Strategy alignment with other Government ICT strategic themes

| ICT Strategy theme | Government Capability Strategy Alignment with theme |
|---|---|
| Public sector productivity and efficiency | The vision for the strategy is for the Government IT Profession to do its job better, using modern methods and tools, do more with the resources available, and be more self-sufficient in people |
| Empower public sector reform | An aim of the strategy is to reduce the spend on contractors, consultants, interims and external recruitment and redeploy ICT people whenever possible |
| Increased standardisation | The implementation of the strategy will build upon industry standard approaches to skills and professional development, leading to flexibility in resourcing where projects demand, and rationalise sources of supply for training |
| Greater engagement with departments | The strategy takes a cross-government, profession-wide approach to the development of ICT professionals and their management, leading to a highly professional cadre across government |
| Stimulating economic growth | The strategy will lead to a more skilled workforce in a critical area of economic activity |
| Deliver economies of scale | The vision for the strategy is for the Government IT Profession to do more with the resources available, and be more self-sufficient in people; it will combine the buying power of departments for training |
| Greening Government | Four skills within the Skills Framework for the Information Age (SFIA), around which ICT professional career paths and curricula will be developed, relate to Sustainability, helping government ICT support delivery of the Greening Government Commitments especially the 25% reduction target by 2015 |

| ICT Strategy theme | Government Capability Strategy Alignment with theme |
|---|---|
| Responsive public services | SFIA (see above) contains skills for User experience analysis, Ergonomic design and User Experience evaluation that are essential to develop digital public services that are responsive to citizens' needs |
| Transparency | SFIA contains skills for Information management and Data management that underpin the opening up of government data to the public |
| End to oligopoly of large suppliers | SFIA contains skills for Procurement and Supplier management that will help government ICT to increase its capability to manage existing suppliers and take a new approach to the marketplace |
| SMEs | SFIA contains skills for Innovation, Emerging technology monitoring and Procurement that will help government ICT embed SME offerings into strategies |
| Presumption against large projects | SFIA contains skills for Portfolio management, Programme management and Procurement that will better enable government ICT to manage collections of smaller projects to deliver a single aim as opposed to one large one |
| Reuse, sharing and scalability across organisational boundaries | SFIA contains skills for Information management, Data management, Enterprise architecture, Solution architecture, Database/repository design and Systems integration that enable cross-organisational challenges to be addressed |
| Legacy applications have acted as barriers to the rapid introduction of new policies" | SFIA contains skills for Innovation, Business architecture, Methods & tools, Software development process improvement, Emerging technology monitoring and Procurement that will help government ICT respond more swiftly to policy requirements |
| G-Cloud, Apps Store & Open Source | SFIA contains skills for Enterprise architecture, Innovation, Software development process improvement, Emerging technology monitoring, Solution architecture, Systems development management, Porting/software integration and Procurement, that will enable better use of cloud-based or open source solutions and applications within technical architectures |
| Open Standards & End User Device | SFIA contains skills for Information management, Data management, Enterprise architecture, Solution |

| ICT Strategy theme | Government Capability Strategy Alignment with theme |
|---|---|
| | architecture, Database/repository design and Systems integration that can support the adoption of standardisation |
| Over capacity in data centres | SFIA contains skills for IT estate management that will better enable rationalisation of the use of data centres |
| Rationalise diverse property estate | SFIA contains skills for IT estate management that are necessary to manage property efficiently |