

Annex B: ICT Strategy metrics

May 2012

Raw data available at: data.gov.uk/dataset/ictmetrics

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About This Document

The SIP set out a number of metrics for measurement of progress on each of the nineteen delivery workstreams. Measurement in this way is a first for the UK Government and will provide the basis for future benchmarking. Metrics data will be utilised to develop a better understanding of the government ICT landscape; support the drive toward better and more efficient ICT; and provide a transparent way of demonstrating progress. The full metrics set provided by central government departments is available on data.gov.uk.

The metrics data collection exercise has highlighted in particular that as a result of legacy contracts, a number of departments are dependant on suppliers to provide the data required, often only at significant additional cost. Work is being taken forward on a cross-government basis, to change the service management model so that in future government will own its own data. Government will then be able to report as needed.

Given that this is the first ICT metrics data collection exercise, it is unsurprising that there are variances in data as a result of the way in which departments collect and hold data; whether departments have access to data via their contracts with Systems Integrators; and how departments have interpreted definitions. Cabinet Office is working with departments to identify variances and therefore improve the definitions and source data for future data collection. The data presented in these annexes is accurate as of May 22nd 2012.

Government plans to extend the scope of metrics and repeat the exercise of collecting metrics data in October 2012 and thereafter on a six-monthly basis. Where averages are noted, these are arithmetic means.

Table of Abbreviations

Department Names:

AGO	Attorney General's Office
CO	Cabinet Office
CPS	Crown Prosecution Service
BIS	Department for Business, Innovation and Skills
DCLG	Department for Communities and Local Government
DCMS	Department for Culture, Media and Sport
DFE	Department for Education
DECC	Department for Energy & Climate Change
DfiD	Department for International Development
DfT	Department for Transport
DoH	Department of Health
Defra	Department of the Environment, Food & Rural Affairs
DWP	Department of Work & Pensions
FCO	Foreign & Commonwealth Office
HMRC	HM Revenue & Customs
HMT	HM Treasury
HO	Home Office
MOD	Ministry of Defence (for Defence Information Infrastructure only)
MoJ	Ministry of Justice

NIO	Northern Ireland Office
Scotland Office	Scotland Office
TSOL	Treasury Solicitor's Department
Wales Office	Wales Office

Abbreviations:

API	Application Programming Interface
ASK	Asset Services Knowledgebase
CAS	Common Areas of Spend
CIO	Chief Information Officer
CO ₂	Carbon Dioxide
CTO	Chief Technology Officer
DII	Defence Information Infrastructure
EPEAT	Electronic Product Environmental Assessment Tool
ERG	Cabinet Office Efficiency Reform Group
FTE	Full-time Equivalent
GBS	Government Buying Standards
GDS	Government Digital Service
ICT	Information and Communications Technology
PFI	Private Finance Initiative
PSN	Public Services Network
PUE	Power Usage Effectiveness
SRO	Senior Responsible Owner

ICT Strategy Metrics - at a glance

Objective 1: Reducing waste and project failure, and stimulating economic growth

Re-Use

• Total number of assets contributed by organisations	1,517,822
• Total number of instances of reuse	227
• Total number of shared services and solutions	559
• Number of licences defined as 'held' in the asset and services register	18,451,189
• Total number of reusable assets contributed	668
• Number of licences defined as 'used' in the asset and services register	12,099,083

Open Source

• Total number of ICT Software Procurements (tenders and requests)	October 2012
• Total number of ICT Software Procurements with no branded products and no bias	April 2012
• Total number of deployments of Open Source solutions	April 2012

Procurement

• Total spend under management on ICT common goods and services [♣]	£ 704 million
• Savings on ICT common goods and services [♣]	£ 166 million
• Number of ICT contracts with a lifetime value greater than £100m	17
• Time to deliver ICT procurements	March 2012
• Number of active ICT procurements	64

ICT Capability

• Number of staff in the Technology in Business Fast Stream*	56
• % of retained headcount filled by ICT contractors [◇]	11 %
• Number of CIOs recruited from within the public sector	11
• Number of people in the IT Academy	January 2013
• Number of cross-government temporary assignments per annum at each of the SCS and below SCS	September 2013

Agile project delivery

• Number of departments who have used the online Agile facility	April 2012
• Number of projects using "agile" techniques, by department	35
• Total number of instances where the virtual centre of excellence has been utilised	April 2012

Grey text indicates a metric not yet due for publication.

March and April 2012 dates are used to indicate the date when data will start to be collected.

♣ Data to be confirmed, following sign-off of end of year report.

Objective 2: Creating a common ICT infrastructure

Public Services Network (PSN)

• Total number of PSN compliant telecoms contracts in relation to total number of telecoms contracts	40.60%
• Total number of public sector organisations using PSN	34

G-Cloud

• Cost per FTE per commodity service	August 2012
• % of central government departments' new ICT spend on public cloud computing services	August 2012
• Number of accredited products on the Government Apps Store	0
• Number of products departments have adopted from Government Apps Store	March 2012

End User Device Strategy

• Average cost of device per FTE [■]	£ 1,206
• Average number of devices per FTE [⊙]	1.28
• Number of customers (legal entities) adopting services in line with the EUD strategy	October 2012
• Number of end users serviced through principles in the EUD strategy	October 2012
• Average time in seconds taken to complete successful boot-up of devices [◆]	182 seconds

Data Centres [○]

• Number of data centres and associated hosting services	84
• Average cost per server	£ 1,622
• Percentage of servers virtualised	17 %
• Average utilisation of servers	24.75%

Open Standards for Data

• Number of approved open standards for data published	June 2012
• For each approved standard, the % of departments that have adopted/have an implementation approach for the adoption of the standard	June 2012

* As well as the 56 central government department staff in the Technology in Business Fast Stream the ICT Capability Delivery Area reports an additional individual from Export Credits Guarantee Department, a non-nisterial department not yet reported in other metrics and measures

◇ Data provided by 17 out of 23 departments.

■ Average and range data based on the 18 departments that provided costs of device per FTE.

⊙ Average and range data based on the 19 departments that provided number of devices per FTE.

◆ Average and range data based on the 18 departments that provided boot-up times.

○ See pages 12 and 17 for definition.

ICT Strategy Metrics - at a glance

Open Technical Standards

- Number of open technical standards, per reference architecture area, approved and published March 2012
- For each approved standard, the % of departments that have adopted/have an implementation approach for the adoption of the standard March 2012

Information Strategy

- Number of departments with a departmental information strategy 16
- % of departments aligned to the approved set of information strategy principles 9 %

Reference Architecture

- % of procurements that are aligned with agreed standards in the Reference March 2012
- Number of open technical standards, per reference architecture area, approved and March 2012

Green ICT

- Average adoption of appropriate green standards in procurement and current delivery of data centres ** 54.55 %
- Cost of energy caused by government use of data centres *** £ 17,512,698
- Volume of Carbon Dioxide caused by government use of data centres **** 101,453 t CO2
- Average power usage effectiveness (PUE) of each Data Centre used by government ***** 1.87

Risk Management Regime

- % of software for which software security patches are available on a regular basis October 2012
- % of software that is out of mainline security support, but still in use. October 2012
- % of systems that apply available critical security patches to all of their supported software; to more than 90% of machines (clients, servers, mobile devices) within 7, 30 & 90 days October 2012
- Reductions in the cost and programme development time that are enabled by the adoption of this regime & the associated changes to the process of system October 2012

Grey text indicates a metric not yet due for publication

March and April 2012 dates are used to indicate the date when data will start to be collected.

*** Data for this metric provided by 10 departments reporting on whether they have adopted appropriate green standards e.g. GBS, EPEAT, EUCOC, Ecma*

**** Data for this metric provided by 8 departments (see page 11 for a definition of cost of energy consumed)*

***** Data for this metric provided by 8 departments (see page 10 for a definition of volume of CO2 generated)*

****** Data for this metric provided by 9 departments (see page 15 for a definition of PUE)*

Objective 3: Using ICT to enable and deliver change

Online Channels for Government Consultation

- Number of government consultations
- Number of government consultations utilising a digital channel

GDS are reviewing the suitability of individual metrics.

Social Media

- Take up by departments of the guidance on accessing the internet and social media
- Number of verified official government social media accounts

GDS are reviewing the suitability of individual metrics.

Application Programming Interfaces (APIs)

- Number of published APIs 32

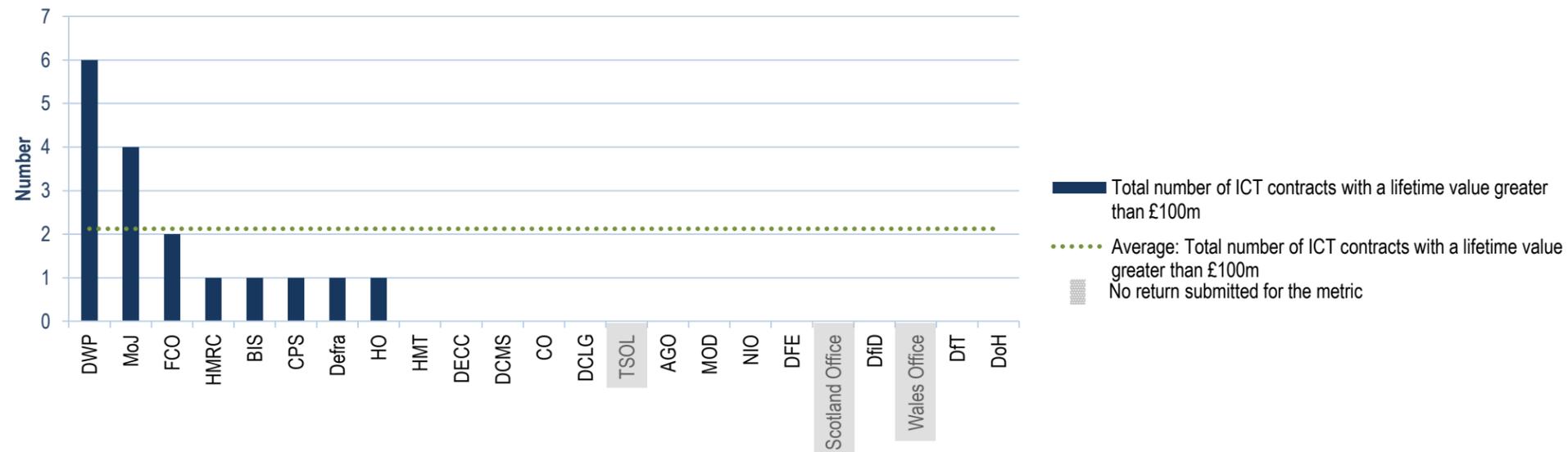
Digital By Default

- % take up of digital channel
- % of transactions successfully completed
- Reported user satisfaction
- Cost per successful transaction per channel
- % take up of digital channel
- % of transactions successfully completed
- Reported user satisfaction
- Cost per successful transaction per channel

GDS are reviewing the suitability of individual metrics.

Procurement

Number of ICT contracts put in place during current administration with a lifetime value greater than £ 100 million, for all departments



Zero returns and nil returns excluded	
Maximum Number	6.0
Average Number	2.1
Minimum Number	1.0
Range	5.0

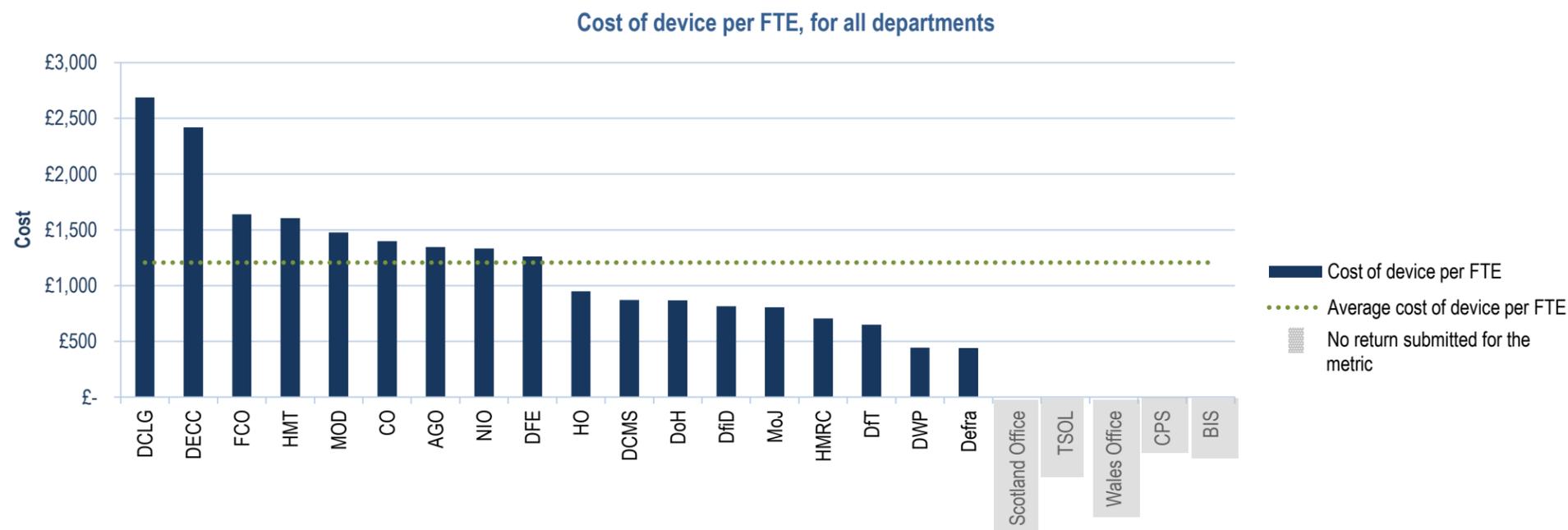
Notes:

- Pan-government, there are 17 ICT contracts with a lifetime value greater than £100 million. This equates to 27 % of all active ICT procurements.
- Pan-government there are 64 active ICT procurements.
- One department reports no active procurements, and one reported that data was not available due to the terms of a legacy contract with a supplier, or data is not cost effective for a supplier to provide.

Definitions:

- This is a measure of live ICT contracts put in place during this administration where the total value over the duration of the contract is greater than £100 million.

End User Device



Zero returns and nil returns excluded ^a

Maximum Cost of Device	£2,688
Average Cost of Device	£1,206
Minimum cost of Device	£441
Range of Device Costs	£2,247

Notes:

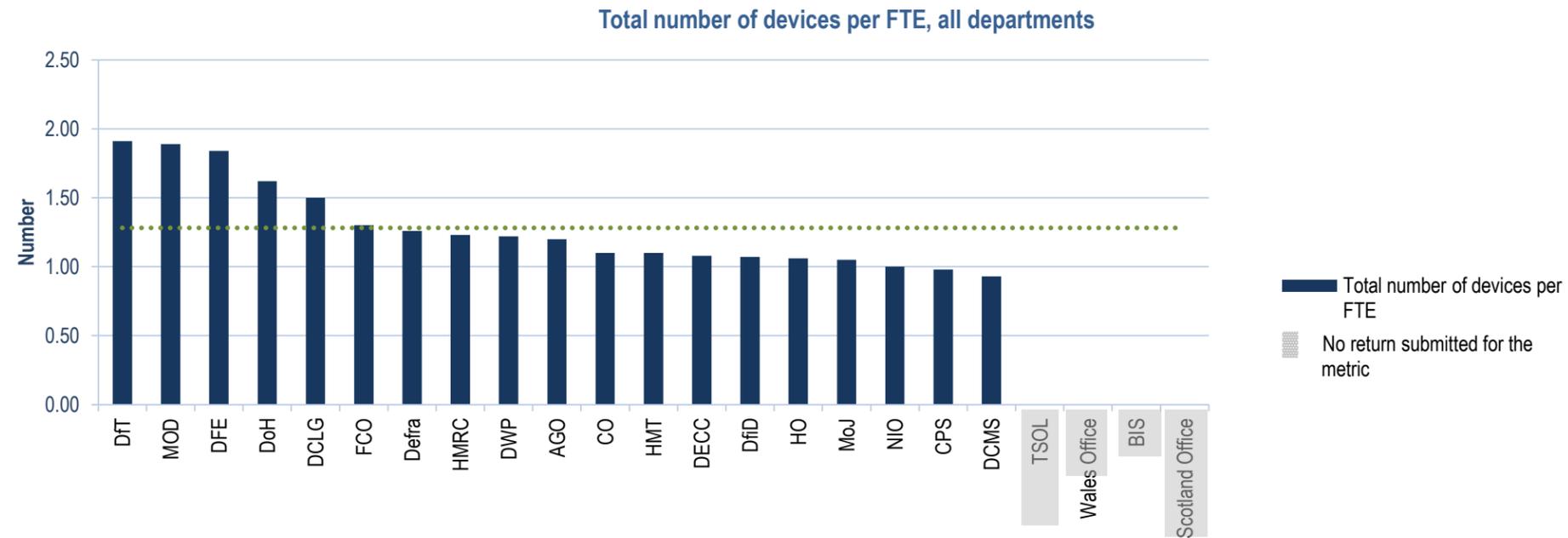
- One department reported that it does not hold this data, and one reported that data was not available due to the terms of a legacy contract with a supplier, or data is not cost effective for a supplier to provide.
- This data is annualised from the fourth quarter Quarterly Data Summary return from departments which was matched to the full desktop definition provided by ICT Common Areas of Spend.

Definitions:

- The average cost per Full-time Equivalent (FTE) of end user devices / desktops within the organisation.
- The detail for what is included within device / desktop definition can be found within the 'Common Area of Spend - ICT' document found here, <http://www.cabinetoffice.gov.uk/resource-library/common-areas-spend-data-definitions>.
- Full-time employees are counted as 1 full-time equivalent. Part-time employees' hours have been converted into those worked by full-time employees.

^a Average and range data based on the 18 departments that provided costs of device per FTE.

End User Device



Zero returns and nil returns excluded [⚠]

Maximum Number of Devices	1.91
Average Number of Devices	1.28
Minimum Number of Devices	0.93
Range of Device Numbers	0.98

Notes:

- Pan-government there are 602,744 FTEs.
- One department reported that it does not hold this data, and one reported that data was not available due to the terms of a legacy contract with a supplier, or data is not cost effective for a supplier to provide.

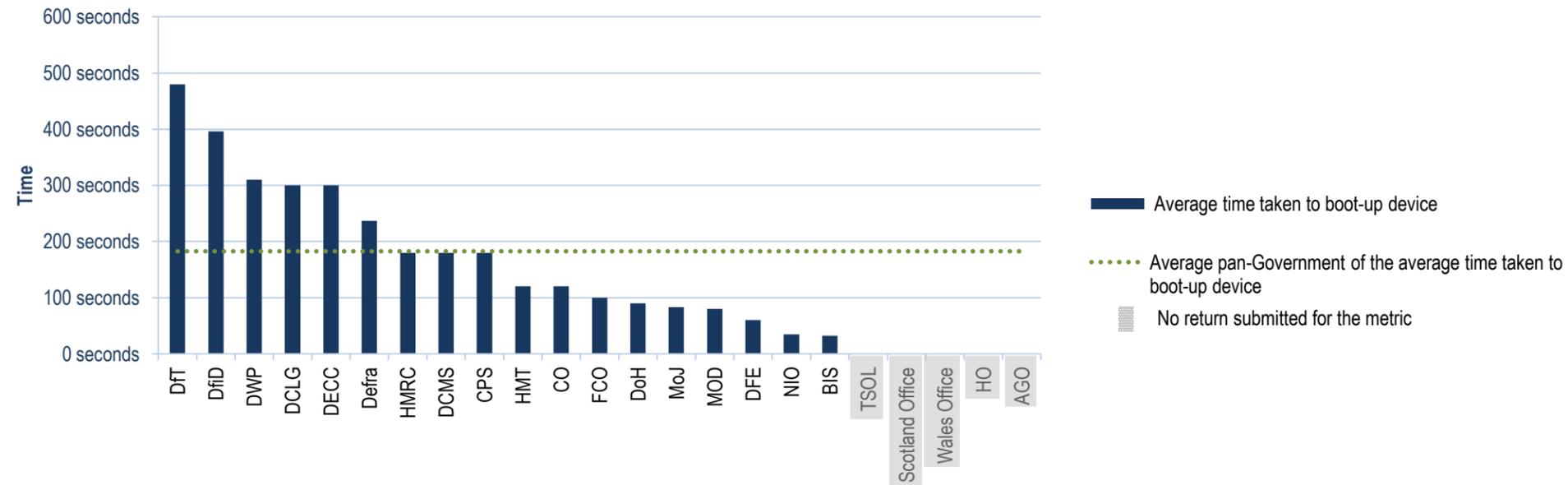
Definitions:

- The average cost per FTE of end user devices/desktops within the organisation.
- The device/desktop includes: log-on services but not single sign-on into applications. Application package environment. 2nd, 3rd line support but not the help desk and associated support infrastructure including desktop directory.
- Full-time employees are counted as 1 full-time equivalent. Part-time employees' hours have been converted into those worked by full-time employees.

[⚠] Average and range data based on the 19 departments that submitted data for this metric.

End User Device

Average time taken to boot-up device, all departments *



Zero returns and nil returns excluded †

Maximum Boot-up Time	480 seconds
Average Boot-up Time	182 seconds
Minimum Boot-up Time	32 seconds
Range of Boot-up Times	448 seconds

Notes:

- Departments have reported a wide range of boot-up times.
- The median boot-up time is 150 seconds.*
- One department reported that it does not hold this data.

Definitions:

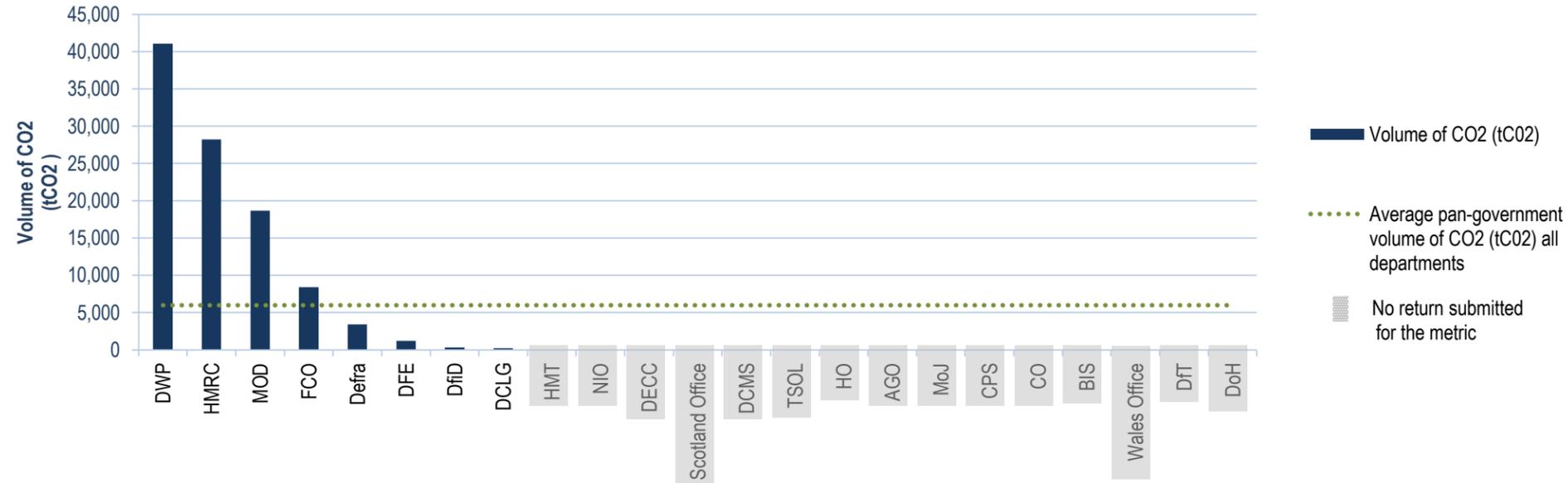
- Boot-up time is measured in seconds and is the mean time for 95% of the organisation.
- Boot-up time is measured from when a user switches on their device until they can access an application.

* DfT boot-up time includes opening MS Outlook.

† Average and range data based on the 18 departments that submitted data for this metric.

Green ICT

Total volume of CO₂, caused by government use of data centres, all departments



	All Departments	Zero returns and nil returns excluded
Maximum Volume	41,074 t CO ₂	41,074 t CO ₂
Average Volume	5,968 t CO ₂	12,682 t CO ₂
Minimum Volume		191 t CO ₂
Range of Volumes		40,883 t CO ₂

Notes:

- 8 out of 23 departments (35 %) have provided data for this metric.
- One department reported that data was not available due to the terms of a legacy contract with a supplier, or data is not cost effective for a supplier to provide.
- One department could not respond as a key supplier would not provide the additional information needed.
- One department could not respond as it was unable to disassociate its data from a shared service.

Definitions:

- Refer to the guidance and best practice contained in the HMG Green ICT Maturity Model Assessment, Roadmap, and Workbook.
<http://www.cabinetoffice.gov.uk/resource-library/uk-government-ict-strategy-resources>
- Volume of CO₂ generated per annum from operating the organisation's in house and out-sourced data centres, where a data centre is defined as a room or rooms with servers and other ICT kit that requires dedicated cooling and power supply.

Green ICT

Cost of CO₂ caused by government use of data centres, all departments



	All Departments	Zero returns and nil returns excluded
Maximum Cost	£6,774,458.00	£6,774,458.00
Average Cost	£1,030,158.71	£2,189,087.25
Minimum Cost		£44,380.00
Range of Costs		£6,730,078.00

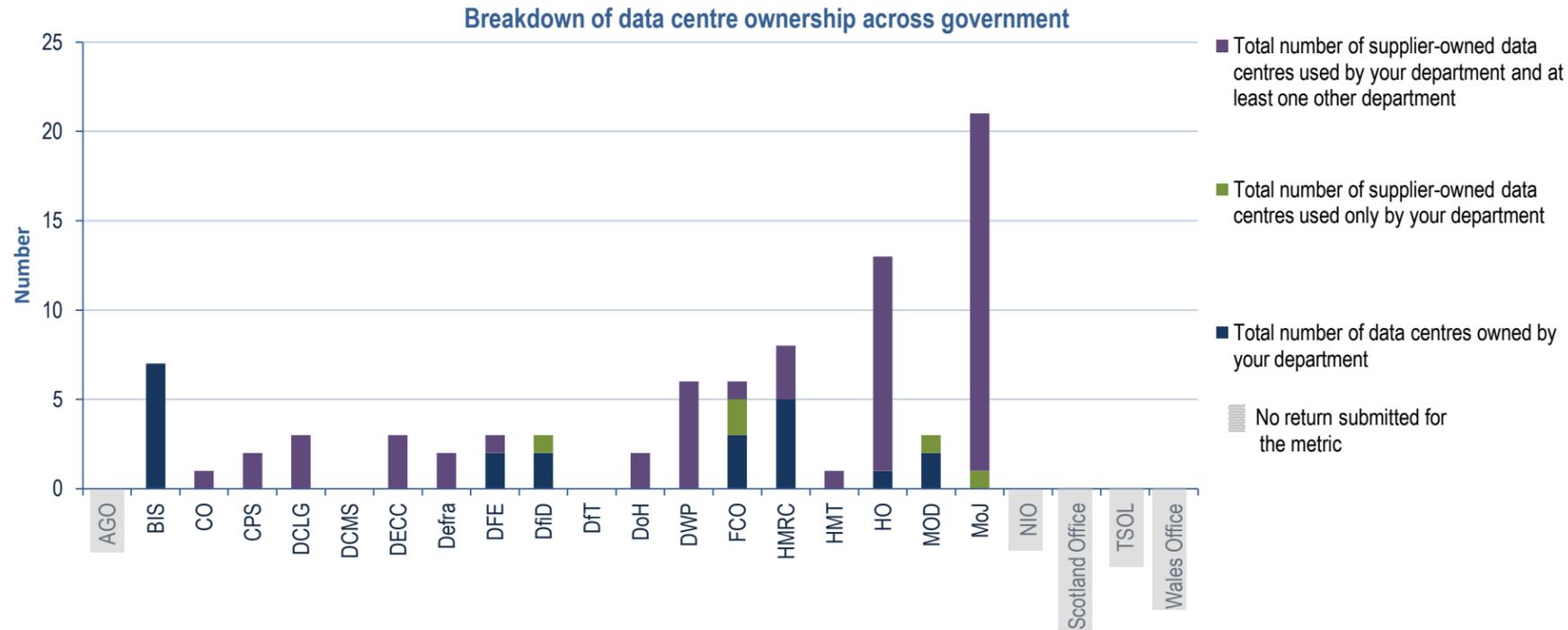
Notes:

- 8 out of 23 departments (35 %) have provided data for this metric.
- One reported that data was not available due to the terms of a legacy contract with a supplier, or data is not cost effective for a supplier to provide.
- One department could not respond as a key supplier would not provide the additional information needed.

Definitions:

- Cost is the cost of CO₂ caused by government use of data centres.
- Refer to the guidance and best practice contained in the HMG Green ICT Maturity Model Assessment, Roadmap, and Workbook.
<http://www.cabinetoffice.gov.uk/resource-library/uk-government-ict-strategy-resources>
- The annual cost of energy consumed in operating the organisation's data centres both those on-site and those out-sourced, where a data centre is defined as a room or rooms with servers and other IT kit that requires dedicated cooling and power supply.

Data Centres



Data centres owned by a supplier and used only by reporting department:

	All Departments	Zero Returns and Nil Returns Excluded
Maximum Number	2.00	2.00
Average Number	0.25	1.25
Minimum Number		1.00
Range		1.00

Data centres owned by reporting departments and at least one other department:

	All Departments	Zero Returns and Nil Returns Excluded
Maximum Number	20.00	20.00
Average Number	2.71	4.38
Minimum Number		1.00
Range		19.00

Data centres owned by reporting department:

	All Departments	Zero returns and nil returns excluded
Maximum Number	7.00	7.00
Average Number	1.10	3.14
Minimum Number		1.00
Range		6.00

Notes:

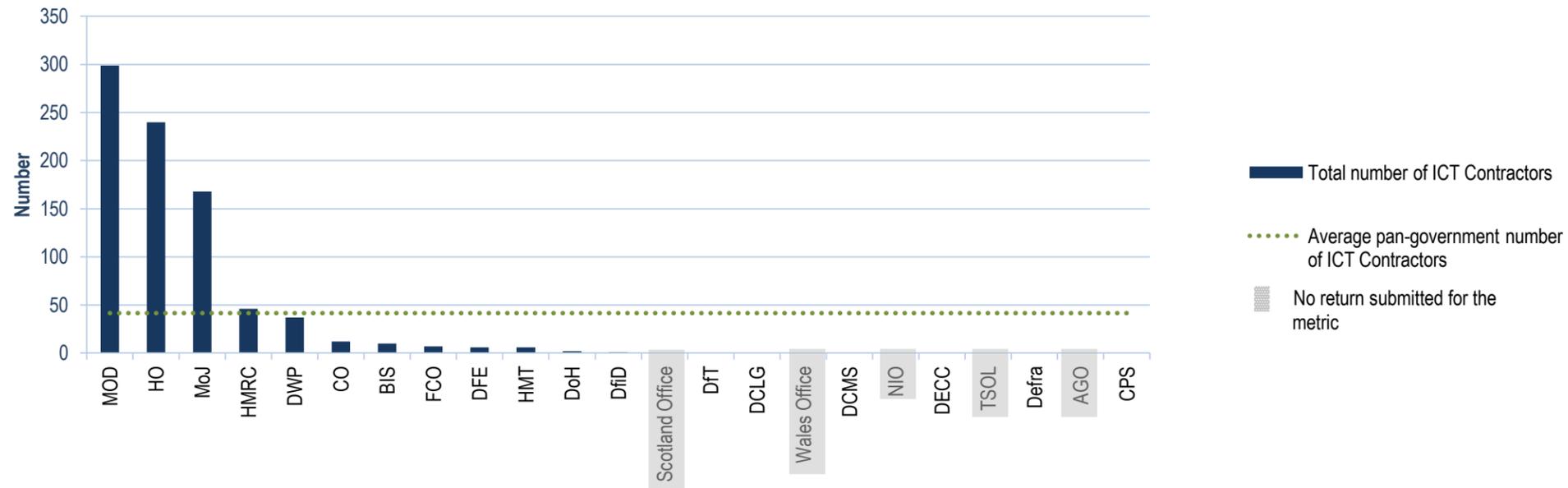
- Pan-government there are 84 data centres and associated hosting services.
- The average pan-government cost of a data centres is £ 1,622.
- Pan-government percentage server virtualisation is 17 %.
- The average pan-government server utilisation is 24.75 %.

Definitions:

- Data centre – A large physically-separate dedicated building, (or segregated area within a shared building), housing more than 50 standard racks of business critical IT servers, intended for use under normal operating conditions (i.e. not under disaster conditions). See page 17 for additional guidance.

ICT Capability

Total number of ICT contractors, all departments ^o



	All Departments	Zero returns and nil returns excluded ^o
Maximum Number	299	299
Average Number	42	70
Minimum Number		1
Range		298

Notes:

- 11 % of the pan-government ICT professional headcount are ICT contractors. Data provided by 17 out of 23 departments..
- Pan-government there are 56 staff in the Technology in Business Fast Stream. With 9 out of 23 departments reporting staff in the Technology in Business Fast Stream. *

Definitions:

- A Contractor is someone filling a public sector employee post or a post that could be filled by a public sector employee but headcount is not available. ICT contractor includes all those contractors assigned to ICT roles including Project Managers, and also those who are part of a contract e.g. with an ICT supplier. This includes contractors in ICT enabled projects and services which are not the responsibility of the organisation's Chief Information Officer.

^o MOD ICT Contractors data is an estimated FTE calculation derived from total ICT contracts spend for ICT technical/external support for period April 2011 to 31 December 2011.

* As well as the 56 central government department staff in the Technology in Business Fast Stream the ICT Capability Delivery Area reports an additional one from Export Credits Guarantee Department, a non-ministerial department not yet reported in other metrics and measures.

Performance on Additional Metrics

Information Strategy

- 16 departments have a departmental information strategy in their business plan for 2011 / 2012, and 12 also have additional supporting documents.
- CPS has provided Cabinet Office with this URL link to their information strategy, <http://www.cps.gov.uk/publications/reports/index.html> .

Definitions:

- The purpose of this metric is to provide a first measure regarding the number of departments who do have some form of Information Strategy to serve as a basis for this.
- It also acts as a baseline to measure progress towards the further metric "Percentage of departments aligned to the approved set of information strategy principles", measurement of which will commence in March 2012.

PSN

- 40.6 % of telecoms contracts, by volume are PSN compliant.
- 2.8 % of telecoms contracts, by spend value, are PSN compliant.

Definitions:

- PSN compliance is defined as the process to ensure adherence to the rules, conditions and obligations identified in the PSN Codes. More detail on PSN can be found here, <http://www.cabinetoffice.gov.uk/content/public-services-network> .

ASK ICT

- The total number of re-usable assets contributed to the ASK ICT database is 668.
- The total number of assets contributed by organisations to the ASK ICT database is 1,517,822.
- The total number of instances of re-use is 227.
- The total number of shared services and solutions is 559.
- The total number of ICT licences defined as 'held' in the asset and services register is 18,451,189.
- The total number of ICT licences defined as 'used' in the asset and services register is 12,099,083.

Definitions:

- A re-usable asset is an ICT asset that is currently being used by a government body, and one that has been indicated as 're-usable' by the government body. 'Total' is the sum total of the assets records that indicate a 're-usable asset'. 'Contributed' means that it is registered within ASK ICT.
- 'Total number of assets contributed' is the sum total of asset records within ASK ICT.
- 'Shared services' was defined within the ASK ICT as: "Those business processes and functions, enabled by ICT, which are common across organisations, and that are sourced once (either internally or externally) and used in several government organisations.

- 'Solutions' was defined within ASK ICT as: "A service that can be rebuilt through reusing the products, architecture design, project plans, test plans, etc of an existing service.
"A solution is not a single Commercial off the Shelf product, but rather the integration of a number of products to deliver a complete service.
"A solution will be expected to include all of the templates and inputs of a pattern however, they are likely to be specific to the exemplar solution. For example the high level architecture may not be generalised for multiple technology types".
- An ICT Licence is a legal instrument used to determine the use of a copy of a software product.
- An ICT Product refers to an item of ICT technology that a manufacturer sells and a customer uses in order to fulfil a function that is required. If the product is physical then a physical copy will be used by the customer. If it is virtual (e.g. a piece of software) then the copy will be virtual (although may come on physical media, e.g. a DVD). There is also a situation where one copy of the software is held and multiple users are able to use it, through the purchase of 'licences'.
- 'Held' refers to licences that the government body is entitled to use and for which provision has been made to pay for.
- 'Used' refers to a subset of those licences that a government body is entitled to use, that are actually being used and paid for.

GDS

- GDS are reviewing the suitability of initial metrics
- Work has begun to build a standard web metrics capability for government which will reflect the commitments made in the Budget.
- Once this has been signed off then we will have a set of aligned metrics which we will report on.
- GDS are currently developing the API approach document for circulation early May. 32 APIs have been confirmed.

Green ICT

- 5 out of 18 departments (28 %) use Government Buying Standards to place contracts.
- The average pan-government Power Usage Effectiveness (PUE) for data centres used by government departments is 1.87.
- 10 out of 23 (43 %) government departments have provided PUE data.

Definitions:

- At initial procurement or next refresh point for purchase/lease Government Buying Standards (GBS), <http://sd.defra.gov.uk/advice/public/buying/>, will be applied where available. Where not available international standards for greener electronics shall be applied, with use of accreditation schemes such as (e.g. EPEAT, or Ecma) to confirm compliance.
- Power Usage Effectiveness (PUE) is a measure of how efficiently a computer data centre uses its power; specifically, how much of the power is actually used by the computing equipment (in contrast to cooling and other overhead). PUE is the ratio of total amount of power used by a computer data centre facility i.e. power provided to the IT equipment plus power provided for cooling, to the power delivered to computing equipment.
$$PUE = \frac{\text{Total Facility Power}}{\text{IT Equipment Power}}$$

PUE was developed by a consortium called The Green Grid. An ideal PUE is 1.0. Anything that isn't considered a computing device in a data centre (i.e. lighting, cooling, etc.) falls into the category of facility power usage.

- Refer to the guidance and best practice contained in HMG Green ICT Maturity Model Assessment, Roadmap, and Workbook.
<http://www.cabinetoffice.gov.uk/resource-library/uk-government-ict-strategy-resources>

Agile

- 13 out of 23 (57 %) government departments use agile techniques.
- Pan-government there are 23 member of Virtual Centres of Excellence for Agile across 10 departments.

Definitions:

- Agile: A variant of iterative life cycle development where deliverables are submitted in stages. One difference between agile and iterative development is that the delivery time in agile is in weeks rather than months.

Data Sources and Methodology

- All data in this document has been collected by Cabinet Office as part of the ICT Strategy Metrics process with three exceptions which are listed below.
- Metrics and definitions established by senior responsible owners for individual delivery areas and agreed by the CIO Delivery Board.
- On request information was supplied directly to the Cabinet Office by departments. Cabinet Office collated this information and passed it to the relevant delivery area leaders of Senior Responsible Owner (SRO). The SRO will have challenged departments on data quality, and changed where appropriate.

EUD

- This data is annualised from the fourth quarter Quarterly Data Summary return from departments which was matched to the full desktop definition provided by ICT Common Areas of Spend.

PSN

- April 2012 internal update from PSN.

ASK

- Data taken from ASK ICT Metrics internal update April 2012.

Additional Guidance for Data Centre Metric

Definition of Data Centre:

- Data centre – A large physically-separate dedicated building, (or segregated area within a shared building), housing more than 50 standard racks of business critical IT servers, intended for use under normal operating conditions (i.e not under disaster conditions).

Guidance

- This metric is primarily concerned with the major data centre facilities employed by departments. Rooms containing IT and communications equipment associated with an office space (e.g. network cabinets and telecommunications rooms) should not be included.

Where suppliers provide the IT infrastructure to host your live business applications (i.e. a hosting service) then the supplier's facilities should be included regardless of the procurement route.

To ensure that supplier data centres are not counted multiple times across government, please enlist your suppliers help in counting those data centres dedicated to providing service solely for your department separately to those data centres dedicated to providing service to both your department and another government department / public sector body.