

Government End User Device Strategy

A sub strategy of the Government ICT Strategy
March 2011

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Introduction

This strategy will fundamentally redefine the way that government departments work. Increasing the productivity, flexibility and mobility of the public sector workforce will free up staff, buildings and revenue spend so that Government can deliver better, more agile and more responsive public services, at lower cost.

Government will have access to the right tools. Consumer end user devices¹, delivered to a clear standard that meets government needs, will maximise the productivity of the public sector workforce. This will increase the efficiency of departments and improve front-line services.

Government's aim is that as much as possible, the public sector workforce will be able to work from any location on any suitable government or non-government end user device.

This strategy will deliver significant savings across government and is a key enabler for releasing further savings through other Information and Communication Technology (ICT) strands, for example Application Store for Government and G-Cloud.

Departments will share best practice; common standards will increase the reuse and interoperability of solutions and allow services to be shared. This makes government more agile and enables the efficient and accelerated implementation of policy.

The government end user device market will be reinvigorated through greater market competition driven by clear standards. SMEs and large suppliers will compete on a level playing field, promoting innovation and driving down the cost for government; providing the solutions that offer best value for money.

¹ Definition of end user devices: PCs, laptops, tablets, smart phones and other hardware that end users can use to interact with data and applications.

Background and context

The Government ICT Strategy, published March 2011, outlined a series of initiatives that will lead not only to significant cost savings to the taxpayer but also significant improvements in the implementation, operation and flexibility of government ICT.

A major area of focus for the ICT Strategy is that of end user devices, with over 600,000 being employed across central government.

Today there is no common definition of desktop (as an example of an end user device) across government departments; with some referring to just physical devices, some including services such as email and collaboration, and others adopting an even wider view including, for example, IT Service Desks.

The strategy seeks to specify:

- a minimum set of standards (to include characteristics and definitions) for end user devices to which government should adhere, taking into account service management and security requirements.
- a timeline over which government departments should implement these standards through existing or new contracts.

DWP has a strategy in place to further reduce cost by circa 30% (~£30M per annum) as part of its next desktop service due for implementation in 2012, employing many of the principles defined in this strategy.

The implementation of this strategy will deliver significant cost savings and improve the effectiveness of public sector users by:

- delivering an end user device standard that separates the business application being used from the physical hardware device, removing vendor “lock-in” and allowing reuse across all devices and all departments. The term end user device is used throughout the strategy to recognise this separation and the breadth of scope (i.e. PC, Laptops, Tablets, Thin client, Smart Phones etc).
- exploiting and shaping the current technology-led market for end user devices to ensure that industry supplies the service requirements of the Government. This is a market which is increasingly commoditised, with physical devices often provided as part of services tailored to common usage cases.
- creating common definitions, ways of working and collaboration to maximise reuse and exploit Government buying power.

There are currently a variety of end user device solutions across government, each developed for specific service requirements; diversity being driven by service levels /

security requirements, specific outsourcing contracts and by differing abilities to exploit economies of scale and bulk purchasing power.

This strategy and associated activities will define a common approach and identify a set of standards for public sector end user devices.

A common approach will:

1. deliver best-in-sector pricing to all departments, rather than just the very largest
2. encourage greater market competition which should further reduce cost
3. lower the cost of service transition between suppliers
4. bring common security standards where applicable
5. make the public sector more productive, flexible and mobile
6. reduce the bespokeing of solutions
7. deliver volume related savings
8. support optimising the number of devices per user.

Finally, the strategy will position government ICT to be able to take advantage of new business-driven technology opportunities in the future, both more rapidly and in a more cost-effective way.

Scope

Given the current differing definitions, the scope of the End User Device Strategy is critical.

This has been defined collaboratively by the End User Device Strategy subgroup, comprising representatives from Cabinet Office, Department of Health, Department for Work and Pensions, Government Procurement Service, HM Revenue & Customs, Home Office, Ministry of Defence and Ministry of Justice.

It has also been aligned to the wider ICT strategy, specifically the Public Services Network (PSN) and G-Cloud, where close dependencies exist.

The principle of the scope is:-

Different **users** in different job roles have differing needs of their devices, but there are a finite number of such business use cases e.g. mobile, contact centre etc. The definition of such families of work styles or business use cases is within the scope of the strategy.

Each **device** is composed of multiple layers as shown in Figure 1. The strategy will identify the standards for these layers and how they interoperate.

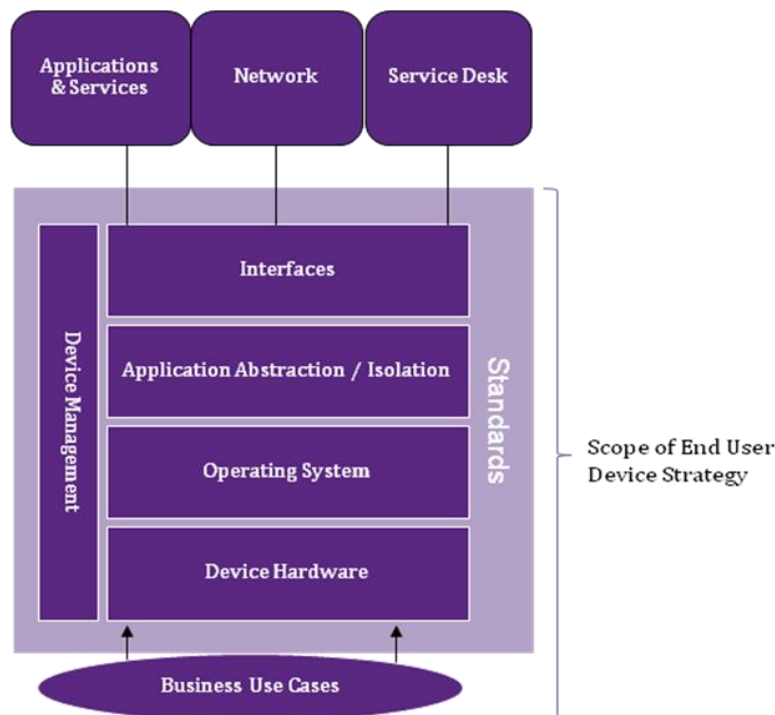


Figure 1: End User Device Strategy Scope

The following items are in scope for the End User Device Strategy:

Device Hardware: PC, laptops, tablets, thin client, smart phones and any other hardware that an end user can use to interact with their data and applications. This strategy will not consider peripheral devices but will consider their interfaces.

Operating System: Operating System running either directly on the hardware or in a virtualised environment.

Application Abstraction/Isolation: Applications are abstracted from the operating system and isolated from other applications where appropriate, so that changes made by one application do not impact others, allowing applications to be upgraded independently.

Interfaces: Interfaces to ICT and service management infrastructure.

Device Management: Software updates, asset management and application delivery.

Standards: Standards for each layer and between layers.

The strategy applies to central government, executive agencies and arms length bodies, and the concepts should be appropriate for the wider public sector.

Strategy

The strategy represents a common approach to address the end user device landscape in central government, executive agencies and arms length bodies.

It has been aligned with the other strands and themes of the ICT Strategy to ensure there is a consistent direction. For example, the End User Device Strategy has close alignment with G-Cloud and PSN, to deliver services such as email and remote access.

Further details of alignment with the ICT Strategy can be found in the Appendix.

The strategy addresses the end user device landscape and has four key principles:

- Introduce pan-government standards for devices.
- Separate layers of the device infrastructure.
- Exploit new device technology for business benefit.
- Managed refresh cycles that best meet business need.

The strategy will define a pan-government set of families of work styles / use cases to categorise users based on their business activity. The creation of usage work families will enable the standardisation of devices across government and drive suppliers to provide common solutions.

The strategy will specify a set of standards to enable users to access their applications. The introduction of standards across government will allow reuse of applications across departments. This minimises the amount of testing every time a new application is deployed or an existing application is updated. The strategy will use open standards, where available and appropriate. Where no open standard is available the strategy will specify any required standard across government

Example workstyle family:
Mobile Knowledge Worker.

An HMRC VAT inspector and a probation officer are both mobile knowledge workers. Although their work is very different, they belong to the same usage family in terms of devices.

The strategy will specify standards to enable separation of the application layer from the operating system layer and the hardware layer. Standards will be specified to abstract applications from the operating system and isolate each application from other applications, whilst maintaining necessary interactions. This creates a structure that enables more flexibility around device usage, whilst keeping application deployment and integration costs low. Some applications will not work in this

environment and therefore need to be addressed as risks to the adoption of the strategy.

The adoption of this strategy will enable users to run applications on the most appropriate device, giving flexibility of choice. This enables government to exploit latest device technologies to optimise the productivity of its workforce.

The strategy will provide a structure for lifecycle management so that all device components are kept to a standard, to enable devices to support applications. Standardisation makes this possible in a cost effective manner. Continuous upgrades, together with a rolling refresh programme, avoid large big-bang rollouts which can cause widespread risk to the business.

The End User Device Strategy subgroup, the Cabinet Office Commercial Portfolio team and Government Procurement Service and other ICT strategy strands will produce/update commercial models. This will be supported by benchmarking and comparison, and informed by existing frameworks, with appropriate levels of transparency.

Current contracts that have technology refresh and innovation as obligations will be exploited to implement the strategy.

The standards based approach will enable government to become an effective ICT customer, allowing it to leverage its considerable buying power to drive down cost. It will achieve this by exploiting and shaping the current technology-led market for end user devices, to ensure that industry supplies the service requirements of the Government.

Departments do not need to wait until existing contract end dates to adopt the End User Device Strategy. Where appropriate, Government will engage with suppliers to renegotiate contracts.

The End User Device Strategy will use common governance models, such as CIO Delivery Board, CTO Delivery Group. Further details can be found in the section headed Devices Design Authority.

Outcomes

The following outcomes will be realised through the implementation of the strategy. In order to measure the success of the strategy, metrics, including refinement of the outcomes, will be defined in the delivery phase.

A more productive public sector workforce

The strategy will enable devices to be kept up to date on a continuous basis. This will enable the latest devices and versions of applications to be quickly deployed in government departments. Government can then fully exploit the most appropriate, including the latest, devices and applications that maximise the public sector workforce's productivity. Alternatively, the strategy enables assets to be utilised beyond their normal working life.

Reduced cost of end user devices

The device cost per Full Time Equivalent (FTE) will be benchmarked and published. Metrics and transparency will drive a comparable and acceptable cost across departments.

A fair and competitive government device market driven by standards will exist, providing opportunity for Small and Medium Enterprises (SMEs) and large suppliers to compete on a level playing field. The market will drive value for money rather than the lowest price point at the expense of functionality and flexibility.

The overall cost to operate a department will be reduced through the implementation of the strategy; reduction of the cost of devices will not be seen as a success if it means creating expenditure elsewhere that exceeds that reduction.

The strategy will enforce sharing of best practice between departments under the governance of a design authority. Reduction in overall spend will follow from the adoption of best practice.

Increased organisational flexibility

With common standards in place across government, departments will be able to reuse hardware and software. The introduction of standards will enable interoperability, so that devices can consume cross-government services and departments can provide shared services to other departments.

Sharing services makes government more flexible and makes it easier to restructure and relocate departments and people. This will support further rationalisation of the government estate and enable new workstyles: mobility within the office, hot desking, flexible work patterns away from the office and homeworking.

Measurable Outcomes

1. End users will have easier access to the latest devices and versions of applications, enabling a more productive workforce
2. Device Cost per FTE reduced
3. A market, offering value for money, exists for government devices
4. Take up of shared services is higher because it is easier due to device standardisation

Benefits

The End User Device Strategy will deliver the following benefits for departments individually and government as a whole. The Business Case deliverable will expand on this section, including detailed financial analysis.

Cost benefits

Defining standards for separating the application and device layers will enable vendors to provide standard application packages that can be consumed cross government. This will reduce costs by:-

- reducing application integration and test costs across government by doing it once.
- enabling the Application Store to provide standard applications across government reducing procurement and overall license costs.
- creating the ability to implement license sharing and application re-deployment across departments.
- reducing the cost of Machinery of Government changes through the common application packaging and deployment architectures.

Basing standard device solutions on families of work styles will enable common device standards across departments. This standardisation will:-

- improve buying power through common device procurement, where this is relevant; and
- create a larger market for standard device offerings making it more attractive for suppliers to provide a standard set of all-encompassing services. For example, as the mobile phone market works today, where the device is provided as part of a service.

Example Government Devices like Mobile Phones: With commonality of service and clear market definition it is possible for suppliers to offer “free” devices and charge minutes.

This approach can be extended to other devices and services.

Decoupling of applications will provide the ability for services to be consumed through any government or non-government provided device (including Bring Your Own Device) where the data is at an appropriate security level. This will:-

- reduce cost by minimising the number of government provided devices.
- Increase flexibility and reduce cost by enabling access to services from any department’s device.
- provide opportunities to consolidate business continuity provisions between departments reducing overall costs.

Financial analysis

Work with industry analysts has identified material scope for reducing the cost of end user devices across government. This analysis, however, gives a very wide range of current costs and potential savings due to the different contracts and definitions of desktop across government. The implementation phase will use existing and quick wins benchmarking data to estimate current costs, produce a standard end user device definition and quantify expected savings from standardisation and strategy adoption.

The above benefits are expected to begin being realised in the short (2yrs) to mid (5yrs) timeframe. Implementation is expected to be simpler and quicker for some organisations/work families where there are limited legacy application needs, with the time to implement increasing where legacy application alterations are needed to achieve decoupling.

Wider Benefits

Adopting the End User Device Strategy is a key enabler for the other strands of the Government ICT Strategy, for example, Green, Application Store for Government and G-Cloud.

End user device standardisation will increase flexibility and cross-departmental work sharing by creating the common framework for application deployment. Standardisation and decoupling the end user device configuration from application presentation will reduce the need for large scale, high risk and high cost technology refresh programmes, as these can be achieved through continuous refresh.

Creating common end user device interface standards (including decoupling of application presentation from device configuration) simplifies the target environment for the Application Store for Government and G-Cloud.

Delivery and implementation

Delivery and implementation plan

The End User Device Strategy will be delivered as a programme of work in 6 streams in line with best practice developed within ICT implementation workstreams. Responsibilities and terms of reference will be defined for all 6 streams following further pan-government consultation.

These will cover:-

Technical design – technology design and creation of standards etc.

Security design – security model / design and standards.

Market Development – developing the market for suppliers to deliver into, engaging with suppliers to ensure that they understand the market.

Procurement and change opportunity – reviewing existing contracts, looking for interception opportunities and creating or reusing commercial vehicles necessary for implementation. The stream delivering this work will lead on quick wins.

Communications and marketing stream – will publicise the strategy and promote take up across government.

Overall design governance – responsible for approval of all in flight deliverables and ensuring the necessary governance structures are in place going forward.

Implementation of the strategy will be the responsibility of individual departments as will measurement of the realisable benefits. Departments will have to demonstrate that all end user device changes are in accordance with the strategy and that their technical direction aligns with the strategy.

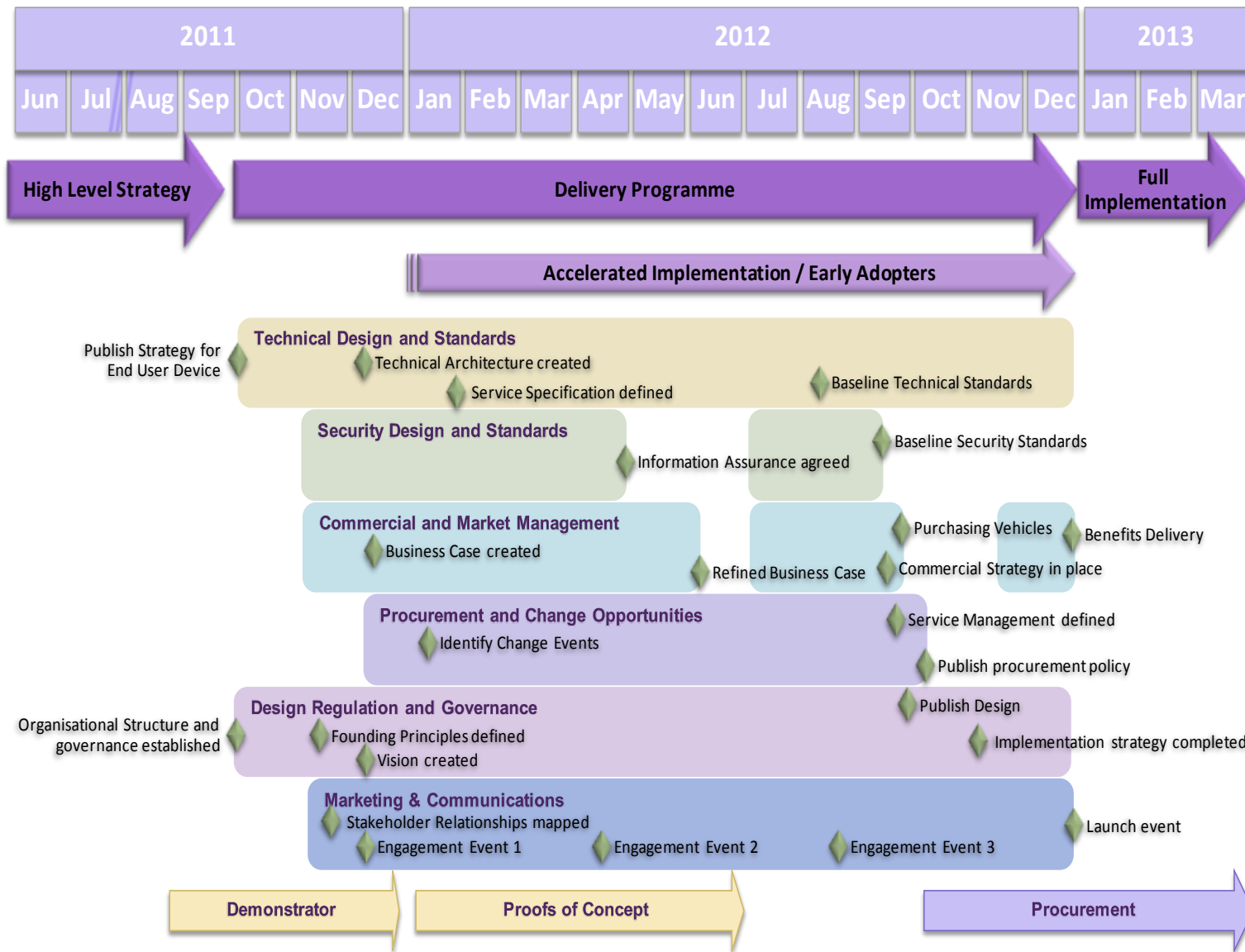


Figure 2: Implementation Timeline

Delivery Phase activities

The End User Device Strategy will be delivered through the following activities:

1. Establish the departmental responsibilities; what they have to do and what they have to change;
2. Identify further quick win opportunities;
3. Establish pan-government usage families;
4. Establish standards for each of the common services, including a target operating model;
5. Understand end user device capabilities and constraints;
6. Establish the principles to which government end user devices must adhere, including environmental, accessibility and data standards;
7. Specify standards that enable decoupling;
8. Define interface standards;
9. Establish package, launch and software delivery standards and methodology for virtualisation options;
10. Establish the approach for lifecycle management;
11. Establish a commercial model and new commercial vehicles, reusing existing constructs where appropriate;
12. Create a timeline for contract expiry dates and options for contract interceptions;
13. Review existing frameworks to inform the delivery of the strategy;
14. Inform and stimulate the market.

Quick Wins

The following quick wins will be delivered alongside the strategy without affecting the long term aims of the strategy.

- The Quarterly Data Summary suggests that there is large disparity between departments' cost of desktop provision per FTE. We will carry out a coordinated desktop/devices benchmarking exercise for contracts with 3 years or more to run.
- Standardise procurement specifications for devices and purchase vehicles (where it is appropriate for departments to purchase devices) to aggregate demand. Conducting the exercise across government on a periodic basis will save the costs of duplicate effort and drive better value for money.

Constraints

The end user device is a core method of allowing users to consume services both delivered and enabled by other parts of the Government ICT strategy. Thus, it must enable those delivery strands and will inevitably be constrained by them. Constraints will be identified and challenged as the solutions are matured but are characterised by the following:

- accessibility, all government end user devices must comply with current legislation
- security, HMG must protect the information it holds in an appropriate manner
- there are a limited number of currently available open standards in the end user device space
- existing contractual arrangements with suppliers
- balancing end-user productivity with cost savings.

None of these challenges or constraints should prevent delivery of the Strategy but if not addressed may reduce potential benefits.

Risks and issues

Risks are being highlighted at this early phase in order that they can be addressed in later phases of the project.

1. End user services are a very complex and interlinked mesh of device, service, software delivery, user management, security etc. Other attempts at a pan-government desktop have not had the expected cross-government take up.
Mitigation: appropriate focus and time required to deliver a quality solution, with cross-departmental cooperation.
2. Suppliers may leverage existing departmental relationships, or offer small concessions on current contracts, in exchange for extensions to contracts.
Mitigation: no contract should be extended unless approved centrally.
3. For the benefits of end user devices to be wholly realised, other ICT strategy strands need to deliver dependencies.
Mitigation: engagement with other ICT strands during the delivery phase.
4. Key consumers and suppliers may not contribute effectively to create a strategy that has relevance and buy in cross government.
Mitigation: engagement by marketing and communications and commercial and market management streams in the delivery phase.
5. Without a very clear definition of end user device across government, it is impossible to show best value for money.
Mitigation: working with departments and industry analysts to develop cost model around the strategy definition of end user device.
6. Existing contracts will restrict implementation options and time scales for adoption of the strategy.
Mitigation: The strategy is not reliant on contract expiry and can be adopted wholly or in part through existing contracts. The commercial stream will address this in the delivery phase.
7. Separating the end user device layers will introduce new delivery and supply models, including opportunities to increase multi-sourcing. This will have an impact on how service integration activities are performed in many organisations.
Mitigation: work with other ICT strands that are also looking at strategies for dealing with this (e.g. G-Cloud) to identify good practice and guidance across a range of delivery/supply models.

Devices Design Authority

Governance will be provided by the Devices Design Authority (DDA), which will be built upon principles established as best practice within the ICT implementation workstreams. It will be accountable to the CIO Delivery Board and to Ministers through the CIO of HMRC.

All changes to end user device standards will be decided by the DDA; advised by working groups (Figure 3). These working groups will be made up of subject matter experts from within government and industry. The groups can only advise the DDA; they cannot make or approve changes by themselves.

Wherever possible, the forums will align their work to other pan-government groups that are already considering similar issues, such as the other strands of the Government ICT Strategy.

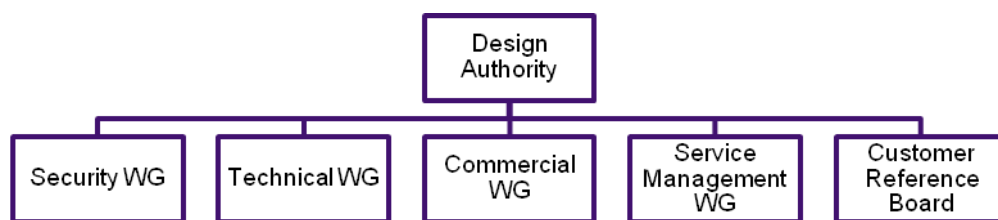


Figure 2: Devices Design Authority and Working groups

The DDA will manage the changes to end user device standards. It is the only body that can make decisions on these changes, and it will be responsible for making those decisions in a timely and unbiased manner.

The CTO Delivery Group will act as the initial DDA.

Customer Reference Board

DDA's customers are the government departments that have adopted (or are planning to adopt) the End User Device Strategy. The Customer Reference Board safeguards the customer interest in considering changes that could be made.

The Customer Reference Board will be made up of senior, business-led and technically aware individuals from central government departments.

Appendix

The End User Devices Strategy alignment with other strategy themes

ICT Strategy theme	End User Devices Strategy alignment with theme
Green	<p>Adoption of government CIO Council's Green Delivery Unit best practice in procurement and lifecycles</p> <p>Strategy will move government to more modern operating systems which include more sophisticated power management capabilities</p> <p>Reduction in travel due to remote working</p> <p>Enabling use of equipment beyond normal working life (reuse)</p>
SMEs	<p>Separating the end user device layers enables procurement of smaller packages, particularly in the application layer, which should allow SMEs to compete</p>
Open Source	<p>Level playing field: nothing in the strategy will require open source, nothing in the strategy will prohibit open source</p>
Open Standards	<p>Strategy will use open standards, where available and appropriate</p> <p>Where no open standard is available the End User Device Strategy will specify any required standard across government</p>
Transparency	<p>Transparency between cost of devices and cost of services</p> <p>Breaking the overall service into individual services will introduce transparency of the cost of each of those services.</p>
Over capacity in data centres	<p>Defining a set of common services aids data centre consolidation</p>
Streamline procurement	<p>Strategy supports smaller (therefore faster and lower risk) procurement, with no upfront volume commitment</p> <p>The End User Device Strategy will define new or reuse existing commercial vehicles, as appropriate</p>

ICT Strategy theme	End User Devices Strategy alignment with theme
Presumption against large projects	Services can be procured individually, perhaps on a utility basis
Public sector productivity and efficiency	<p>Giving public sector employees access to devices based on common standards enables</p> <ul style="list-style-type: none"> streamlined workforce change sharing of applications and cross governmental working reduced departmental training and support for employees transferring between departments.
Increased standardisation	<p>Give departments a choice of services, built on common standards that are proven for use in government and can be procured easily</p> <p>Creates a large, competitive market of reusable services based on government standards</p> <p>Suppliers test once for government and use many times, reducing costs and price</p>
Greater engagement with departments	The End User Device Strategy subgroup created to engage departments to promote alignment of approaches
Stimulating economic growth	<p>Create a fairer and more competitive marketplace,</p> <p>Breaking the overall service apart into individual services creates greater direct opportunities for SMEs</p>
End to oligopoly of large suppliers	Giving business to suppliers of any size that can offer a good service at a good price
Deliver economies of scale	<p>A standards-based hardware and software procurement model allows government to leverage its buying power</p> <p>Re-use of packaged/tested applications across departments reduces cost</p>
Responsive public services	Giving public sector employees more flexible devices should help them to provide more responsive public services
legacy applications have acted as barriers to the rapid introduction of new policies	<p>The use of virtualisation technology can assist with the immediate problem.</p> <p>Application Lifecycle Management policies will be put in place to mitigate this in future</p>

ICT Strategy theme	End User Devices Strategy alignment with theme
Avoid lengthy vendor lock in	Breaking the overall service apart into individual services makes it easier to move from one vendor to another Utility based model for services
Reuse, sharing and scalability across organisational boundaries	Common platform created across departmental boundaries enables reuse and sharing A common platform enables consumption of services from external bodies by multiple departments (and conversely)
Rationalise diverse property estate	Make it easier for departments to merge/demerge/restructure and relocate Enable more people to work from outside the office, freeing up office space
Empower public sector reform	Enable government ICT to be used more effectively to support front line delivery and maximise efficiency Make it easier for departments to merge/demerge/restructure and relocate Simplifying use of services that are not entirely delivered by the public sector
Cloud & Apps	Creating a common end user device environment across government will enable the consumption of cloud-based services

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