



National Audit Office

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Department for Work and Pensions

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# The pension service: the impact of legacy ICT

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## Summary

**1** The Department for Work and Pensions (DWP) is responsible for processing and paying the state pension and related benefits to 12.8 million pensioners in the UK and abroad. Its pension service has approximately 6,000 staff responsible for delivering and supporting 750,000 new claims and on-going payments, amounting to £80 billion per annum. Around twenty per cent of the 12.8 million pensioners (or their representatives) contact the service in any given year. The claims and payments are processed on the Pensions Strategy Computer System, referred to in this document as the PSCS.

**2** DWP is leading the government's welfare reform programme, which aims to create a new welfare system for the twenty-first century. The reforms include the introduction of Universal Credit and pensions reform. To be better placed to manage these reforms, DWP has recently completed a major transformation programme dissolving its executive agencies and bringing all its delivery services under a single Chief Operating Officer.

**3** The National Audit Office examined the way DWP manages the PSCS and the impact of legacy ICT on the delivery of the pension service, including the processing and payment of the state pension. We found:

- The PSCS is robust, stable and well managed. The targeted availability for the PSCS is 99.5 per cent and this was met in 23 out of the 24 months we looked at. The system cost £8.9 million in 2011-12, 2.3 per cent of the total service cost for that year. The volumes of work undertaken by the pension service have reduced by 7.8 per cent per annum between 2009-10 and 2011-12 due to increases in the state pension age for women and other reforms.
- DWP has successfully introduced a software "wrapper" to the PSCS in most of its pension centres. In 2005, DWP installed the Customer Account Management (CAM) system, a case management system that pulls together the comprehensive history of each of its customers' benefits and contributions across departments and systems. This enabled DWP to transform the pension service and to introduce a mainly telephone based service reducing the processing time of a new state pension claim from six to eight weeks' elapsed time to a 15-20 minute phone call. For example, state pension claimants provide their information over the phone and a DWP employee checks the claim via CAM. Once the checks are validated a claim can be authorised.
- DWP has increased its efficiency significantly since 2008-09, mainly by improvements in its processing activity and reducing the amount it spends on enhancements to the system. The cost per customer of the pension service, excluding overheads, reduced from £28.99 in 2008-09 to £20.32 in 2011-12.

This equates to an annual average reduction of 11.2 per cent and further reductions are forecast for 2012-13.

- The PSCS and CAM do not fully support online applications from those approaching pension age and therefore they do not meet the current government strategy of 'digital by default'. DWP has established integrated online channels for similar systems, but has not done so for the PSCS. There is an online channel provided by DWP that can be used to claim a state pension. However, these online claims are printed, scanned and manually entered into the system in the same way as paper applications. In addition, a DWP employee using the system in a pension centre cannot see the online application and is therefore unable to assist with online application queries.
- Disaster recovery of the PSCS is not tested annually. Disaster recovery testing for the PSCS is carried out on the ICT system environment which hosts three other systems in addition to the PSCS. The Customer Services Directorate in DWP is responsible for the disaster recovery capability and performs recovery tests of the ICT system environment on an annual basis but selects only one of the four systems, meaning that the PSCS is potentially tested only once every four years.
- The PSCS is not accredited to government security standards. DWP performed an internal risk assessment in line with government security standards in 2007. It took the decision that the cost of accrediting the legacy ICT to comply would be disproportionate to the risk posed. There are plans to review this decision in 2013.
- There are some known limitations and risks to the PSCS. For example, the audit trail does not show how changes to the system are made as they are not recorded. These issues are well known and so far, this has not resulted in loss of data or increase in fraud.
- The challenge for DWP if the system is kept is the decline in COBOL skills in both DWP and its suppliers. Fujitsu announced in 2007 that due to the increasing scarcity of legacy coding skills it will end support for the current Virtual Machine Environment (VME) operating platform in 2020.
- Due to the scale, age and complexity of the PSCS only a small number of large ICT suppliers are able to support it as a single entity. If users of VME choose not to migrate their applications in this timeframe Fujitsu plans to offer cloud based services that will enable users of VME to run their legacy applications on modern infrastructure.
- The main challenge with decommissioning the system is the risk to data, given the scale of the records to be transferred.

# Part One

## The National Audit Office's assessment of government's legacy ICT

**1.1** We define legacy ICT as systems and applications that have been operationally embedded within a business function but superseded by newer and often more effective technologies or changed business needs, for example the need to deliver a new policy or deliver a service in a different way.

**1.2** Public services that rely on legacy systems face a number of risks. Availability can be impacted through unreliability or failure of worn components. Extending public services to digital channels as per the 'digital by default' strategy as set out in the Government Digital Strategy<sup>1</sup> can be constrained by legacy modes of operation - processing jobs as a sequence of batches instead of reacting in real time in a way users of digital services have become accustomed. Additionally, the improvement of public services through their redesign can take longer and be more costly because the skills and knowledge that understands the function of the legacy system have been lost.

**1.3** In its ICT strategy,<sup>2</sup> the government identified its legacy systems as acting as barriers to transforming public service delivery. These barriers stem from older systems that may use proprietary standards in their technical design that creates challenges when integrating data and processing with modern systems. Despite this, the government's stated preference is to extend the lives of such systems rather than face the risks and costs of replacing them. This was made clear in a response to the Public Administration Select Committee's (PASC) report on IT in government<sup>3</sup> which identified the often key role legacy systems play in public service delivery. PASC recommended that government identifies where and when investment is needed to migrate and replace legacy systems. In response, the government said it preferred to extend the life of legacy systems using software layers it called "wrappers" that would make legacy systems integrate more easily with newer systems. Subsequently the

<sup>1</sup> The Cabinet Office, *Government Digital Strategy*, November 2012, available at <http://publications.cabinetoffice.gov.uk/digital/strategy/>

<sup>2</sup> The Cabinet Office, *Government ICT Strategy*, 2011, available at [http://www.cabinetoffice.gov.uk/sites/default/files/resources/uk-government-ict-strategy-2011\\_0.odt](http://www.cabinetoffice.gov.uk/sites/default/files/resources/uk-government-ict-strategy-2011_0.odt)

<sup>3</sup> House of Commons Public Administration Select Committee, *Government and IT - "a recipe for rip-offs": time for a new approach: Further Report with the Government Response to the Committee's Twelfth Report of Session 2010-12*, Twentieth Report of Session 2010-12, HC 1724, January 2012.

Cabinet Office issued further advice<sup>4</sup> providing more detail on the approach to handling legacy ICT.

**1.4** We examined how the public sector manages its legacy ICT systems in relation to service delivery. In particular, we explored public services that continue to be supported by legacy ICT for the foreseeable future.

**1.5** We applied our Business Analysis Toolkit<sup>5</sup> to assess the impact of legacy ICT on public service performance and costs. The toolkit focuses on three areas of analysis: the service model which describes the key components of service delivery; service performance over time, with associated costs and risks; and an enterprise analysis<sup>6</sup> measuring how mature the organisation is in managing, operating and maintaining the service, including its legacy ICT.

**1.6** This report is part of a series that examines how well government is managing those public services that rely on legacy ICT systems. There are four reports in this series:

- The consumer credit licensing service operated by the Office of Fair Trading using the 6 year old PROMOD system.
- The processing and payment of the state pension, a service delivered by the Department for Work and Pensions using the 26 year old Pension Strategy Computer System.
- The Value Added Tax (VAT) service operated by HM Revenue & Customs using a series of legacy systems that originally date back to a 40 year old VAT mainframe system.
- The prescription processing service operated by the NHS Business Services Authority using the 6 year old Capacity Improvement Programme system and its 17 year old legacy forerunner.

**1.7** In Appendix Four we show how this piece of work fits in with other National Audit Office publications on government ICT.

<sup>4</sup> The Cabinet Office *Government Service Design Manual*, April 2013, available at <https://www.gov.uk/service-manual/technology/architecture.html#the-legacy-estate>

<sup>5</sup> A full description of the methodology used during our fieldwork, including the components of our Business Analysis Toolkit, can be found in Appendix Two.

<sup>6</sup> Our enterprise analysis is performed using a framework containing the seven key areas that most impact performance: strategy, governance, implementation, service management, people, process and technology. A full description of the enterprise analysis framework we applied during our fieldwork can be found in Appendix Three.

## Part Two

### The pension service

2.1 In this Part, we describe the role of the Department for Work and Pensions (DWP), and the service it provides for processing and paying the state pension.

### The Department for Work and Pensions

2.2 DWP is responsible for welfare and pension policy. It is the biggest service delivery department in the UK, serving 20 million individuals and it is leading the creation of the government's welfare system for the twenty-first century. This includes the delivery of Universal Credit and pension reform (which includes the introduction of a single-tier pension). The pension reforms are described in **Figure 1**.

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#### Figure 1

##### The pension reforms

###### **Current Pension reform**

###### **State pension age equalisation**

The reform contained in the Pensions Act of November 2011 changes the state pension age equalisation timetable. From April 2016, women's state pension age will rise faster than originally planned, so that by November 2018 (instead of April 2020), women's state pension age will be the same as men's (65 years). Between December 2018 and October 2020, the state pension age for both men and women will increase from 65 to 66 years. The Act also introduced automatic enrolment into workplace pensions from October 2012. Between 2026 and 2028, the state pension age will increase to 67 for both men and women. In the 2012 Budget, it was announced that the state pension age will be linked to average life expectancy.

###### **Future pension reform**

###### **Single-tier pension**

In March 2012, the Chancellor of the Exchequer announced in the Budget the government's intention to introduce a single-tier pension for new pensioners. This combines the basic state pension with the second state pension into one single-tier pension. The details of the proposed change were to be published in a White Paper in June 2012, but it was delayed until 15 January 2013. The White Paper states that from 2016, there will be a flat rate state pension of £144 per week (in today's money) for all qualifying pensioners with 35 years' National Insurance contributions. This replaces the current complex system of the basic state pension (currently £110.15 per week for a single person), the Guarantee Credit (which tops up income to £145.40 per week for a single person), the Savings Credit (up to £18.06 per week for a single person, for those who have saved for retirement) and the state second pension (which is linked to earnings).

Source: NAO analysis

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2.3 In 2011-12, DWP's operating costs were £8 billion and it employed 100,000 full-time equivalent individuals. DWP plans to reduce its budget by 26 per cent in real terms between 2010 and 2014. In 2011-12, the reduction in baseline costs equated to a decrease in spending of £666 million.<sup>7</sup>

2.4 In 2011-12, DWP embarked on a major transformation programme. It closed three of its executive agencies.<sup>8</sup> DWP now delivers its benefits services through four operational organisations which are supported by a smaller corporate organisation:

- The pension service
- Disability and carers service
- Jobcentre Plus
- Child maintenance

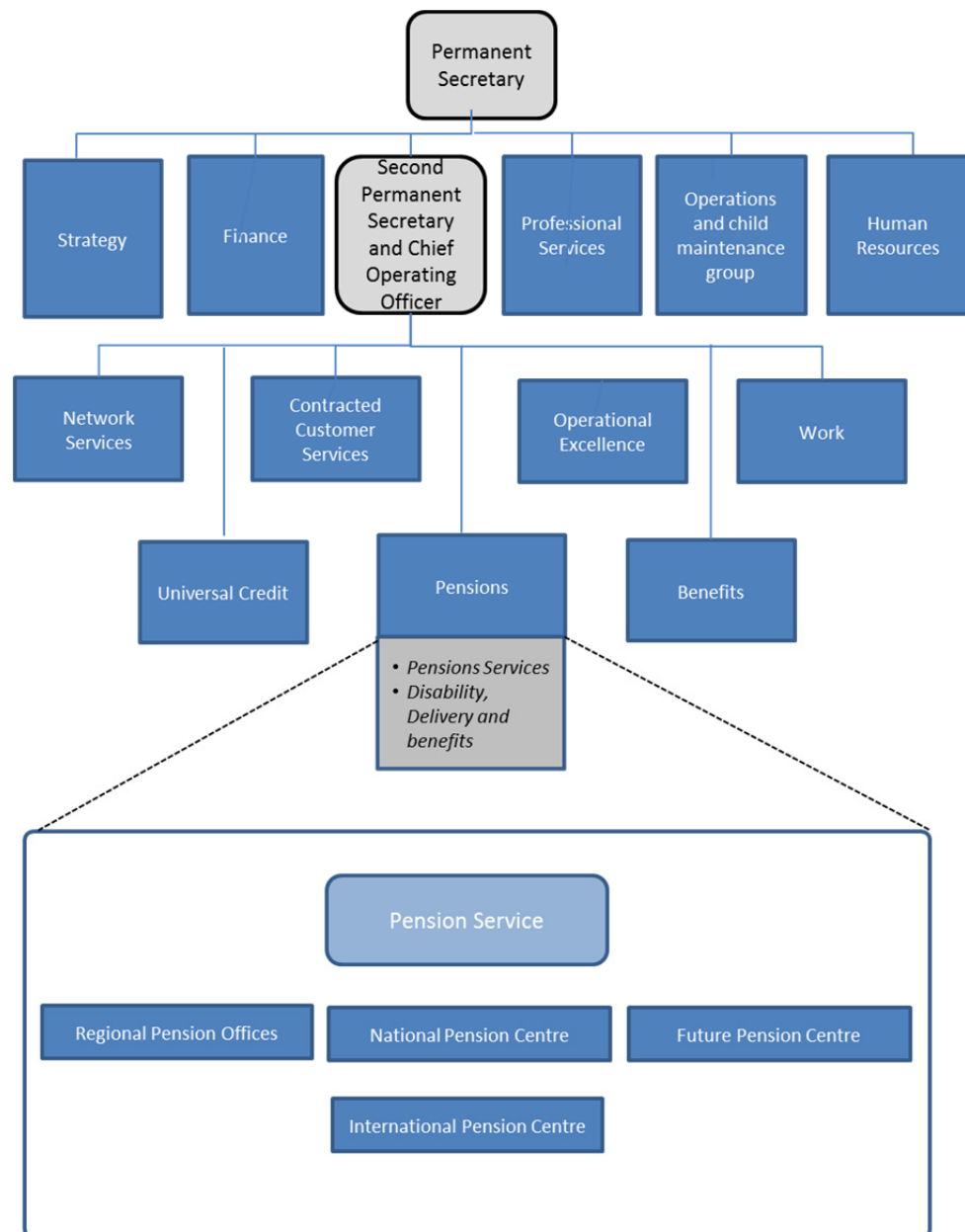
A Chief Operating Officer is responsible for three of these operations (The pension service, Disability and carers service and Jobcentre Plus). There is a separate Director General responsible for operations and the child maintenance group. Operations include the Corporate Information and Technology Directorate (CIT) which is responsible for the Pensions Strategy Computer System (PSCS). There is a Director General responsible for the future strategy of DWP, and Directors General for corporate services of Finance, HR and Professional Services. Under the remit of the Chief Operating Officer, there is a director responsible for change management, prioritising all reform, change and continuous improvement activity (**Figure 2**).

<sup>7</sup> Department for Work and Pensions, *Report and Accounts 2011-12*, HC53, London Stationary Office, July 2012.

<sup>8</sup> Jobcentre Plus and the Pensions, Disability and Carers Service were closed in 2011-12 and the Child Maintenance and Enforcement Commission in 2012-13.

**Figure 2**

DWP organisation chart and the internal structure of the pension service



Source: National Audit Office analysis of DWP information

2.5 The DWP pension service processes and pays the state pension plus other related benefits. In 2011-12, this service cost DWP £385 million to operate. Annually it processes 750,000 new claims and payments and pays £80 billion in state pension and related benefits per annum. Currently about 6,000 people are employed to deliver and support the service.

2.6 DWP introduced the PSCS in 1987 to process the state pension and related benefits. It was fully rolled out in July 1991. This was one of the first Virtual Machine Environment (VME) mainframe computers to be installed by central government. The supplier was ICL Limited (now part of Fujitsu). Fujitsu has announced that it will support VME until 2020. After that date, organisations have a choice of moving to alternative solutions or further extending VME by using a cloud based service that Fujitsu plans to make available as a managed service. This will enable VME users to run their legacy applications on modern infrastructure.<sup>9</sup>

2.7 DWP runs 14 VME systems, 11 are used to process and pay benefits. When introduced, the approach taken created a single system to process each benefit. However, as many benefits are interrelated, each system had to be connected. This approach has made it difficult for DWP subsequently to modernise any one system for paying a particular benefit, as all the systems would have to be changed.

2.8 As an organisation, DWP plans to move away from a 'benefits' focussed strategy to a 'customer' focussed strategy. This aims to put the claimant and customer at the centre of all delivery, which will be 'digital by default'.

2.9 Instead of modernising all its benefits systems, DWP has until now, developed "wrapper" systems that sit on top of its legacy VME systems. In 2005, as part of the Pension Transformation Programme, the Customer Account Management (CAM) system was introduced. This is an off-the-shelf customer relationship management system. The CAM system was introduced in a phased roll-out, which was stopped after the third phase due to budget constraints. Therefore not all pension centres use CAM.

2.10 CAM links all DWP's data about a person from DWP's PSCS, Income Support Computer System and Customer Information System, with data held by HM Revenue & Customs (HMRC) National Insurance and PAYE Service. This allows the pension service to 'check the facts' already held on a person claiming state pension by the various systems in DWP and HMRC rather than gathering all the information together manually. The introduction of CAM enabled DWP to establish a telephone based service and further automated claim processing. This has helped to reduce the processing time of a new state pension claim from six to eight weeks' elapsed time to a 15-20 minute phone call.<sup>10</sup>

<sup>9</sup> Fujitsu website: <http://www.fujitsu.com/uk/>

<sup>10</sup> National Audit Office, *Department for Work and Pensions: Information Technology Programmes Memorandum*, November 2008, available at <http://www.nao.org.uk/>

2.11 The PSCS supports the following benefits (not all of which are processed by the pension service):

- State pension
- Widow's benefit
- Bereavement benefit
- Incapacity benefit and incapacity benefit for youth
- Severe disability allowance
- Maternity allowance

The system also provides information to other DWP services, such as the Income Support Computer System, to enable means tested pension credit claims to be processed and paid. It also has the facility to combine payments of disability living allowance and attendance allowance with state pension and incapacity benefit.

2.12 The PSCS is the responsibility of the CIT directorate, DWP's ICT function. CIT has an enterprise-wide strategy and architecture to reduce the number of ICT applications needed to support the business. The strategy aims to develop a "single, modern ICT machine for each business function, driven by business need". At the time of our audit, the strategy did not include specific plans for the future of the PSCS. DWP has continued to develop the strategy and has now established long-term roadmaps for all of its critical ICT systems, with particular focus on its legacy mainframe based systems. These are updated quarterly.

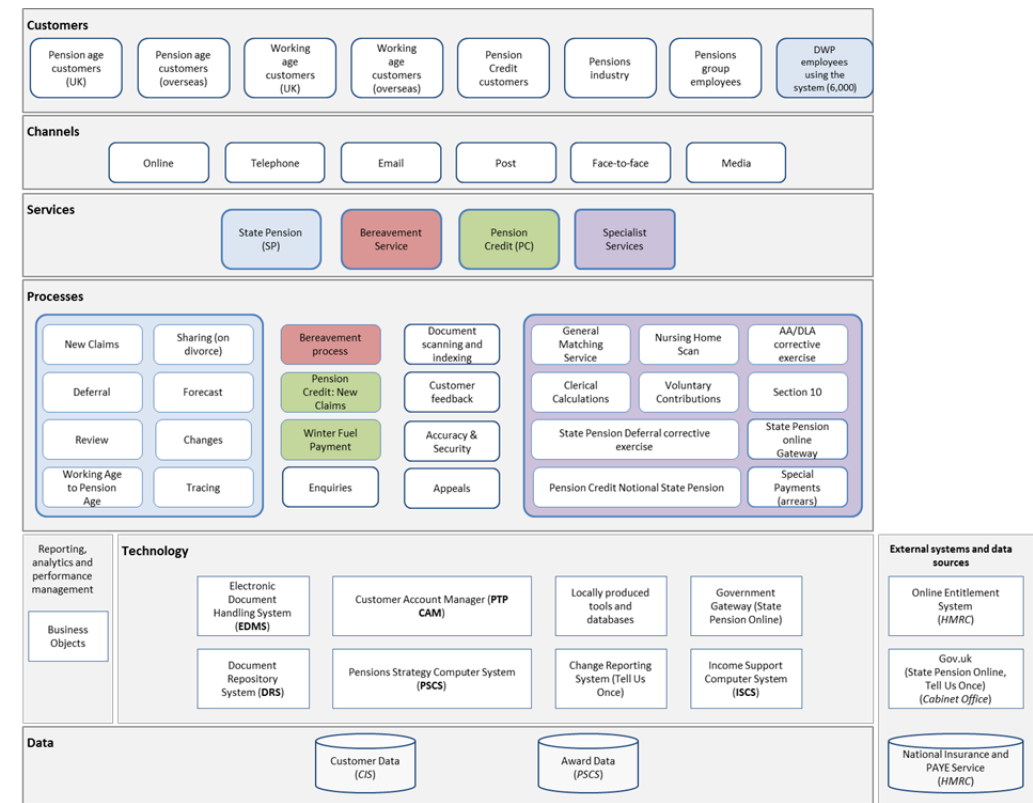
2.13 Any changes to the state pension systems will need to fit in with the implementation of the Universal Credit programme by CIT. The pension service has identified the risk that any Universal Credit programme delays could affect CIT and suppliers' ability and capacity to deliver the single-tier pension in 2016.

# The service model

2.14 **Figure 3** shows the components of the pension service and defines the scope of our study.

**Figure 3**

## The pension service



**NOTES**

1. We have grouped together large numbers of processes to develop this simplified high level view of the pension service. For example, there are a number of individual processes within the 'New Claims' and 'Changes' groups. See section 2.20.

Source: National Audit Office analysis

2.15 The **customers** of the pension service include approximately 12.8 million pensioners (claiming state pension and/or pension credit) plus anyone of working age who pays national insurance contributions. The service aims, seamlessly, to transfer 200,000 people each year from working age benefits to state pension by re-using the information already held, and automating where possible.

2.16 The overwhelming majority of claims are made by telephone. In 2011-12 this was around 560,000 claims. Currently, 15 per cent of claims<sup>11</sup> (110,000) are made online. The online channel does not interface directly with the PSCS and online applications have to be printed, scanned and then manually entered into the PSCS. The remainder of claims (81,000) are either postal or face-to-face claims.

2.17 There are 13 pension centres. Nine centres cover specific geographic areas of the United Kingdom. Their main role is to process and authorise a state pension received via telephone. The centres are the main point of contact for queries from claimants for their area. They are unable to see the online system so are unable to help if a person phones them about a query when completing an online claim. The centres also provide a face-to-face service to the claimant in their own home or in a place that is convenient to them, if their query cannot be dealt with over the telephone.

2.18 The four remaining centres have specific roles:

- The National Pension Centre, based in Newcastle, deals with the more complex claims.
- The International Pensions Centre deals with claims made by pensioners living abroad.
- The Future Pensions Centre deals with applicants that are coming up to retirement age.
- The Walsall Pensions Centre deals with more complex claims and provides pension forecasts.

2.19 The main **services** provided are:

- **State pension** from initial application through to calculation of payment. This involves checking applicant details, including name, address and bank details. The PSCS system and the HMRC Online Entitlement system (OLE) are used to cross-check if the applicant or the applicant's spouse is in receipt of any other benefits. Once verified, the state pension payment can be authorised. The payment can also affect entitlement to other benefits (either reducing them or allowing the claimant access to other benefits such as pension credit).
- **Changes in circumstances** If a current state pension holder notifies a change of circumstance the DWP employee amends the state pension claim, then checks if pension credit needs amending in which case the claim is passed to the pension credit team.

<sup>11</sup> Department for Work and Pensions, *DWP Digital Strategy*, December 2012  
<http://www.dwp.gov.uk/docs/dwp-digital-strategy.pdf>

- **Pension credit** is a means-tested benefit that guarantees a minimum income level for those whose pension arrangements are insufficient. This service also provides a gateway to other benefit entitlements, such as housing benefit, and provides the entitlement information to the claimant. The PSCS and OLE is used to check if a person is entitled to pension credit.
- **Bereavement service**, via telephone, post or 'Tell Us Once', is a government initiative that provides a single point of contact when reporting a death.
- **Specialist services** such as corrections to data and claims, plus exercises that match records across systems for quality and detect errors.

2.20 The main **processes** used by the 6,000 DWP staff are:

- Registering new state pension claimants, forecasting state pension entitlement for those of working age, general enquiries, making changes for existing claimants, tracing 'lost' pensions and deferring payments. In 2011-12 the pension service processed over 2,700 applications for state pension and over 1,100 claims for pension credit every working day. Ninety-five per cent of callers are dealt with successfully at the first call.<sup>12</sup>
- Registering new pension credit claimants and making changes to existing claims. The team also process winter fuel payments, although this is beyond the scope of our study as it does not depend on the PSCS.
- Taking the details of bereavement from a relative or nominated representative. A special team undertakes this work. Staff will amend existing details and cross-check and arrange that other existing benefits are amended or stopped. They also carry out eligibility checks to find out what benefits the surviving relative may be entitled to and take claims for bereavement benefit and social fund funeral payments over the phone.
- Specialist processes that are complex or low in volume. These include the calculation and payment of arrears; corrective exercises where wrong payment has been made; corrective exercises where regulatory change affects entitlements and awards; and changes for customers such as those who have been mis-sold private pensions.

2.21 A timeline of significant PSCS developments is available in Appendix One.

<sup>12</sup> Department for Work and Pensions *Report and Accounts 2011-12*, HC53, London Stationary Office (July 2012)

## Part Three

### Financial and performance analysis

**3.1** In this Part, we undertake a financial and performance analysis of the pension service.

**3.2** We requested service, customer and system performance data for 2010-11 and 2011-12. We also requested service and ICT system cost data for 2008-09 to 2013-14. The Department for Work and Pensions (DWP) has actual cost data for the period 2008-09 to 2011-12 and a 2012-13 forecast but did not have a complete forecast for 2013-14. It had some of the performance data we requested but did not have good measures of customer satisfaction or quality of processing. It was unable to provide us with a complete time series for incidents affecting the legacy Pensions Strategy Computer System (PSCS) when requested but DWP has told us that it holds and monitors this data.

**3.3** Overall we found that services based on the PSCS were well managed. Processing volumes are falling, presenting some management challenges. Despite this, costs are falling. The performance of the service appears to be improving, although the range of metrics is quite small.

### Service and system performance

#### Volumes

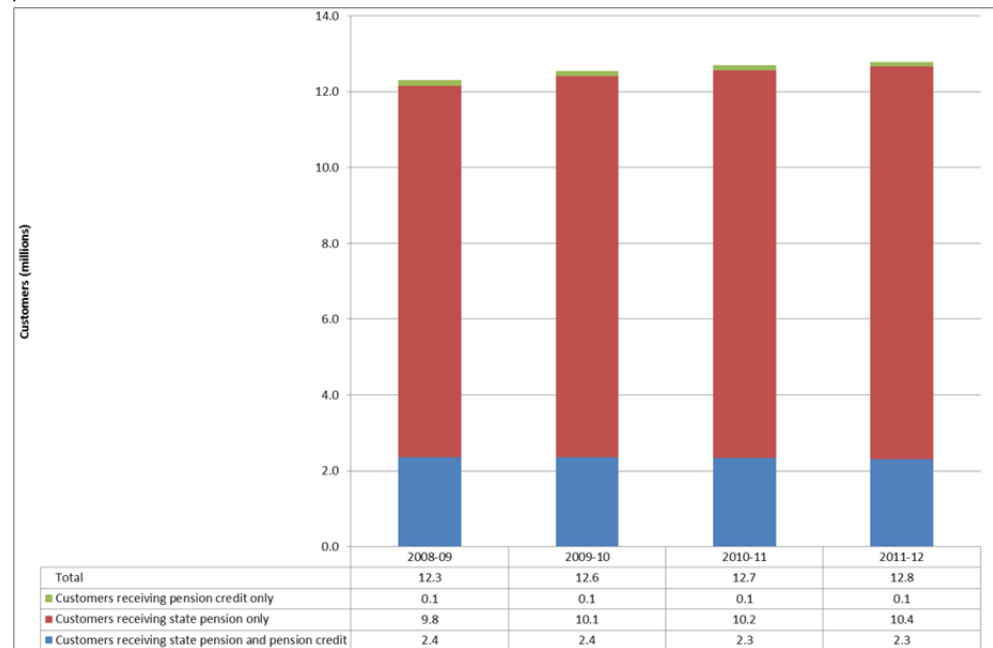
**3.4** The number of customers served by the pension service has risen slowly since 2008-09 but processing volumes have fallen due to increases in the state pension age for women and other reforms. Changes in processing volumes have a stronger effect on the cost of the pension service than the overall number of customers as the process for state pension, which is by far the largest part of the customer base, only requires that around twenty per cent of customers are in contact with the service in a given year.

**3.5** In 2011-12 there were 12.8 million customers of the pension service. This number has risen slowly, 1.3 per cent per annum, since 2008-09 (**Figure 4**).



**Figure 4****Number of customers in receipt of state pension or pension credit**

Since 2008-09 the number of customers of the pension service has grown by an average of 1.3 per cent per annum.



Source: DWP

**3.6** The pension service holds volume and some cost data for four major processes as well as a number of smaller processes. It does not hold volume or cost data for the actual payment of pensions and pension credits.

**3.7** Since 2009-10, the volume of processing activity has fallen by an average of nearly 8 per cent a year due to reforms affecting the service (**Figure 5**). We consider that a rate of decrease of around eight per cent is likely to present a reasonable, but not significant, level of challenge to maintain an efficient and effective service.

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**Figure 5****Pension service processing volumes, 2009-10 to 2011-12**

Since 2009-10, the volume of processing activity has fallen by an average of nearly 8 per cent a year

	2009-10 (thousands)	2010-11 (thousands)	2011-12 (thousands)	Annual average percentage reduction in volumes
<b>State Pension</b>				
New claims	653	521	561	(7.3)
Changes	2,068	1,814	1,635	(11.1)
Total (state pension)	2,720	2,335	2,196	(10.2)
<b>Pension credit</b>				
New claims	289	228	193	(18.3)
Changes	3,047	2,770	2,766	(4.7)
Total (pension credit)	3,336	2,999	2,958	(5.8)
<b>Total (state pension and pension credit)</b>	<b>6,057</b>	<b>5,334</b>	<b>5,154</b>	<b>(7.8)</b>

**NOTES**

1. Figures may not sum due to rounding.

Source: NAO analysis of DWP data

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**Customer satisfaction**

**3.8** As already mentioned, the pension service does not have a good measure of customer satisfaction. We have therefore used the number of customer complaints as a proxy and this data suggests that overall, customers are reasonably satisfied with the service.

**3.9** In 2010-11, 21,000 people complained to DWP about the pension service, 0.2 per cent of the total number of customers. This fell, in 2011-12, to 14,000 complaints, 0.1 per cent of the total number of customers.

**Processing timeliness**

**3.10** The pension service has taken advantage of falling volumes to improve the timeliness of its processing during 2010-11 and 2011-12.

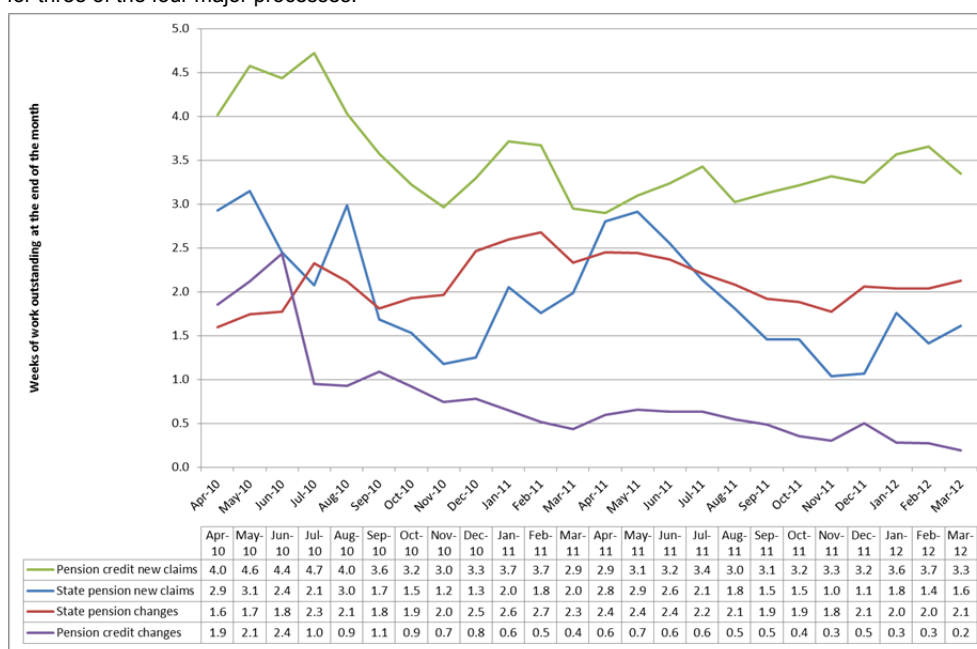
**3.11** The pension service monitors the timeliness of its four major processes using a measure known as 'weeks' work outstanding.' This is calculated by taking the volume of work outstanding at a given time and forecasting how long it will take to complete it. During 2010-11 and 2011-12, the amount of work outstanding has fallen for three of

the four major processes. The exception is changes to state pension claims for which work outstanding has increased. DWP were unable to explain the reasons for this increase (**Figure 6**).

**Figure 6**

### Weeks of work outstanding for the four major processes, 2010-11 and 2011-12

As volumes have decreased through 2010-11 and 2011-12, the amount of work outstanding has fallen for three of the four major processes.



#### NOTES

1. The pension service has a target to have no more than four weeks' pension credit new claims outstanding at any given time and a target to have no more than three weeks' state pension new claims outstanding at any given time. It does not have targets for the change processes.

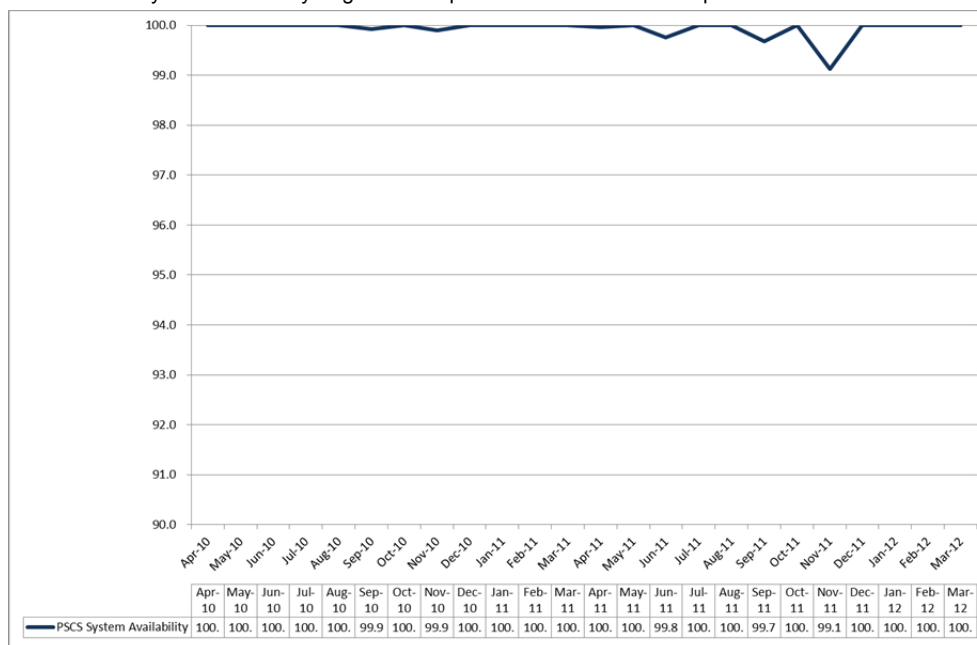
Source: NAO analysis of DWP data

## System availability

**3.12** DWP has maintained good availability of the PSCS during 2010-11 and 2011-12. DWP has a target to have the system available for 99.5 per cent or more of the expected time. It met this target in every month except one, November 2011 (**Figure 7**). DWP was unable to tell us why it failed to meet the target in November 2011.

**Figure 7****Availability of the PSCS legacy ICT system, 2010-11 and 2011-12**

DWP met the system availability target of 99.5 per cent in all months except November 2011.



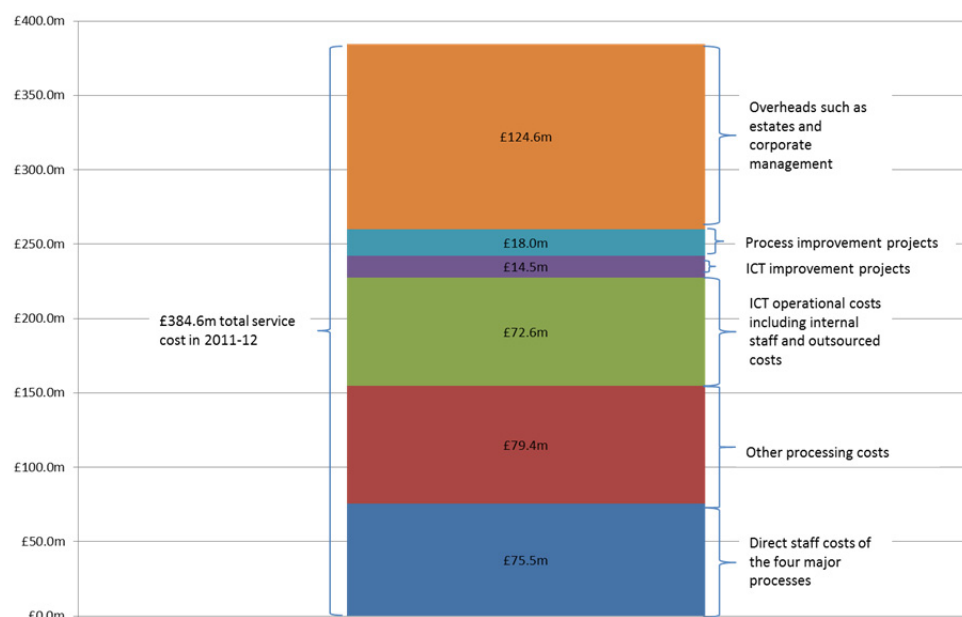
Source: DWP

## Financial performance

**3.13** The total cost of the pension service in 2011-12 was £385 million, of which £87 million, 23 per cent, was spent on ICT including £8.9 million on the legacy PSCS system (**Figure 8**).

**Figure 8****Total cost of the pension service, 2011-12**

The total cost of the pension service in 2011-12 was £385 million of which £87 million, 23 per cent, was spent on ICT

**NOTES**

1. Direct staff costs of the four major processes is based on a time allocation model run by DWP. It includes all staff time spent processing new claims and changes for state pension and pension credit and queries associated with these activities, including by phone, email and face-to-face.
2. Other processing costs include the staff costs of activities other than the four major processes (such as entitlement enquiries and winter fuel allowance processing), indirect staff costs (for example for management or training), and non-staff costs (including special payments and write-offs).

Source: NAO analysis of DWP data

**3.14** The pension service has increased its efficiency significantly since 2008-09, mainly by generating efficiency in processing and reducing the amount it spends on enhancements.

**3.15** In 2011-12 the pension service changed from an agency of DWP to an operational unit. This change means that DWP does not have consistent overhead data (which accounted for 32 per cent of all costs in 2011-12) for comparison over time. Our time-series analysis therefore excludes overheads. We have also primarily considered cost per customer, even though cost per transaction would be a better measure, as there is no straightforward way to add together the four different types of processing activity.

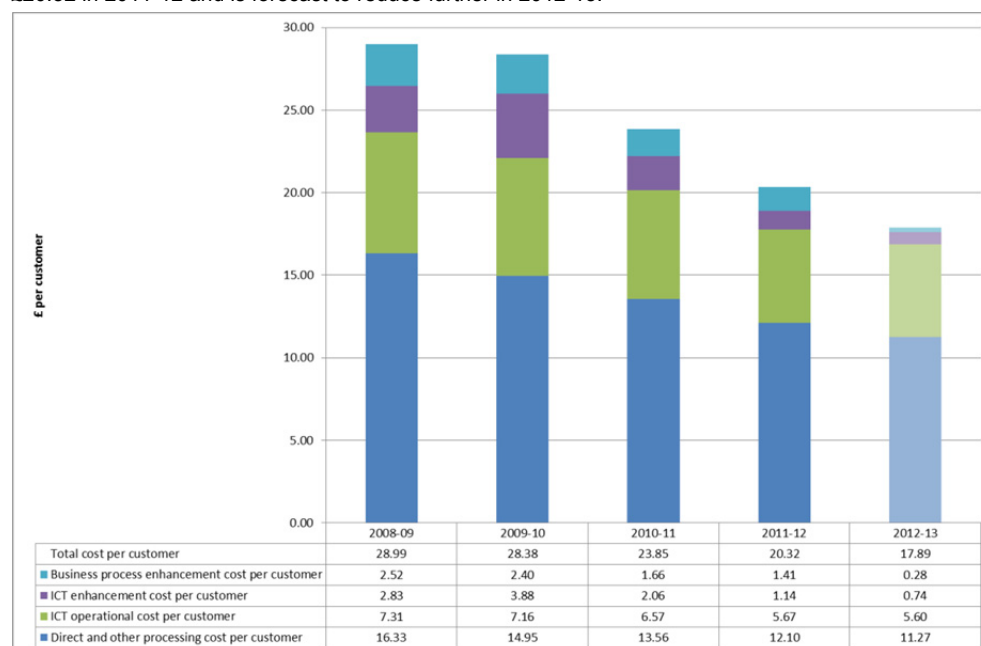
**3.16** The cost per customer of the pension service, excluding overheads, reduced from £28.99 in 2008-09 to £20.32 in 2011-12 and is forecast to reduce further in 2012-13 (**Figure 9**). This equates to an annual average reduction of 11.2 per cent. Costs have reduced in all major categories for which DWP has data, but have reduced

fastest for processing (both direct and other) and enhancements. Processing costs have been reduced partially due to falling volumes (Figure 5) and partially as a result of greater efficiency (**Figure 10**). The reduction in enhancement expenditure is due to the completion of a number of major improvement projects. Enhancement expenditure is expected to rise again in 2014-15 once the government's plans to create a simpler state pension are finalised.

### Figure 9

#### Pension service cost per customer in receipt of benefit, 2008-09 to 2012-13

The cost per customer of the pension service, excluding overheads, reduced from £28.99 in 2008-09 to £20.32 in 2011-12 and is forecast to reduce further in 2012-13.



#### NOTES

1. Overhead data are not available for this period so is excluded from these costs.
2. Amounts have been adjusted for inflation using the retail prices index.
3. 2012-13 customer numbers have been estimated using the historic trend growth rate.
4. 2012-13 costs are based on forecast data.

Source: NAO analysis of DWP data

**3.17** Due to volume reductions, direct processing costs could be coming down without improvements in efficiency. DWP data, though, shows that the cost per transaction of three of the four major processes has reduced over time (Figure 10). However, the new pension credit claim process has not seen a reducing cost per transaction. Figure 5 shows that this process had both the fastest annualised reduction in volumes, at 18.3 per cent per annum, and has the lowest overall volumes when compared to the other three major processes. This may explain why DWP has found it harder to control the cost per transaction of this process.

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**Figure 10****Direct processing cost of each of the four major processes, 2009-10 to 2011-12**

DWP has improved the efficiency of three of the four major processes by reducing the direct processing cost per transaction.

£	2009-10	2010-11	2011-12
Cost of processing a new state pension claim	27.97	23.67	23.3
Cost of processing a state pension change	14.16	12.18	12.53
Cost of processing a new pension credit claim	58.37	55.93	61.07
Cost of processing a pension credit change	11.72	10.27	10.90

**NOTES**

1. Direct processing costs exclude other processing costs, such as team and service management, ICT costs, enhancement costs and overheads.
2. Amounts have been adjusted for inflation using the retail prices index.
3. Costs are allocated to processes using a time recording system. This system was introduced for the first time in 2009-10.
4. In 2009-10, the costs of the telephone contact centre were not allocated to individual processes whereas from 2010-11 the costs are. We have allocated 2009-10 telephony costs using the average share of telephony costs on each of the major processes in 2010-11 and 2011-12.

Source: NAO analysis of DWP data

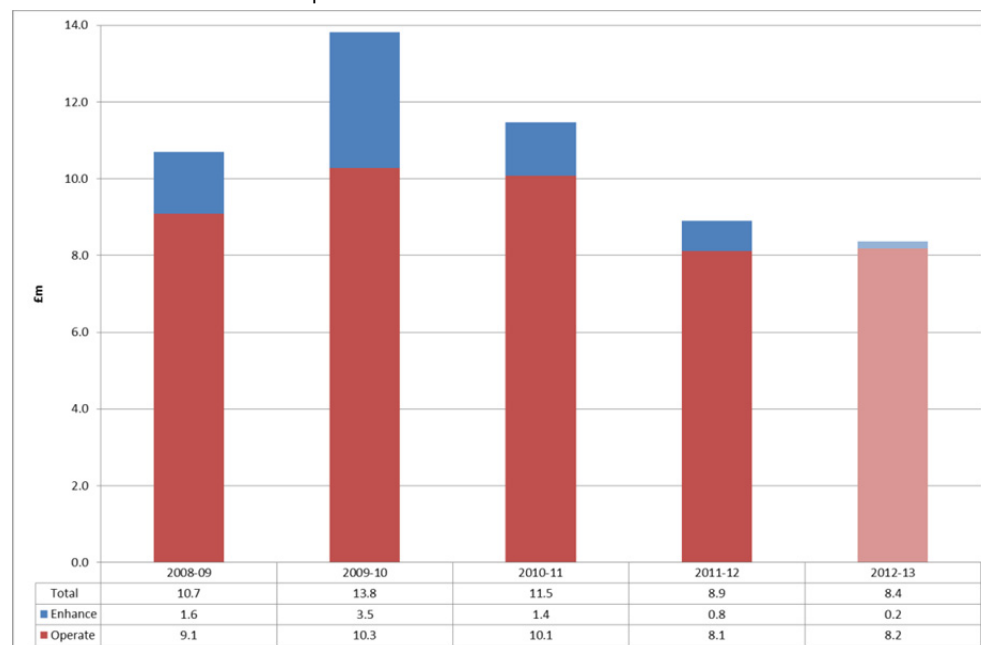
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**Costs of the PSCS legacy ICT system**

**3.18** Figure 11 shows that the PSCS cost £8.9 million to operate and enhance in 2011-12, 10 per cent of all pension service ICT costs in that year.

**Figure 11****Costs of the PSCS legacy ICT system, 2008-09 to 2012-13**

The PSCS cost £8.9 million to operate and enhance in 2011-12

**NOTES**

1. Amounts have been adjusted for inflation using the retail prices index.

Source: NAO analysis of DWP data

**3.19** Since 2008-09, the operational cost of the PSCS has varied between £8.1 million and £10.3 million. Most of this variation was caused by changes in the volume of processing activity reflecting the reduced volumes shown in Figure 5.

**3.20** Enhancement expenditure on the PSCS has fallen significantly from its peak of £3.5 million in 2009-10 to a forecast of £0.2 million for 2012-13. This mirrors the overall fall in enhancement expenditure seen in Figure 9. DWP is not planning substantial enhancement expenditure on the PSCS system for the foreseeable future. The trend in expenditure on the PSCS is similar to other DWP managed systems, such as Government Gateway, and reflects a policy to reduce spend on legacy ICT while the development of Universal Credit takes place.<sup>13</sup>

<sup>13</sup> Comptroller and Auditor General, *Digital Britain One: Shared infrastructure and services for government online*, Session 2010-12, HC 1589, National Audit Office, December 2011, p.22



## Part Four

### Our enterprise analysis of the pension service and the management of the PSCS

**4.1** In this Part, we summarise the findings of our enterprise analysis of the pension service. Each section highlights a key finding and our assessment scores. Our scoring ranges from 1 to 5, the higher the number the better the performance. Two sets of scores are given which represent where the organisation is currently and where we believe its performance will be in 12 to 18 months, based on the evidence we have seen.

**4.2** The next twelve to eighteen months is a period of change for the pension service and the provision of state pension. Overall our assessment found that the Pensions Strategy Computer System (PSCS) provides the pension service with a robust and stable system. It meets the current needs of the business, but will be unable to meet the business's future needs as it does not fully support the current government emphasis for online services. The Department for Work and Pensions (DWP) has established integrated online channels for similar systems, but has not done so for the PSCS. At the time of our audit, key decisions were still to be taken in the proposed policy changes in the provision of state pension, therefore DWP was unable to plan for the future of the PSCS.

**4.3** Our assessment found that the service is well managed. Governance arrangements are comprehensive but complex. We found the main weaknesses were in the ability of DWP and its ICT suppliers to retain sufficient ICT skills and knowledge to maintain the PSCS in the future. Although we found processes were well mapped and documented, there are weaknesses in the security accreditation of the PSCS and in disaster recovery.

#### Strategy and business model

Key finding	Our assessment	
	Now	Future
At the time of our audit, DWP had not been able to develop a strategy and costed plan for the PSCS, as it has been awaiting policy decisions on the future structure of the state pension. Increased clarity on this will enable DWP to plan its future strategy. Due to the change in support arrangements of the PSCS, it needs to start working on options now.	2	2

**4.4** The reforms currently planned for state pensions, including the introduction of a single-tier pension, have constrained DWP's ability to plan for the future of the PSCS. At the time of our fieldwork, the pension service was awaiting the publication of the White Paper on introduction of the single-tier pension. The White Paper should have been published in June 2012 but was delayed until January 2013. Increased clarity on the future of state pensions should help DWP plan for the future of the system.

**4.5** DWP is also planning to introduce Universal Credit in similar timescales to the single-tier pension. The pension service has set up a group to develop the 'future pensions service' and one of the risks that it has identified is that any delay in the single-tier pension will impact on the introduction of Universal Credit as the single-tier pension programme is interdependent with the Universal Credit programme.

**4.6** At the time of our audit, DWP's Corporate Information Technology Directorate's (CIT) roadmap planned that the service for existing state pensions will continue to be supported by the PSCS. DWP has continued to work on the roadmaps and there are now succession and decommissioning dates established for all of its legacy ICT. These are updated quarterly to reflect changing business priorities and specific targeted outcomes for legacy ICT as these develop. The scale, age and complexity of the PSCS means that only a small number of large ICT suppliers are able to support it. The complexity and importance of the system mean that it would be challenging for a small-or medium-sized company to support it. This will be an important consideration in determining the strategy for the system. In addition, Fujitsu, the owner of the operating system technology used by the PSCS, announced in 2007 that support for the current VME operating system product will end in 2020. If users of VME have not migrated their applications in this timeframe, Fujitsu plans to offer cloud based services. This will enable VME users to continue to run their legacy VME applications on modern infrastructure. DWP need to start planning what it intends to do with the PSCS now, including assessing options for retaining or replacing the system. The current position will not be sustainable in the longer term.

## Governance and architecture standards

Key finding	Our assessment	
	Now	Future
Overall governance arrangements for the PSCS are comprehensive but complex. The recent DWP transformation programme has introduced some confusion into governance arrangements.	3	3

**4.7** We found that the governance arrangements for the pension service are comprehensive but complex. DWP is committed to professional standards of service management that follow the Information Technology Infrastructure Library (ITIL) best practice. This ensures DWP has up -to-date service level agreements formalising relationships between business directorates, their ICT functions and ICT suppliers. Programme Boards oversee any major change programme. The State Pension Programme Board has documented risk management processes. With the exception of the lack of decommissioning strategies there are no legacy ICT risks on its risk log. There are two different approaches to change management of the system. The State Pension Programme strategic design authority considers major changes and the Operations Excellence Directorate (OED) manages minor changes.

**4.8** At the time of our fieldwork, the directorates were still getting to grips with DWP's recent reorganisation and individual staff were adjusting to the new roles and changes in responsibilities under the new structure. Some of those we interviewed were confused by the new governance arrangements. For example, we were told that there is some confusion between the OED and the State Pension Programme strategic design authority as to what distinguishes a major from a minor change.

**4.9** The ICT and business functions could work more closely together. The transformation programme led to a split in roles between directorates which blurred the lines of accountability and could lead to inaction at critical times in the future. For example, there was some confusion about the 'owner' of the pension service. Ownership is split between the data owner (the Head of the pension service) and the process owner in CIT.

## Implementation

Key finding	Our assessment	
	Now	Future
The PSCS provides a stable and robust service. Changes, even minor ones can take up to 18 months to implement. However major change, with the introduction of the CAM system, has allowed the pension service to provide a telephone service to its customers, but the PSCS will not be able to directly provide an online service.	3	3

**4.10** The system has been in use for 26 years. It is well documented and there are mature and formal arrangements around new releases to update the system. There are two releases each year that are well managed. However, even minor changes to the system take around 18 months to implement. This is due in part to the inherent nature of the technology and related development processes. In addition, the timescale to make changes is affected by funding limits in the business and the ability of the business to take on change.

**4.11** There is a priority list for each release. Changes required by legislation are prioritised first, then changes required by business strategy. Changes required by DWP employees operating the system have the lowest priority. We were told that legislation and strategy changes take most of the development hours available.

**4.12** The introduction of the Customer Account Management system (CAM) was successful. We found that there were no reported problems with its implementation. Cuts to the budget however, limited its roll-out to just the regional pension centres. It was not implemented in the National Pension Centre, which deals with more complex claims and uses the PSCS directly.

## Service management

Key finding	Our assessment	
	Now	Future
The system consistently processes and pays 12.8 million customers £1.6 billion a week on time. The system meets its availability targets but the business feels remote from decisions made about the legacy ICT system.	4	4

**4.13** The PSCS is stable and performs well. It processes and pays 12.8 million customers £1.6 billion a week on time. Our performance analysis shows, in Figure 7, that the PSCS met its availability target of 99.5 per cent or more of the expected time during 2010-11 and 2011-12, apart from November 2011.

**4.14** DWP has clear service definitions but service management relationships are complicated. The contractual relationship is held by CIT, which acts as the intelligent customer on behalf of the business. IT service desk and application management and support functions are provided by a number of third-party suppliers who are brought together through a single service integration and management function (SIAM). DWPs Corporate IT team act as the primary point of liaison between the business and SIAM to ensure optimum IT service delivery, and address issues where they arise.

**4.15** This means that there is no direct relationship between the business and contractor (in this case HP). There is no one person in CIT responsible for the PSCS and the relationship with the contractor. The PSCS is one of a number of systems managed by a team within CIT. We found that this arrangement makes the business feel remote from the contractor and unsure how much influence they may have on decisions about the system.

**4.16** CAM does have some performance issues, including periods of slow running. There are also many checks that DWP employees need to make with the various systems, to ensure that information is consistent on all systems and that it has been updated correctly. We found that DWP employees using CAM in the pensions centres we visited, relied on the information held in the PSCS as being correct.

## People

Key finding	Our assessment	
	Now	Future
DWP employees who use the PSCS are well trained and experienced. However, we found that DWP was concerned that skills and knowledge of the PSCS were being lost due to the age of the system. This gap will widen in the future if it is decided to retain the PSCS.	4	3

**4.17** There are approximately 6,000 DWP employees using the PSCS or CAM in the pension service business. The National Pension Centre and London Pension Centre work directly on the PSCS. Staff at these centres are experienced in using the PSCS. However, there is no help screen or current training manual. Staff have to rely on their own notes. New staff have to seek help from the more experienced people in the team if they require assistance. The other pensions centres use CAM as an interface to the PSCS. It provides a help screen and there is a training manual available.

**4.18** Training is provided to new DWP staff who are instructed on the use of the systems and on pension regulation in the classroom. Once the classroom training is completed, trainees are allowed to process claims on the 'live system'. At first they are supervised by coaches but after successfully completing a series of claims, they are assigned to a team in a pensions centre where they still have access to coaches and senior DWP employees using the systems in each team.

**4.19** The main concern about the PSCS was that the technical skills (in particular COBOL skills) and knowledge of the legacy ICT, both within CIT and their contractors are declining. DWP's plans, however, are limited and dependent on the ability to decommission other systems based on the same technology as PSCS to free up experienced staff in the short-term. In the long-term, there are no plans to address the skills shortage.

## Process

Key finding	Our assessment	
	Now	Future
The processes are mapped against a comprehensive service operating model. We found some weaknesses in the audit trail, the disaster recovery is not tested every year and DWP has decided not to accredit the system for government security standards (this decision is being reviewed in 2013).	3	3

**4.20** We found that there are comprehensive and well-documented service operating models that describe the function of each pension centre, with clear definitions of services and processes and links to technology, organisation, locations and roles. These models were developed during the organisational restructure to provide a clear view of how the business would operate.

**4.21** While the PSCS system supports the delivery of core state pension processes, we found some examples of business developed applications, enhancements and workarounds that were implemented to address the shortcomings of a legacy ICT, such as:

- The audit trail does not show any field level detail. For example, if the bank details of a particular record are changed there is no audit trail to show when and why this had been done. We found that DWP employees using the system and managers were well aware of these problems and weaknesses. There is currently some work being carried out to improve the audit trail process.
- Some calculations are undertaken on spread sheets due to a limitation in the PSCS and CAM process. This is for deferred pension calculation, where the deferred pension calculation is printed off and sent to the deferred pension team to check and process. CAM is currently being updated to make this process automatic. There are also some calculations for late payments of over a year that are made manually.
- Online claims are printed, scanned and manually entered into the system in the same way as paper applications. In addition, a DWP employee using the system in a pension centre cannot see the online application and is therefore unable to assist with online application enquiries.
- The PSCS has a notepad facility attached where notes can be made about a specific claim. Due to the longevity of the system, the notepad is full in some cases. As a result the user has to keep a separate printed log of the claim to make space for new information.

**4.22** DWP performed an internal risk assessment in line with government security standards in 2007. It took the decision that the cost of accrediting its legacy ICT to comply would be disproportionate to the risk. Therefore, the PSCS is not accredited to government security standards.<sup>14</sup> We were told that there are plans to undertake another assessment of legacy ICT in 2013. The objectives of the assessment will be to establish what has changed since the 2007 assessment and establish the residual risks.

**4.23** Disaster recovery testing for DWP legacy ICT is carried out on its Virtual Machine Environment (VME) mainframe computers on the ICT system which hosts three other systems in addition to the PSCS. The Customer Services Directorate within CIT owns the disaster recovery capability and performs recovery tests of the ICT system on an annual basis but selects only one of the four systems for recovery, meaning that the PSCS is potentially tested only once every four years.

## Technology

Key finding	Our assessment	
	Now	Future
The PSCS is robust and stable but there are some significant security issues. In addition, it will not support the government drive for online applications.	3	3

**4.24** The PSCS system is robust and stable. However, it has been in service for 26 years and DWP must decide on its future use. It currently holds the pension records of anyone of working age that will be eligible in the future to claim a state pension as well as the 12.8 million current pensioner records. Any decision made to replace it needs to take into account the risk of transferring these records. With the current government emphasis on 'digital by default' services, the PSCS is not capable of supporting online applications. This is because it processes data in batch mode, where jobs are set running to complete specific tasks. Such a mode of operation would be incompatible with a full digital service. A full digital service would, however, enable online end to end processes with systems that respond in real time.

**4.25** At the time of our audit we found that although CIT had developed a roadmap for its future technology strategy, it was still to address the issue of the loss of specialist skills to support legacy ICT in both DWP and by contractors. CIT are developing plans for reducing the risks of the loss of specialist skills. This includes in the short term drawing on the expertise of the contractor market, while developing an assessment of future ICT skills requirements. CIT also needs to decide how it will respond to Fujitsu's announcements made in 2007 on the future of VME after 2020.

<sup>14</sup> HM Government, *Security Policy Framework, Version 8, Mandatory requirement 8*, April 2012.

**4.26** The PSCS is structured to process pension claims by geographical areas.

Although the London Pension Centre is designated as the main processor of online claim, the other pension centres provide extra capacity if required. This means that DWP employees using the system need to be authorised to process a claim from outside the post-code area that their pension centre is authorised to process. These are known as Multiple Access Identifiers (MAIs). DWP internal audit has identified issues associated with MAIs on all DWP legacy ICT including the PSCS:

- There is no management information system to log those DWP employees using the system that have been granted authorisation and for how long it has been granted.
- The MAI cannot be linked to a specific DWP employee using the system (for example by identifying their staff number) therefore inappropriate use of the system by a DWP employee cannot be detected.

**4.27** If a DWP employee using the system moves too quickly from one dialogue box to another within the PSCS system they can sometimes be transferred to a different case that they are not dealing with. This problem is well understood by DWP employees using the system.



## Part Five

### The lessons learned from the impact of legacy ICT on the DWP's pension service

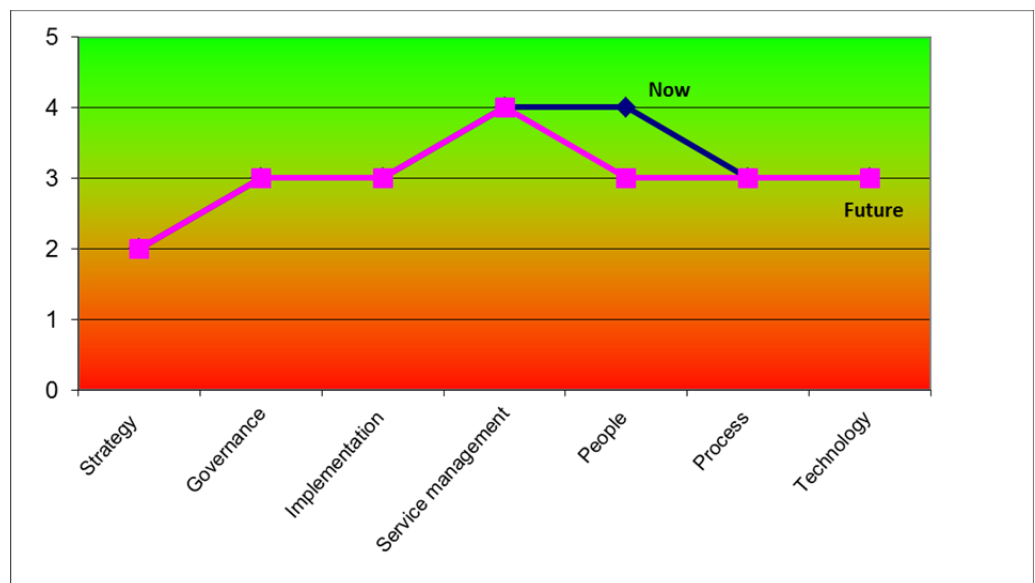
**5.1** In this final part of the report, we use the results from our service, financial and enterprise analyses to draw out the key lessons the Department for Work and Pensions (DWP) has learned from managing its legacy ICT within the pension service.

**5.2** This case study is an example of how legacy ICT can be successfully managed. It shows that the Pensions Strategy Computer System (PSCS) has performed well in the 26 years it has been in place. In the last two to three years DWP has increased the performance of the pension service without investing in new technologies. The case study also illustrates the problems faced by organisations with large complex systems, when policy decisions render existing technology obsolete.

**5.3** From our enterprise analysis and the scoring assessment we undertook, we believe that DWP will see little improvement in the next 12 to 18 months (**Figure 12**). This is due mainly to the scale of both the PSCS and DWP organisation. This, plus the uncertainty during the time of our fieldwork visit of the impact the introduction of the single-tier pension on the future use of the PSCS, will mean that any improvements will take longer than the 12 to 18 month timeframe of our assessment. In **Figure 13**, we outline the key lessons.

**Figure 12**

Our enterprise analysis performance scores point to little change in the next twelve to eighteen months.



Source: National Audit Office analysis

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**Figure 13****Lessons from the Pensions Strategy Computer System****Lessons**

**The need for a strategy and plan to replace large inter-related systems.**

**Commentary**

As large systems reach the end of their life due to changes in policy and business requirements, a strategy and plan need to be developed to ensure the continuation of the services run from these systems. The options, such as whether to retain the system or transfer existing data onto a new system need to be considered and costed. At the time of our fieldwork, DWP was waiting for certain policy decisions to be made, but the timeframe for implementing a new system is shortening and there is a danger that if a strategy is not developed, a new system for pension provision will not be installed in time.

**Access to key project and technical skills.**

As new technologies are introduced, and new skills and programming languages are required to run and maintain them, there are fewer people who are trained in, and have detailed knowledge of, the older technologies and programming languages. DWP acknowledges that the skills and expertise to run and maintain its older systems is in decline, both in its organisation and in its suppliers. Other government departments may be facing the same problem but there is no cross-government view of the skills shortage overall and how this can be addressed.

**Risk of complacency as the risks identified in audits are not addressed.**

It is easy for departments to become complacent if risks identified in audits and by staff that use the system do not materialise. Because the risks do not materialise they are not addressed and officials find it difficult to justify expenditure to make the necessary changes. But departments need to guard against potential failures and there are currently a number of security and authorisation risks to the PSCS known to DWP that need attention.

**Changes in customer expectations can make ICT no longer fit for purpose. Technology needs to be continually updated or it could be an obstacle to efficient and effective service delivery.**

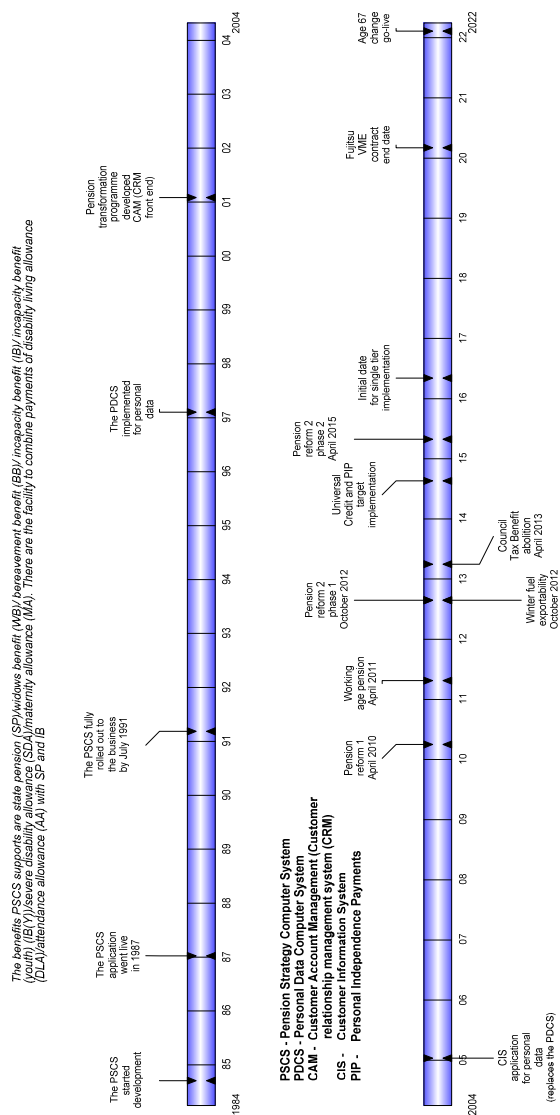
The current PSCS system does not meet the requirement of the Government Digital Strategy, which plans to move all transaction services online.

Source: National Audit Office analysis

# Appendix One

## The PSCS timeline

The key milestones in the history of the PSCS and the changes occurring in the state pension regime



Source: National Audit Office analysis of DWP data

# Appendix Two

## Methodology

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**This section describes the methodology we used for our fieldwork, which centred on the application of our business analysis toolkit. This consists of three elements: financial and quantitative analysis, analysis of the service model and application of our enterprise analysis framework. (A full description of our enterprise analysis framework can be found in Appendix Three). The study team was composed of NAO staff supported by a secondee from Risk Solutions who led the financial analysis.**

### **Method**

Financial and quantitative analyses including:

- Interviews with financial and operational staff
- Analysis of investment and spend data
- Analysis of service performance and service reporting data

Analysis of service model including:

- Semi-structured interviews with service and contract management staff, technical stakeholders and representatives from suppliers
- Document review of ICT and contracting strategies, reviews of the ICT estate, technical descriptions and publicly available service information

Application of our enterprise analysis framework including:

- A workshop of key stakeholders where they self-assessed and scored themselves against the components of the framework
  - Semi-structured interviews with corporate service leaders, senior technical staff, system users drawn from DWP staff and representatives from the suppliers
  - Data and document review that encompassed key contracts, technical and design documentation, management information, minutes from service and risk forums, risk registers and service impacting incidents
  - A 'wash up' workshop where the results of National Audit Office fieldwork findings were played back to senior stakeholders and compared with self-assessment
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# Appendix Three

## Enterprise analysis framework

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### Good practice in the management of legacy ICT

#### **Strategy and business model**

**Strategy and business model** There is a clear strategy in place for the service, which the organisation regularly reviews and updates to reflect changes in its business environment and/or exploit new technologies.

**Business case and funding** Business case(s) for replacement reflect good practice (e.g. *HM Treasury Green Book*), are regularly reviewed and challenged, and opportunities are exploited and managed.

**On-going costs** Costs of the services are fully understood and managed against a budget and prioritised business demands. Costs are challenged and optimised, and the value of asset/investments is fully exploited.

#### **Governance, architecture and standards**

**Technical governance** Technical governance arrangements provide strong and effective oversight and direction on the ICT portfolio and the lifecycle of the legacy system. Regular meetings take place between business and IT to identify and prioritise changes in business requirements and legacy ICT capabilities, risks and issues, opportunities and threats.

**Enterprise architecture** There are clear links and strong alignment between the IT strategy and business strategy, and the legacy system is supported by a documented comprehensive technical architecture.

**Data quality and assurance** A clear and consistent strategy for data standards and architecture ensures a coordinated approach to continually improve the quality of information provided by the legacy system. The sources of data are well understood and business users have trust in the information.

**Risk management** Risk management processes ensure that the business risk appetite is documented and legacy ICT and information assurance related risks are identified and regularly reviewed, documented and managed at a sufficiently senior level, with mitigating arrangements agreed. Key stakeholders have clear visibility of the level of risk exposure.

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<b>Implementation</b>	<p><b>Lifecycle management</b> The system is readily adaptable to changing business needs and evidence of structured development and enhancement throughout its life can be seen. Testing plans and procedures are designed in partnership with business, release management processes are in place and system documentation is current, maintained and available. Software media and licence codes are available and regularly confirmed as operational.</p> <p><b>Decommissioning legacy</b> All legacy systems have been identified and effective transition arrangements, accountabilities and responsibilities have been agreed. All legacy data have been identified, cleansed and mapped to the new solution and decommissioning costs have been identified.</p> <p><b>Retaining legacy</b> There is a legacy systems strategy in place that identifies what the business defines as legacy, the contract lifetimes and the anticipated technology lifetime of each architecture component, service and application, and the factors to be considered in making retirement/retain decisions.</p>
<b>Service management</b>	<p><b>Service performance</b> There is clear definition of the service that is continually reviewed and improved in partnership with the end-users and/or customers, and service delivery performance is regularly compared with target performance and good practice benchmarks. The dependency of the legacy system on service performance is known, with risks and issues managed effectively.</p> <p><b>Management of supplier services</b> Outsourced services are actively managed and regularly market tested to ensure value for money, the relationship is collaborative and information about future changes to the legacy system or the service are discussed between both parties.</p> <p><b>Change management</b> An agreed multi-user forum exists for engaging in high-level strategy, performance management and service evolution discussions, which inputs to management decisions about future direction and investment. There is a tailored organisation wide training programme with clear success criteria being monitored.</p>
<b>People</b>	<p><b>Internal workforce</b> The staff responsible for the on-going operation of the legacy system have the necessary skills and undertake training to perform their role. Training covers awareness of developments in the market and relevant associated technologies. Recruitment, retention and development activities are aligned with the needs of the service and its customers. Succession plans are in place for all key roles.</p> <p><b>Supplier capability</b> Reliance on service providers and contractors involved in the on-going operation of the legacy system is known and actively managed. There are regular reviews of the ability of service providers to continue to support the legacy system throughout its projected lifetime, and there are agreed solution roadmaps in place.</p>

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<b>Process</b>	<p><b>Business processes</b> Development or improvement of business processes is not hindered by the capabilities of the legacy system, and/or new processes required by the business are assessed against the capabilities of the legacy system and failure to meet new requirements triggers a system review.</p> <p><b>Technical processes</b> Data management processes are in place and owned by the business and are applied to the legacy system. Backup and recovery capability of the legacy system is regularly reviewed and tested, and adherence to agreed recovery objectives is actively measured. Access management controls are implemented and monitored with exception event procedures in place.</p> <p><b>Security processes</b> The legacy ICT system meets government security standards (accreditation) in a cost-effective manner and its security controls ensure the confidentiality, availability and integrity of data. External security risk assessments are carried out regularly. No bespoke security systems or processes are required.</p>
<b>Technology</b>	<p><b>Applications</b> The legacy ICT system fully integrates with the wider ICT environment using standard protocols or common application programme interfaces. Software versions are current and fully supported with plans in place for future upgrade.</p> <p><b>Performance.</b> The availability and performance of the legacy system is captured as part of service performance measurement.</p> <p><b>Infrastructure</b> The solution is sufficiently scalable to allow the addition or removal of components to meet service demand or enhanced to meet changing business needs. A regular patch cycle schedule is in place to apply functional and security patches systematically. Test facilities exist that replicate the production environment exist or can easily be created and removed as required.</p>

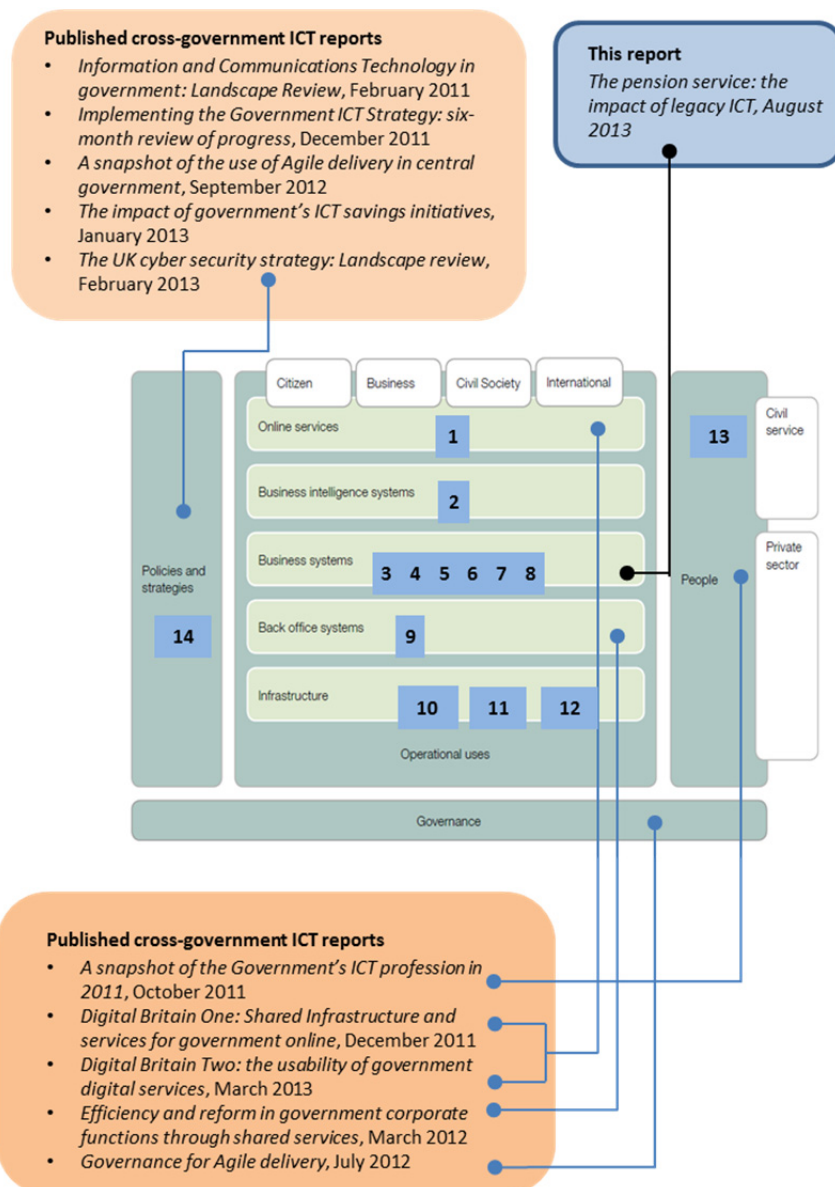
Source: National Audit Office enterprise analysis toolkit

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# Appendix Four

## Published client reports focusing on ICT



### NOTES

1. For published client reports focused on ICT see next page

Source: National Audit Office

## **Published client reports, focused on ICT**

### **Online services**

- 1 HM Revenue & Customs: *The expansion of online filing of tax returns*, November 2011.

### **Business Intelligence systems**

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