Australian Government

Department of Finance

Audit of Australian Government ICT Public Report

December 2014

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Executive summary

Introduction

The Australian Government's *e-Government and the Digital Economy* policy agenda aims to harness the potential of information and communication technologies (ICT) to lift productivity and economic competitiveness. A component of this agenda is to use technology more effectively in the public sector, transforming not only the way that the public sector operates but how individuals, families and businesses interact with government departments and agencies.

To support this aim, the Government committed to an audit of ICT investment across Australian Government departments and agencies, focusing on spending, capital expenditure (capex) and outcomes achieved—*Audit of Australian Government ICT* (the Audit). The Terms of Reference are summarised at **Annexure A**.

This report documents the results of the Audit. The recommendations of this report will inform future ICT investments.

Audit objectives

- To assess the extent to which the Government's investment in ICT, over the last three years (2010-11, 2011-12 and 2012-13), has achieved value for money.
- To make recommendations for improvement, with the aim of optimising outcomes from existing and future investments.

Methodology

The Audit focused on business-as-usual (BAU) expenditure and the progress and outcomes of major ICT-enabled projects. The discussion and findings of the Audit are presented in two parts reflecting this dual focus.

For the purposes of the Audit:

- **BAU activities** are defined as all activities outside projects—$10.8 billion[1] of technology expenditure across the APS over 2010-11 to 2012-13 was for BAU activities (around 68 per cent of ICT expenditure).

- **Projects** are defined as ICT expenditure that relates to significantly extending or enhancing an organisation's current ICT capabilities—$5.1 billion[2] of APS expenditure on technology over the same period was for project investment (32 per cent).

The Audit leveraged existing information sources such as ICT Benchmarking (for BAU spending), ICT Two Pass Review Process (for major projects) and ICT procurement data, all held by the Department of Finance (Finance). Supplementary data was also considered. All ICT-related spending and investment over the last three years, by

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[1] Department of Finance annual benchmarking collection.
[2] Ibid.

entities previously subject to the *Financial Management and Accountability Act 1997* (FMA Act), was within scope.

Finance contracted an eminent private sector consultant to conduct a desk review of ICT Benchmarking results and other relevant data holdings, and to identify options for Government to derive better value for money from its ICT BAU spending.

The Audit also involved a review of the status and outcomes of 31 major ICT-enabled projects underway during the past three years and that met the ICT Two Pass Review process criteria. These projects included 23 in-flight projects (that is, projects underway at the time of the Audit) and eight completed projects.

Key findings

Findings for business-as-usual investment

1. The value for money from BAU investment across the APS as a whole is reasonable, but there is room for further improvement.

2. The absolute level (dollar value) of Australian Public Service (APS) BAU investments has remained steady over the last four years, despite the introduction of new systems and technologies that require additional support and maintenance. This reflects the APS's ability to absorb the support demand for new projects, online services and technologies without increasing costs.

3. APS expenditure on ICT BAU as a proportion of total ICT investment is reasonable across the APS and in line with government benchmarks at 65-70 per cent. This means 30-35 per cent of ICT investment is available for new projects, innovation and capability development.

4. Unit costs of commodity technologies show that smaller agencies pay substantially higher total costs of ownership for commodity ICT services than do larger agencies. This is in spite of the widespread use of whole-of-government purchasing agreements giving small agencies access to lower input costs. This is a key argument for further consolidation of activities to achieve efficiencies of scale.

5. There are indications that ICT management costs are high relative to the private sector, representing an opportunity for improvement. Around 13 per cent of all ICT costs are 'IT management', typically covering the executive team and support functions. While these functions are valuable, support organisations can build up low value activities; private sector comparisons indicate a support overhead of less than 10 per cent of ICT costs would be more appropriate.

6. The proportion of ICT investments on BAU relative to new project work is much higher in infrastructure (82 per cent) than for applications. Across the APS, 52 per cent of applications-related spend is BAU, so 48 per cent is related to innovation and new capability development. This is important as new capabilities for key areas such as customer service, processing efficiency, digital transformation and information analysis typically involve a high degree of applications-related work.

7. The APS's adoption of digital channels has seen strong growth in online and mobile services. Over the period of this analysis, the APS has substantially increased the range and penetration of online services to customers, all of which are supported by BAU investment.

Findings for major ICT projects

8. The analysis indicates that of the 31 projects reviewed:

   o eleven (48 per cent) of the in-flight projects (with a total value in the order of $2.2 billion) appear likely to deliver their intended benefits, and are broadly on time and budget

   o nine (39 per cent) of the in-flight projects (with a total value in the order of $1.2 billion) are tracking less clearly toward this outcome with three (13 per cent) (with a total value in the order of $341 million) at risk

   o seven (88 per cent) of the completed projects (with a total value in the order of $423 million) appear likely to deliver their intended benefits, and were broadly on time and budget

   o one (13 per cent) of the completed projects (with a total value in the order of $23.7 million) was rated 'red' (that is, did not achieve its intended benefits, was late and over budget).

9. Projects generally have appropriate governance and risk management mechanisms in place.

10. There is scope for improvement in monitoring and tracking benefits, particularly during and after project implementation.

11. Materialisation of workforce risk (workforce issues such as skills shortages that could pose risk to project delivery) is frequent. Agencies need to be more proactive in resource management, and to take a more critical approach when analysing and treating workforce risk. Managing workforce risk at a whole-of-government level, as well as at agency level, would likely lead to better project outcomes.

12. Optimism bias (the demonstrated systematic tendency for appraisers to be over-optimistic about key project parameters), both in the planning stages and during project implementation, is widespread. More realistic assessment of project complexity and progress would likely lead to better outcomes.

13. Initiatives related to major projects, outlined in the *e-Government and the Digital Economy* policy (refer body of the report), have the potential to address many of the systemic issues identified in this review, and to improve value for money achieved through the Government's investment in major ICT-enabled change programmes generally.

14. The *e-Government and the Digital Economy* policy includes a commitment to create a dashboard publishing key metrics on Government ICT performance and progress on major new investments. An appropriate level of independent assurance of agency reporting on project progress and outcomes will be required, to ensure that an accurate description of project status, using consistent criteria, is used to populate the dashboard and to report to Government.

15. A register of key baseline information for each project would provide a baseline for accountability and reporting to Government.

Summary Recommendations

Recommendations for business-as-usual investment

While the value for money from ICT BAU investment appears reasonable, Finance makes the following recommendations to improve the outcomes from BAU investment:

Recommendation 1: **Improve data capture, collection and transparency to support better decision making**

This recommendation aligns with work already underway as part of the *Smarter ICT Investment* component of the *e-Government and the Digital Economy* policy. This work includes updating the ICT data collection methodology across the APS to improve transparency and undertaking ongoing periodic collection, reporting and analysis of data on ICT costs, assets, performance, utilisation and availability.

1.1   Strengthen government reporting through an improved common data taxonomy underpinned by authority for Finance to collect ICT-related performance data from agencies:

- provide greater cost transparency of ICT BAU services by associating them with applications and platforms;

- develop a model to classify agencies' ICT profile to determine their intensity, interactions, service volumes and maturity of ICT capability to support clustering of like agencies and identify opportunities for shared services and contestability arrangements to enable better government services; and

- divide technologies into categories that describe how specific they are to the mission of the agency to discriminate between ICT utility services (for example, end user computing, email, server processing and storage), common business support applications, and mission-specific applications.

Recommendation 2: **Rationalise services and leverage economies of scale**

These recommendations align with work already underway as part of the *Smarter ICT Investment* component of the *e-Government and the Digital Economy* policy and the corporate and common services proposal being developed under the *Transforming and Modernising Government* work. This work aims to simplify and standardise Government ICT by eliminating duplicated and fragmented activities across agencies. It will achieve this by requiring the use of standard shared or cloud services where a minimum efficient scale (MES) is not met. This is consistent with *Smaller and More Rational Government*.

2.1   Assess the potential to migrate utility ICT services to private cloud service providers, or large-scale agencies with the potential to offer a whole of government cloud service at a competitive cost point.

2.2   Assess the potential for business support applications to be rationalised and standardised across the APS.

2.3   Agencies providing ICT services to other agencies work with the Shared Services Support Unit to ensure a consistent whole-of-government approach to develop customer focused service management disciplines. This includes: clear accountability, working to agreed service level standards, regular transparent price benchmarking and customer service reporting.

Recommendation 3: **Improve IT management**

3.1   Agencies to place greater scrutiny on the costs and value delivered from ICT support areas (counted as IT management).

3.2   Agencies ICT areas to report annually to their respective business owners the cost of operating and maintaining the systems that support their function, with a view to reducing costs and improving services.

Recommendations for major ICT projects

Based on the review of the progress and outcomes of major ICT-enabled projects, Finance makes the following recommendations to improve the outcomes from investment in ICT-enabled change initiatives.

Recommendation 4: Improve reporting for major ICT projects

This recommendation aligns with work already underway as part of the *Smarter ICT Investment* component of the *e-Government and the Digital Economy* policy to increase accountability and transparency, including for major projects. This work includes developing an ICT Project Dashboard publishing key metrics on Government ICT performance and progress on major new investments.

4.1   Agencies to provide regular reports for government on the progress of major ICT projects.

4.2   Finance to include information on the progress and outlook of major ICT projects in its ICT investment reports (Recommendation 5.1), so that appropriate interventions can be made if required.

4.3   Agencies to complete Post Implementation Reviews for all major projects and provide the reviews to Finance.

4.4   Agencies to report four-year agency ICT investment intentions to Finance.

Recommendation 5: Improve ICT investment decision support

5.1   Finance to provide strategic advice to Cabinet on major ICT project proposals from a whole-of-government perspective and regular consolidated ICT investment reports.

5.2   All major ICT project proposals to consider options for a modular approach to design and implementation, including stage-based approval for releasing funds.

Introduction

The Australian Government's *e-Government and the Digital Economy* policy articulates the vision for more effective use of information and communication technology (ICT) in Australian Public Service (APS) departments and agencies.

Government use of ICT: underpins the delivery of services; supports government operations; enables government to engage with citizens, the community and businesses; and contributes to national productivity.

ICT expenditure is a significant component of total Government departmental expenditure[3] (**Figure 1**), averaging $5.4 billion or 9 per cent of total Government departmental expenditure since 2008-09.

Annual variations in ICT-enabled expenditure are typically the result of major policy initiatives such as the Personally Controlled Electronic Health Record and Service Delivery Reform programmes.

FIGURE 1: ICT EXPENDITURE AND TOTAL GOVERNMENT DEPARTMENTAL EXPENDITURE
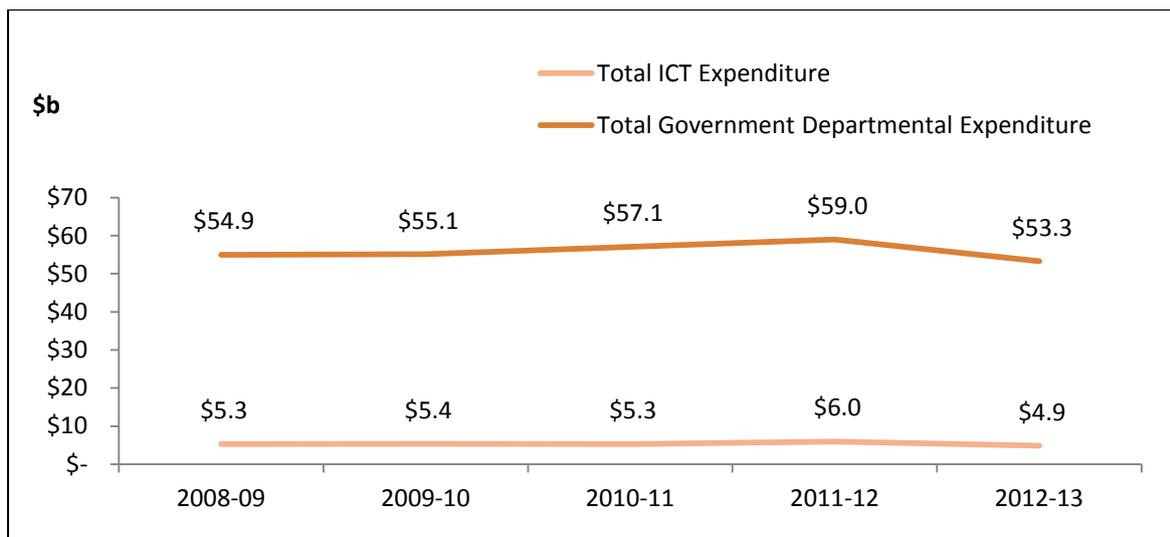

Source: Cross Agency ICT Benchmark 2009-10 to 2012-13

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[3] Departmental expenditure is expenditure that agency chief executive officers control directly as opposed to administered funding, which is managed on behalf of the Commonwealth (for example, welfare payments).

Application software accounts for nearly 40 per cent of ICT expenditure, as shown in **Figure 2**.

FIGURE 2: EXPENDITURE BY SERVICE TOWER
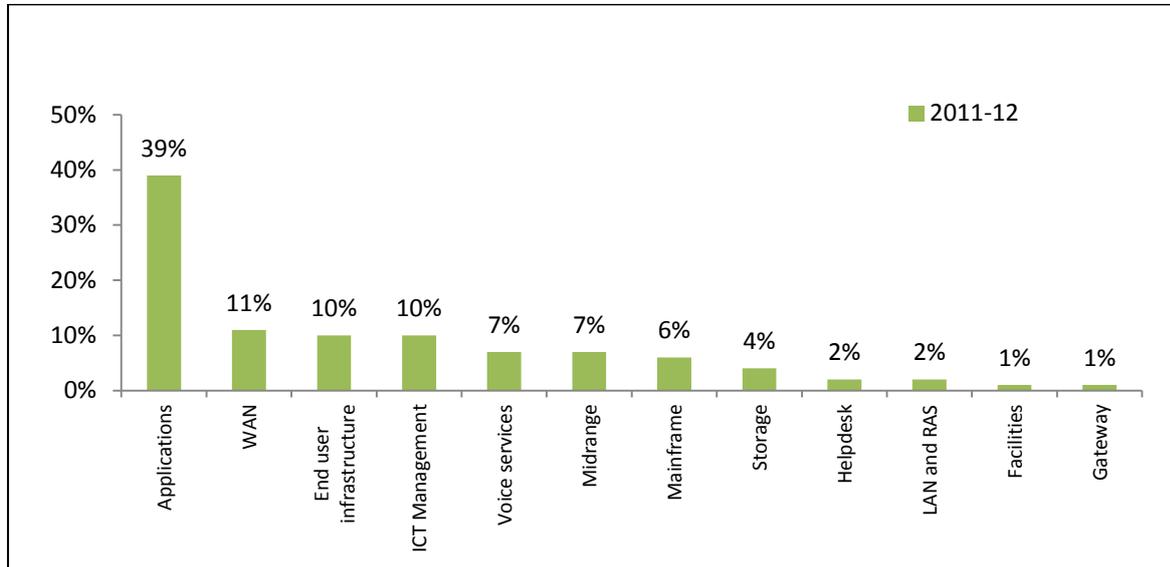
Source: Cross Agency ICT Benchmark 2011-12

The 2008 recommendations of Sir Peter Gershon's independent review of the *Australian Government's use of Information and Communication Technology* supported a programme of ICT reform which has led to improvements in ICT operational efficiency.

Such focus has resulted in:

- improved agency capability to manage large ICT-enabled programmes
- a focus on ICT sustainability and realisation of $1 billion in efficiencies from agency ICT business-as-usual operations
- accelerating a coordinated, whole-of-government approach to data centres, avoiding $1 billion in costs over the next 10 to 15 years
- coordinated ICT procurement and associated efficiencies in high volume, high cost areas such as Microsoft licensing, telecommunications, desktops and data centres (including an estimated cost avoidance of some $91 million from coordinated ICT procurements in Software)
- better collection and use of information on agency ICT costs.

However, there has also been a general downturn in expenditure on critical back-end systems, primarily applications infrastructure.

The 2010 *Independent Review of the ICT Reform Programme*[4] found that:

> ...very substantial implementation effort has positioned the
> Government for the next phase in the evolution of ICT policy and
> practice...The challenge now is to exploit that effort to enable
> Government to deliver different and better services and to engage more
> closely with its citizens.

The Government's *e-Government and the Digital Economy* policy agenda aims to further improve use of technology in the public sector. To support this aim, the Government committed to an audit of ICT investment across Australian Government departments and agencies, focusing on spending, capital expenditure (capex) and outcomes achieved.

This report documents the results of the ICT investment audit. The recommendations of this report will inform future ICT investments.

The Audit's objectives are to:

- assess the extent to which the Government's investment in ICT, over the last three years (2010-11, 2011-12 and 2012-13), has achieved value for money.
- make recommendations for improvement, with the aim of optimising outcomes from existing and future investments.

Every organisation that has a dependency on information and communications technologies inevitably has two principal objectives. These objectives have informed the structure of the Audit.

The first objective is for the existing technology environment to operate smoothly and without 'hiccups'. The technology environment is likely to underpin critical customer services, transaction processing, information analysis, payments and supporting an internal workforce.

The second objective is to develop new technology-enabled capabilities to continue to develop and evolve the organisation, in the case of the APS, increasing the services delivered by government and lowering the costs to serve.

These two objectives lead to two broad types of ICT investment, characterised within the APS as 'business-as-usual' and 'new projects'.

The report is structured so that business-as-usual (BAU) expenditure (expenditure that supports running the ICT environment without attempting major change) and project expenditure (changing the ICT environment to deliver new or improved business outcomes) are presented separately. This is because, for the purposes of the Audit, each expenditure type has specific sources of evidence, and each required a specific methodology.

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[4] www.finance.gov.au/publications/review-implementation-ict-reform-program/docs/Review-of-ICT-Reform-Program.pdf

For both BAU and project expenditure, the report will define the expenditure, describe the Audit methodology and then present discussion and analysis. The report will provide a series of recommendations relevant to each.

The Audit was conducted against a backdrop of supporting analysis and other research material, **Annexure B**.

Business-as-usual investment report

BAU investment is typically taken to include the following categories of investment:

- running costs, such as paying for the purchase or leasing of hardware, the staff required to operate that hardware, software licenses, electricity, accommodation for data centres and computer rooms. These costs may also be directed through an outsourcer who owns and operates the equipment and software on the agencies behalf

- external costs such as the costs of operating a telecommunications network

- the costs of support staff to maintain and upgrade hardware and restore the functionality of business applications software when it fails for any reason

- critical support teams such as ICT security

- the work of running an ICT organisation, including the ICT executive team, administrative support, any business support services such as finance, HR, learning and development, ICT procurement, planning, enterprise architecture and a project management office (note that not all agencies have all of these teams and some may have very small business support teams).

Despite the apparent simplicity of the distinction between BAU and new project work, the boundaries between these two classes of investment is often not clear. For example, upgrading one computer desktop is a BAU activity, but upgrading all the desktops in an organisation requires substantial coordination and funding and will almost certainly be managed as a project.

BAU work is more commonly defined within the APS as simply all that work which is not otherwise categorised as a project. This may include mundane (although critical) operating and support tasks as described above, but it may also include small but valuable tasks that enhance business capability, use of information and improve customer service, but that are simply not large enough to warrant being managed as a project.

We note that the APS's adoption of digital channels has seen strong growth in online and mobile services. In 2012-13 hundreds of millions of customer transactions were conducted electronically across the APS, with strong year on year growth and many new services being offered such as mobile applications. These services are all underpinned by BAU investments to maintain and operate them to the high standards now expected by our community.

Methodology

The BAU analysis is largely based on Finance's ICT benchmark survey data. The survey has been conducted annually since 2008 and provides a like-for-like database of the ICT investments made by the bulk of the APS. The survey has continued to grow in sophistication but remains somewhat high level.

Finance contracted an eminent private sector consultant to conduct a desk review of ICT Benchmarking results and other relevant data holdings, and to identify options for Government to derive better value for money from its ICT BAU spending.

Throughout this review, ICT investment is considered as the aggregate of operating and capital expenditure, or alternatively the cash view of outlays. The only exception to this practice is when considering the unit cost of commodity ICT items (such as desktops and storage), where inclusion of capital investments would inflate the costs in years where substantial investments have been made. In these cases, we use operating investment plus depreciation of previous capital outlays as providing a better approximation of the recurring cost of ownership of a particular technology platform.

Due to resource constraints this analysis is necessarily high level. The data sources were limited to those already collected by Finance, supported by a consultant's experience with ICT across the APS and industry benchmarks.

For the BAU component of the Audit, we have not sought input from individual agencies and have avoided making assessments about the performance of individual agencies.

Cohort definitions

The report uses the following cohort definitions, in common with the 2012-13 ICT benchmarks:

- 'Defence' agencies include the Department of Defence and the Attorney General's department

- 'Large' agencies are defined as those agencies that make up the top 85 per cent of ICT expenditure (above $40 million in ICT expenditure)

- 'Medium' agencies are defined as those agencies that make up between 85 per cent and 95 per cent (10 per cent) of ICT expenditure (between $40 million and $11 million in ICT expenditure)

- 'Small' agencies are defined as those agencies that make up between 95 per cent and 99 per cent (four per cent) of ICT expenditure (between $11 million and $2.5 million in ICT expenditure).

Please note that 'Small' agencies provide a subset of data required for larger agencies; this limits the analysis that can be performed and so small agencies feature only sporadically in this review.

Other analysis published by Finance uses the cohort of 'micro' agencies—those having an annual ICT spend of less than $2.5million. These agencies do not collect data on BAU investments and so are not included in this analysis.

The use of averages

This analysis makes use of averages to illustrate central tendency and trends. In many cases, it will not be possible for the reader to validate averages from the charts as they are based on the detailed data and then aggregated up for reporting.

Discussion and analysis

ICT Investment and BAU in the APS

In 2012-13, the 97 APS agencies surveyed by Finance made total ICT investments of around $5 billion. Of the $5 billion, 70 per cent or $3.5 billion is classified as BAU, see **Figure 3.**

FIGURE 3: BREAKUP OF TOTAL ICT INVESTMENT IN THE APS

New projects
$1.5 billion

BAU $3.5
billion
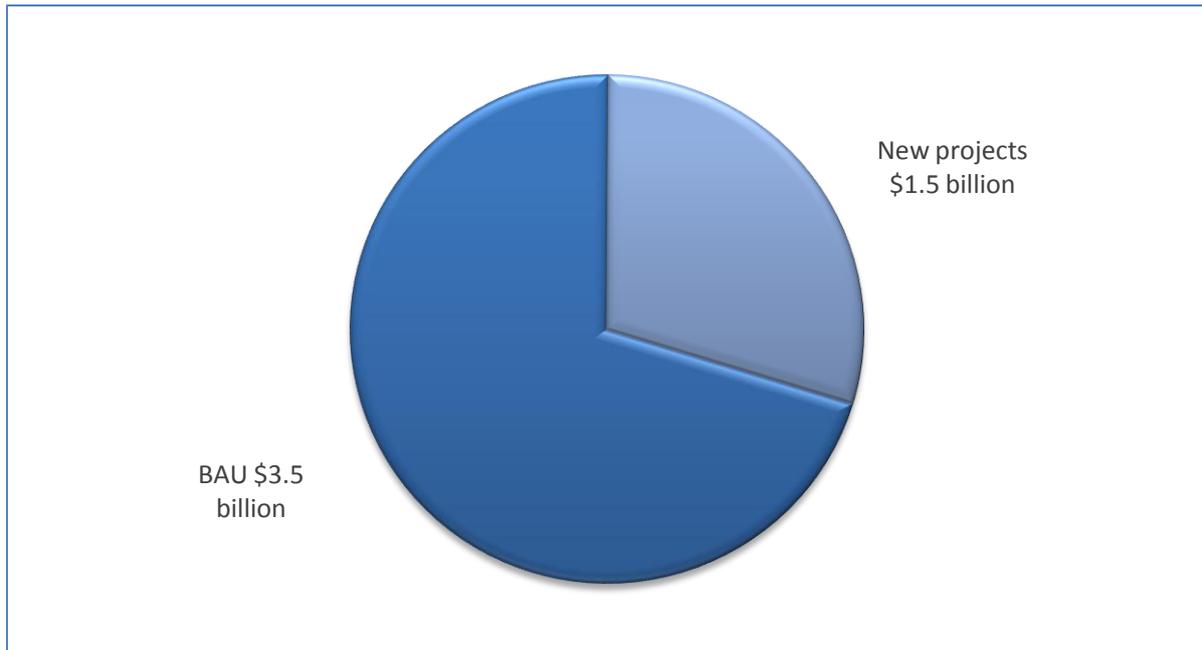
Source: Cross Agency ICT Benchmark 2012-13. Figures include operating and capital investments

The relative level of ICT investment between agencies is strongly dependent on their role—strongly operational agencies such as Department of Human Service (DHS), the Australian Taxation Office (ATO), Australian Customs and Border Protection Service and Defence will naturally be required to make larger ICT investments than policy-based agencies. The scale and scope of overall ICT directly flows into the BAU investment, but this also strongly dependent on the complexity of the technical environments.

In comparing the level of ICT BAU in an organisation as a percentage of the total ICT investment, it is important to recognise that large new project investments initially reduce the proportion of BAU, but this tends to increase subsequently as the new project moves into a support phase.

The level of spending on ICT BAU, in absolute terms and inflation adjusted, has remained level and even reduced slightly over the last four years (**Figure 4**).
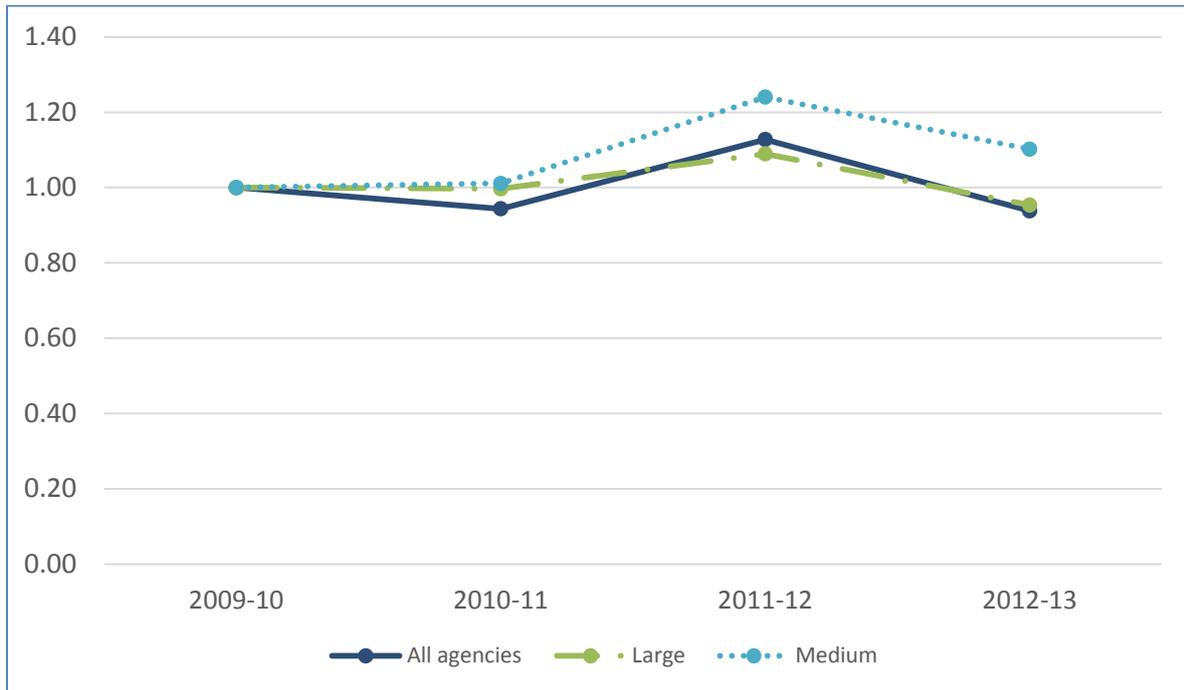
Source: Cross Agency ICT Benchmark 2009-10 to 2012-13
BAU spend is shown relative to the 2009-10 level in absolute dollar terms, adjusted for inflation

This means that, even with the introduction of new systems, online services and technology upgrades, the agencies have been able to maintain the level of investment on support and maintenance. In practice, this level of investment is likely to be somewhat due to reducing costs of new technologies (new generation servers, storage etc.), offset by higher costs of support for new systems being introduced.

Over the period of this analysis, the APS has substantially increased the range and penetration of online services to customers, all of which are supported by BAU investment.

It is interesting to examine the importance of BAU investments in different ICT domains (**Figure 5**). Higher relative BAU investments signify a focus on support and maintenance, while lower relative BAU investments signify a greater focus on innovation and new capability developments. It is therefore no surprise to see that infrastructure[5] investments have a high relative BAU spend, while applications investment is lower.

[5] Infrastructure is used here as a consolidated view of the infrastructure technology towers; Mainframe, midrange computing, storage, wide area networks, internet gateway, local area network (LAN) and remote access services, end user infrastructure including desktop and printing, voice services, helpdesk

FIGURE 5: RELATIVE LEVELS OF BAU SPEND IN TECHNOLOGY DOMAINS
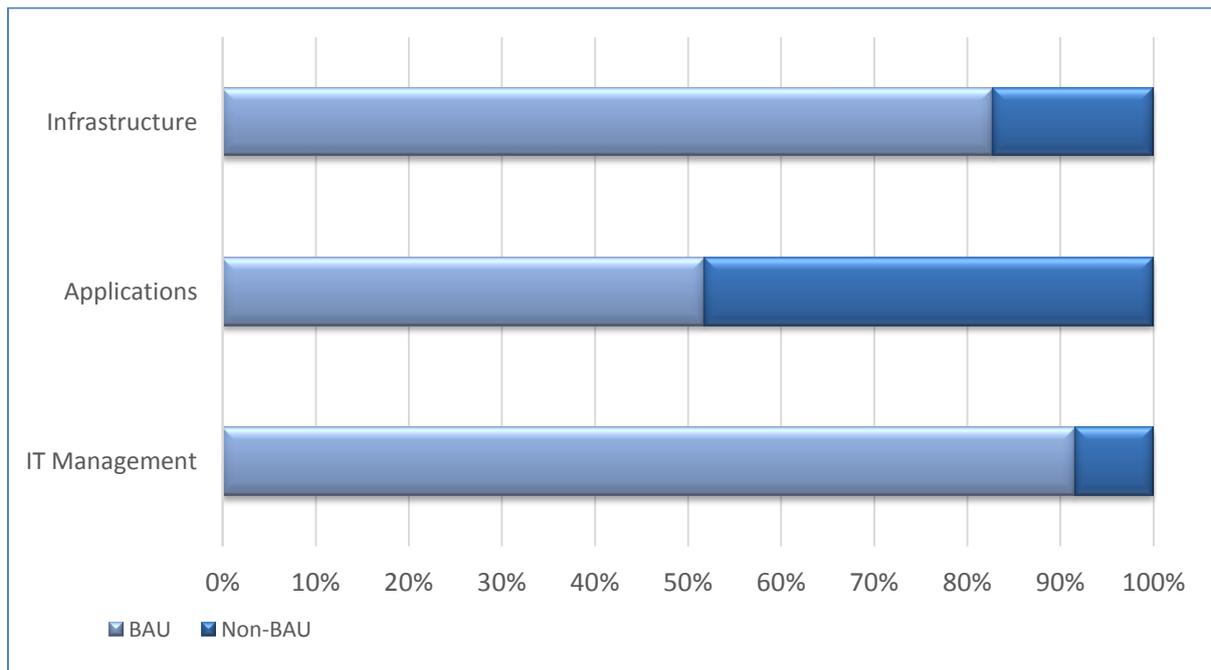
Source: Cross Agency ICT Benchmark 2012-13
Note: graph shows the proportion of BAU and non-BAU investments relative to total ICT investments (operating and capital) for 2012-13

In the infrastructure domain, non-BAU investments are often associated with upgrades of hardware and software and adding new capacity to support business growth and new capabilities. In the applications area, non-BAU typically reflects new projects that provide new or improved services for customers, digital transformation of services, greater efficiencies for internal operations and and/or improved use of information. IT management investments are discussed later in this analysis.

The role of outsourcing

Benchmark survey data do not allow for a breakdown of the use of outsourcers for BAU alone, but some general observations can be made that are relevant to a discussion of the value delivered from ICT BAU investments.

Figure 6 shows the proportion of all ICT investment (opex, operating expenses and capex, capital expenses) that goes to outsourcers. Overall, this is fairly substantial—across the APS 26.5 per cent of all ICT investment is delivered by outsourcers. However, only a small proportion of this, 1.5 per cent of total ICT investment, is outsourced to other APS agencies. The proportion delivered by other agencies is substantially greater in medium and small agencies.

These results reflect agencies' search for greater value—either by leveraging the capabilities and scale of commercial outsourcers, and/or by using larger agencies to achieve the same objective.
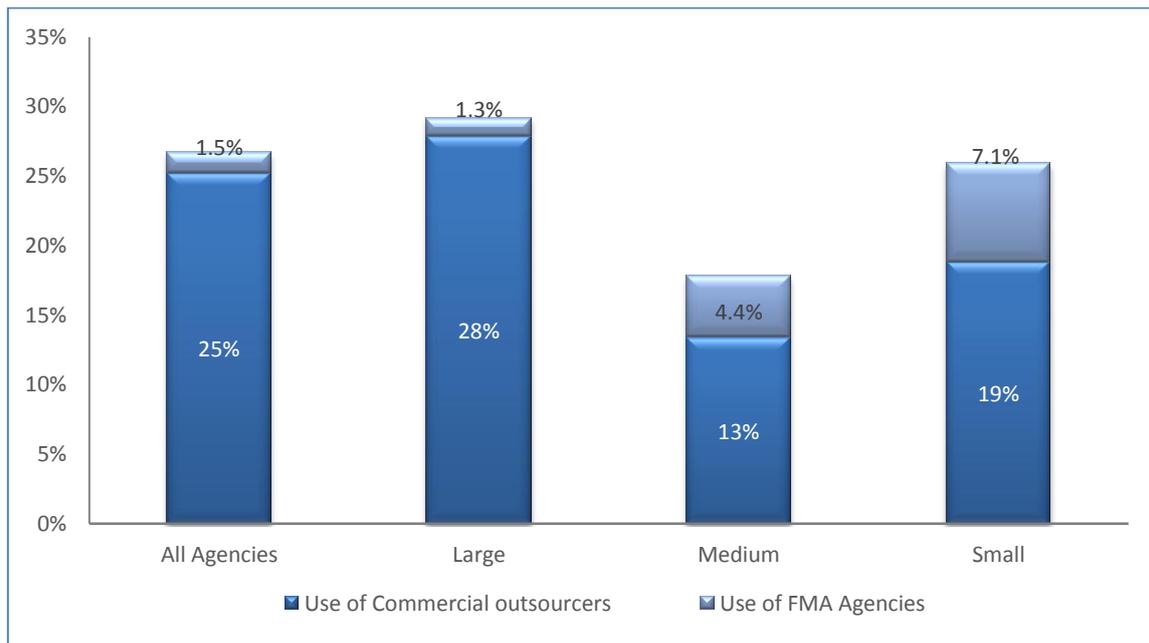
Source: Cross Agency ICT Benchmark 2012-13.
Note: The bars and figures show the percentage of total ICT investments (operating and capital) outsourced to commercial providers and other APS agencies in 2012-13. Data includes BAU and non-BAU

Analysis of agencies' BAU investment

This section includes the agency data underlying the general observations discussed above. They include:

- **Figure 7 and 8**: BAU investments as a percentage of total ICT Investment (operating and capital) for large and medium agencies

- **Figure 9:** BAU investments as a percentage of total infrastructure investment (operating and capital) for large agencies. Infrastructure is used here as a consolidated view of the infrastructure technology towers; Mainframe, midrange computing, storage, wide area networks, internet gateway, local area network (LAN) and remote access services, end user infrastructure including desktop and printing, voice services, helpdesk and ICT facilities (such as data centres), and

- **Figure 10:** BAU investments as a percentage of total applications investment (operating and capital) for large agencies.

FIGURE 7: TOTAL ICT INVESTMENT AND THE PROPORTION AS BAU – LARGE AGENCIES
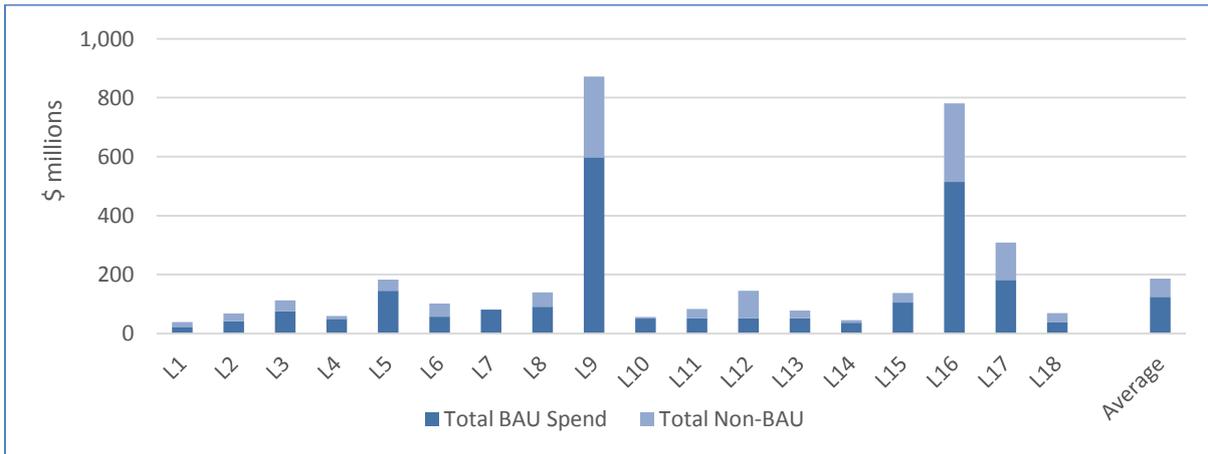
Source: Cross Agency ICT Benchmark 2012-13
Note: The bars show total ICT investment for 2012-13 (operating and capital). The percentage figures shown the percentage of the total investment treated as BAU in that year

FIGURE 8: TOTAL ICT INVESTMENT AND THE PROPORTION AS BAU – MEDIUM AGENCIES
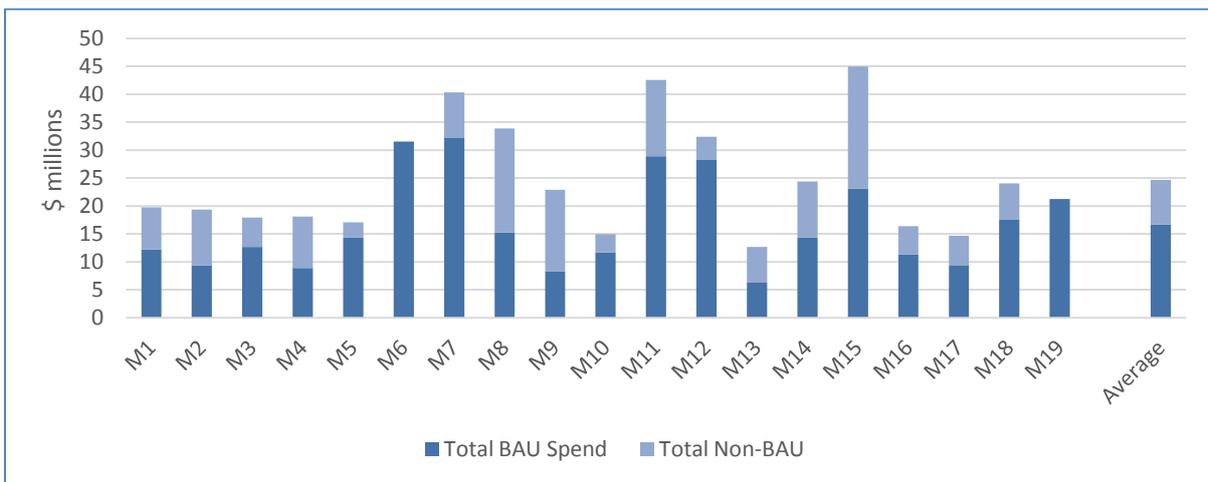
Source: Cross Agency ICT Benchmark 2012-13
Note: The bars show total ICT investment for 2012-13 (operating and capital). The percentage figures shown the percentage of the total investment treated as BAU in that year

Note there are no relevant data for medium or small agencies on the BAU split by service tower, as the split of BAU and non-BAU is not made by these agencies at this level.

Source: Cross Agency ICT Benchmark 2012-13
Note: data include operating and capital investment for 2012-13. The bars and percentage figures show the percentage of the total investment treated as BAU in that year

FIGURE 10: PROPORTION OF APPLICATIONS INVESTMENT AS BAU – LARGE AGENCIES
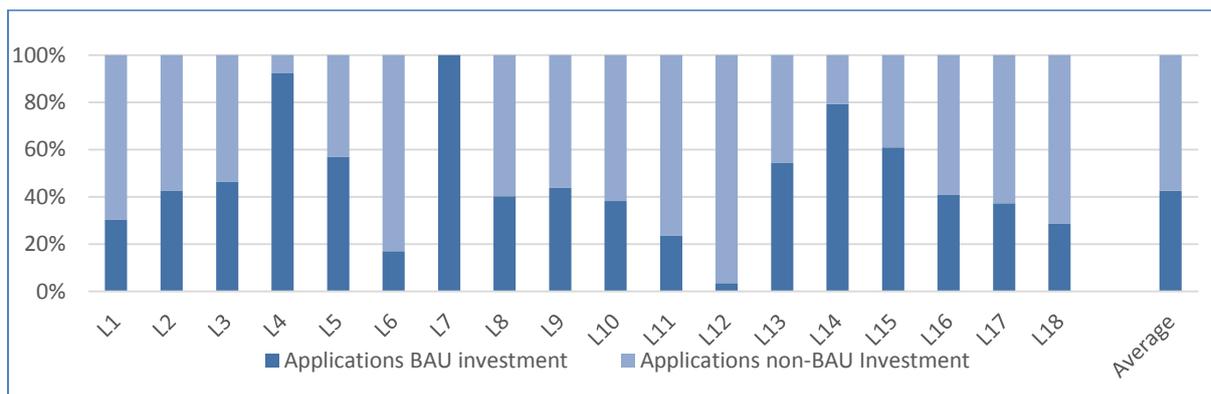
Source: Cross Agency ICT Benchmark 2012-13
Note: data include operating and capital investment for 2012-13. The percentage figures shown are the percentage of the total investment treated as BAU in that year

Note there are no graphs for medium agencies for infrastructure and applications investment, as these agencies all report a 100 per cent investment in BAU in 2012-13.

The effects of scale of BAU Costs

In order to provide a rough analysis of whether the APS is able to leverage its collective scale, the report compares the unit costs reported by each agency for two commodity technologies:

- **End user computing**—whether based on a desktop, laptop or thin client. For reference, in 2012-13, 79 per cent of all end user devices were desktop computers, 15 per cent were laptops and 6 per cent were thin clients

- **Storage**—this is analysed as installed storage, rather than the storage actually in use.

These two technologies were chosen for illustrative reasons. A similar analysis was performed for midrange servers, but the great variety in processing capacity (and therefore cost) tended to cloud the analysis, making like-for-like comparisons difficult.

Figure 11 shows how the unit cost of end user infrastructure varies with the size of the agency, and therefore the number of devices. While there are some natural variations due to factors such as the security standard to be met and the prevalence of use of thin client technologies, in general it shows that agencies with larger installed bases of end user technologies experience a scale benefit resulting in substantially lower unit costs.

FIGURE 11: BAU UNIT COST BASED ON AGENCY SIZE FOR END USER COMPUTING
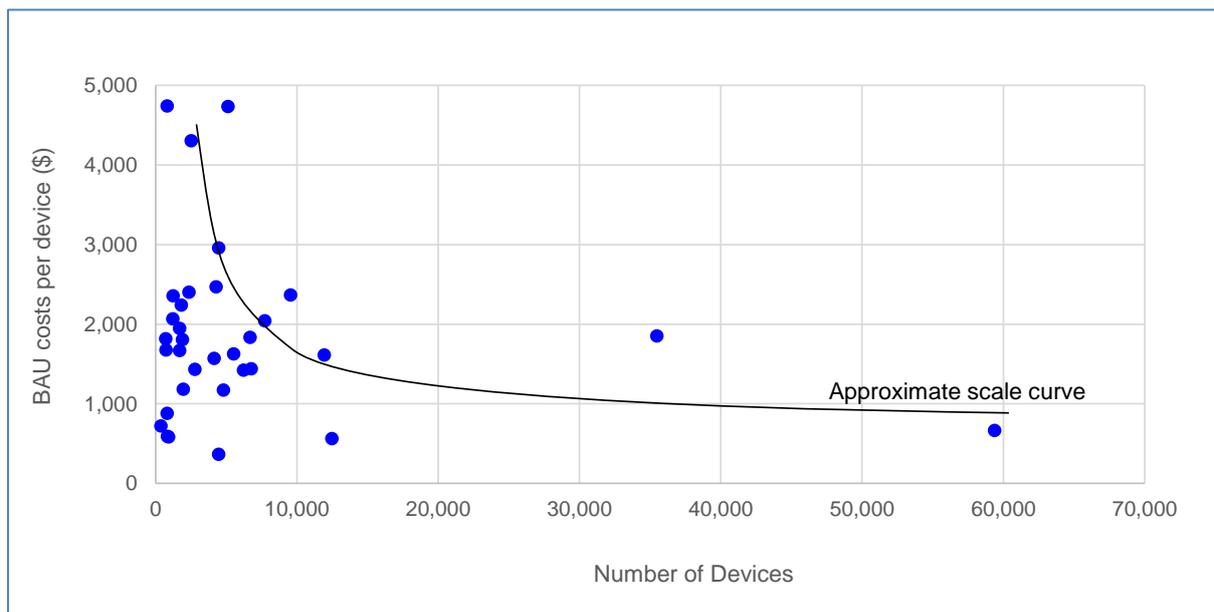
Source: Cross Agency ICT Benchmark 2012-13
Note: data are for 2012-13 and include BAU operating costs plus depreciation for the end user infrastructure service tower. Unit cost calculated by total cost divided by total units. Units include all device types: desktops, laptops and thin client computers. Figures are approximate only as other devices such as printers are not included. Capital costs or project costs that may reflect roll-outs or upgrades are excluded.

Figure 12 shows how the unit cost of storage varies with the size of the agency, and therefore the amount of installed storage. This shows a similar scale curve as end user computing. Large agencies, in spite of their often more sophisticated storage requirements, benefit from economies of scale that deliver significant lower unit costs relative to small agencies.

FIGURE 12: BAU UNIT COST BASED ON AGENCY SIZE FOR STORAGE
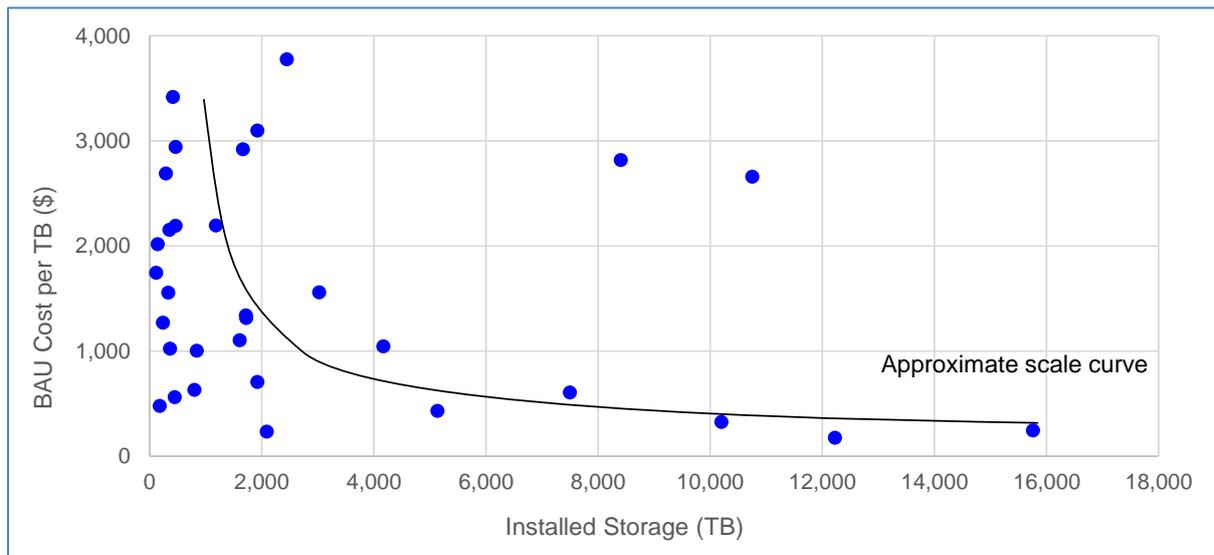
 Source: Cross Agency ICT Benchmark 2012-13

Note: data are for 2012-13 and include BAU operating costs plus depreciation for the storage service tower. Unit cost calculated by total cost divided by installed storage in TB. Capital costs or project costs that may reflect upgrades are excluded.

The two graphs above clearly show that larger agencies with large installed technology bases are able to deliver significantly lower technology unit costs than smaller agencies. This is in spite of a wide range of centrally-driven initiatives in recent years to enable all agencies to access whole of government purchasing economies of scale. At present those initiatives cover:

- data centre space
- purchase/lease of laptops, desktops and printers
- telecommunications charges, including mobile telephony
- a wide range of software products, leveraging agreements with large agencies such as defence, DHS and the ATO
- vendor service agreements, also leveraging panels developed by large agencies.

These arrangements will very probably have been successful in reducing the input costs for ICT-related services (such as provision of a fully configured and supported end user environment), but they have evidently not been fully effective in lowering the overall cost of that service to agencies.

IT management and support functions as a driver of BAU costs

As discussed earlier, BAU costs include those associated with technology operations, support and maintenance, and those costs associated with supporting the administration of the organisation.

This section deals with the second category, which is collected by the annual ICT Benchmark survey as 'IT Management' costs.

These costs are predominately operational, with an average of 92 per cent as opex and nine per cent capex and typically include the costs of support areas such as:

- ICT Finance
- ICT planning, strategy and architecture
- HR management
- skills development
- Resource Management
- Portfolio Management
- Strategic Vendor Management/ICT Procurement
- IT governance.

The relative size of these areas can be expected to vary based on factors such as:

- the degree of outsourcing in that agency—this will directly impact the relative size of the ICT procurement and vendor management functions
- the existence of special projects—for example major strategic sourcing initiatives will increase the size of these teams
- the sophistication of the ICT organisation's approach to running itself like a business, which may increase the investment in these areas.

An analysis of the extent of IT management costs is given in **Figure 13** and shows that these costs average 13 per cent across the APS.

FIGURE 13: EXTENT OF IT MANAGEMENT COSTS ACROSS AGENCIES
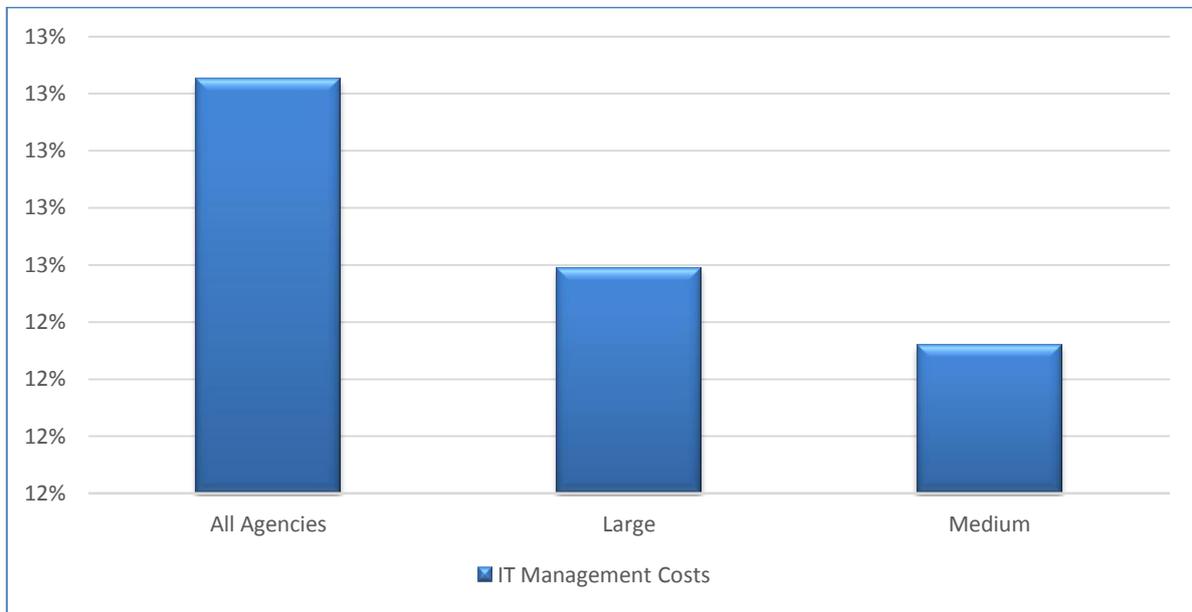
Source: APS agencies - Cross Agency ICT Benchmark for 2012-13
The data shown is Total ICT Management costs (operating and capital) as a percentage of total ICT investments (operating and capital). Note that only Large and Medium agencies are included as Small agencies do not provide a breakdown on IT Management costs

In total, the APS spent $636 million on IT management in 2012-13, a staggering sum in aggregate.

The value of this investment is hard to determine. For example, these support teams may be central to effective control of project delivery, or driving substantial strategic and financial benefits from better vendor relationships. While these are no doubt true, in the consultant's experience these areas are often also characterised by low-value adding activities, bureaucracy and poor accountability for outcomes.

While we have no published benchmarks for comparable organisations, the consultant's experience with large private sector organisations, with comparable challenges, is that these overhead costs would typically be less than 10 per cent of total ICT costs.

As a comparison, if the APS agencies could all reduce their IT management costs to 10 per cent or less (some are less than 10 per cent today) then this represents a potential saving of nearly $188 million annually.

Savings in support teams may not impact the ICT services to customers or staff, nor have an impact on new project delivery, so this must be an area of focus for management seeking to increase the overall value from their ICT budget.

Comparative benchmarks

As discussed earlier, ICT BAU investment is a broad category—in the APS it is commonly simply grouped as all non-project work. Fortunately, industry benchmarks use a similar definition, making at least high-level comparisons straightforward.

Figure 14 shows comparisons of APS agencies with a range of industry benchmarks, mostly US-based.

FIGURE 14: INDUSTRY COMPARISONS OF LEVELS OF ICT BAU INVESTMENT
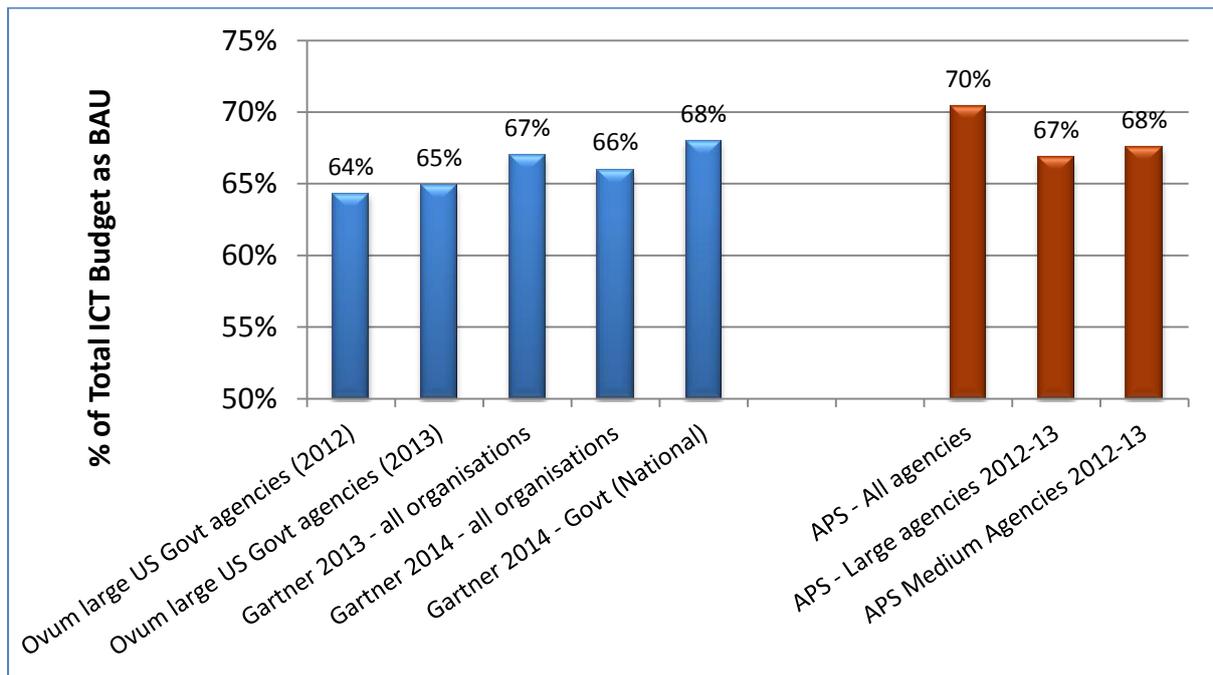
Source: APS agencies - Cross Agency ICT Benchmark 2012-13.
Note: Both Total ICT Budget and BAU investment levels include operating and capital investment and exclude depreciation
Note: in the context of this benchmark, smaller values are better.

In interpreting this chart it should be remembered that a lower proportion of BAU spend is better, indicating that relatively more funds are being directed to innovation and capability development than operations and support.

The benchmarks show that large and medium APS agencies are broadly equivalent to benchmarks at 65-70 per cent of total ICT investment on BAU. The consultant's work with large commercial organisations such as banks show that they tend to have lower rates of spend on BAU—certainly less than 60 per cent—and therefore with higher rates on new innovation and development.

To put these benchmarks into context, it should be noted that a reduction in agency spend on BAU by only one percentage point (i.e. from 70 per cent of total ICT investment to 69 per cent) represents $50 million in funds annually that could be available for innovation and new capability development. For large agencies alone this reduction would deliver $34 million in value annually.

Value for money from BAU investments

The data presented in the 2012-13 ICT benchmark supports some broad conclusions relating to spending on ICT BAU.

- ICT BAU as a proportion of total ICT investment is reasonable across the APS and in line with government benchmarks at 65-70 per cent. For clarity, we reiterate that this means 30-35 per cent of ICT investment is available for new projects, innovation and capability development

- The absolute level of BAU spend across the APS has remained steady over the last four years despite the introduction of new systems and technologies that require additional support and maintenance.

- The proportion of ICT investments on BAU relative to new work is much higher in infrastructure (82 per cent) than for applications. Across the APS, 52 per cent of applications-related spend is BAU, so 48 per cent is related to innovation and new capability development. This is important as new capabilities for key areas such as customer service, processing efficiency, digital transformation and information analysis typically involve a high degree of applications-related work.

- There are indications that ICT management costs are high relative to the private sector, representing an opportunity to increase value.

From the above points, the value for money from BAU investments across the APS as a whole is reasonable, but has opportunities for further improvement.

Improving value for money

The benefits to be gained from better management of ICT BAU investments has been noted—a 1 percentage point improvement in this area would free up $50 million annually for new investments. It is therefore important to examine how further improvements can be made.

Improvements in BAU can be pursued by strategies based on the following themes:

- **Rationalising and simplifying the technology platforms**—this means standardising on a small number of desktop, midrange and (if appropriate) mainframe technologies. Diversity increases hardware, software and support costs, usually for little benefit, except where specific technology is required to support a specialist business function.

- **Leveraging scale**—as **Figures 11 and 12** show, the cost of supporting technology is highly sensitive to scale. All agencies, but smaller agencies in particular, can increase their access to large-scale pricing through several means:

  o increased use of whole-of-Australian Government purchasing, based on established panels and expanding these to other commonly used technologies including business applications

  o outsourcing of services than can reasonably be provided by others with good capabilities and greater scale, in particular to other APS agencies

  o use of cloud-based infrastructure—this has the benefit of low cost and when configured appropriately, high resilience

  o use of cloud based application solutions—many commonly used applications such as financial management, human resource management and procurement can now feasibly be delivered as a cloud offering. This reduces both development and operating costs. Note is does not matter whether the cloud is government or privately owned.

- **Ensuring clear accountabilities and quality service management processes** for ICT operations and support outcomes. These improve service standards while reducing the management overhead both within organisations and/or between a service provider and client agency.

- **Reductions in low value work in the ICT organisation**—this requires a high level of transparency of work underway and a means of managing the value associated with it. Specifically ICT business support areas often reveal a low value contribution relative to their costs and can improve by being more outcomes focused.

Obstacles to improving value for money

While the theoretical case for reducing costs by rationalisation, sharing and leveraging scale effectively is quite compelling, many obstacles exist including:

- **Transition costs**—many of the obstacles to reducing ICT BAU costs across the APS are based on historical differences. For example an agency with an expensive desktop environment cannot easily adopt the desktops of a lower cost agency without an expensive transition. The costs of transition are driven by migrating data and user details from old to new email systems, document management systems, collaboration environments etc. These differences are usually not important to the function of the agency, but they make moving from one environment to another an expensive undertaking.

- **'Not invented here'**—while the differences between technologies are usually extremely marginal to the success of different agencies, those differences are often strongly championed by the respective technology teams.

- **Poor service management**—the low level of outsourcing to other government agencies is discussed above. In our experience, even where this occurs it is often unpopular with the client agency as the provider agency usually has little focus on the needs of others, resulting in disappointing service standards.

- **Perceived loss of control**—even agencies with poor quality systems resist opportunities to use systems that they see as important (such as financial management), but are provided by other agency. This may be based on a fear of losing control and is often influenced by past experience.

- **Poor past experience with other shared service arrangements**—Australian governments have a poor track record in translating theoretical benefits of sharing across agencies into real savings; cross-agency shared services involving ICT in Victoria, Queensland and Western Australia have all proved problematic. This is in spite of the relative (but not universal) success of the same concept in the private sector.

Multiples of these challenges may be evident when any given ICT rationalisation or sharing opportunity is canvassed.

Recommendations

While the value for money from ICT BAU investment appears reasonable, Finance makes the following recommendations to improve the outcomes from BAU investment:

Recommendation 1: **Improve data capture, collection and transparency to support better decision making**

This recommendation aligns with work already underway as part of the *Smarter ICT Investment* component of the *e-Government and the Digital Economy* policy. The initiatives include updating the ICT data collection methodology across the APS to improve transparency, with ongoing periodic collection, reporting and analysis of data on ICT costs, assets, performance, utilisation and availability.

1.1   Strengthen government reporting through an improved common data taxonomy underpinned by authority for Finance to collect ICT-related performance data from agencies:

- provide greater cost transparency of ICT BAU services by associating them with applications and platforms

  This will allow discrimination of where BAU costs are being incurred, help in identifying areas of low value and where high costs are being incurred in support of ageing technologies and inefficient internal processes. Implementing the recommendation will require consideration of internal systems for capturing and allocating costs data and the human effort required.

- develop a model to classify agencies' ICT profile to determine their intensity, interactions, service volumes and maturity of ICT capability to support clustering of like agencies and identify opportunities for shared services and contestability arrangements to enable better government services

- divide technologies into categories that describe how specific they are to the mission of the agency to discriminate between ICT utility services (for example, end user computing, email, server processing and storage), common business support applications, and mission-specific applications

  For example, platforms such as a high quality end-user computing environment is vital to every agency, but the specific capabilities of that end user computing platform (e.g. the email client or the document management system) will rarely be an important success factor for the agency. The objective is to discriminate between:

  o   *ICT utility services, such as end user computing, phone, e-mail, server processing, on-line processing and storage. These are amenable to aggressive rationalisation and migration to cloud-based providers (whether government operated or not)*

- o *common business support applications, such as general ledger, payroll, procurement, data warehouse. These are amenable to greater commonality and sharing while recognising that the needs of large and complex agencies will be different to those of smaller entities*

- o *business-specific applications such as welfare benefits calculations, visa processing, tax processing, analytical applications. These are less likely to benefit agencies by sharing but can indirectly benefit from operating on rationalised and lower cost utility computing platforms.*

Recommendation 2: **Rationalise services and leverage economies of scale**

These recommendations align with work already underway as part of the *Smarter ICT Investment* component of the *e-Government and the Digital Economy* policy and the corporate and common services proposal being developed under the *Transforming and Modernising Government* work. This work aims to simplify and standardise Government ICT by eliminating duplicated and fragmented activities across agencies. It will achieve this by requiring the use of standard shared or cloud services where a minimum efficient scale (MES) is not met. This is consistent with *Smaller and More Rational Government*.

Importantly, throughout this work consideration should be given to lessons learned from previous government shared services endeavours before embarking on large-scale cross-agency ICT services provision. Learning from past mistakes will allow the design of a shared services model with the greatest chances of success.

2.1   Assess the potential to migrate utility ICT services to private cloud service providers, or large-scale agencies with the potential to offer a whole of government cloud service at a competitive cost point.

2.2   Assess the potential for business support applications to be rationalised across the APS.

This may involve clustering departments into groups with similar needs.

2.3   Agencies providing ICT services to other agencies work with the Shared Services Support Unit to ensure a consistent whole-of-government approach to develop customer focused service management disciplines. This includes: clear accountability, working to agreed service level standards, regular transparent price benchmarking and customer service reporting.

Recommendation 3: **Improve IT management**

3.1 Agencies to place greater scrutiny on the costs and value delivered from ICT support areas (counted as IT management).

These currently average 13 per cent of all ICT costs and might be reduced to 10 per cent or less of total ICT costs.

3.2 Agencies ICT areas to report annually to their respective business owners the cost of operating and maintaining the systems that support their function with a view to reducing costs and improving services.

This is expected to drive a business-focused dialogue on how efficiencies can be gained and value improved. It will, for example, help a dialogue on the costs of managing older technologies and applications and the increased value that may be available from alternatives.

Projects report

For the purposes of this report, projects are considered separately to BAU. Project investments are designed to change the ICT environment to deliver new or improved business outcomes. Within the APS projects typically aim to increase the services delivered by government while lowering the costs of these services.

Methodology

The Audit involved a review of the status and outcomes of 31 major ICT-enabled projects underway in the APS during the past three years that met the ICT Two Pass Review process criteria, provided below:

- projects were ICT-enabled—the policy or service delivery outcomes were highly dependent on an underpinning ICT system
- had a total cost estimated to be $30 million or more, including ICT costs of at least $10 million
- were assessed by Finance as being high-risk in terms of cost, technical complexity, workforce capacity or schedule.

The aim of the review was to gather information on the progress and outcomes of investment in these projects. This was achieved through visits to the project offices of the 18 agencies implementing the 31 projects.

The in-scope projects included 23 'in-flight' projects (projects underway at the time of the Audit) and eight completed projects. The list of final projects is at **Table 1.**

Entry interviews with agencies commenced on 2 May 2014, and fieldwork commenced on 30 May 2014. During fieldwork it became clear that the schedule for the review would slip considerably if this approach was maintained. Some agencies indicated that they would not be able to accommodate a visit until towards the end of July. Few agencies were able to facilitate interviews and document reviews in accordance with the fieldwork schedule of approximately one day per project.

The review therefore adapted its approach and completed the data gathering phase by obtaining written submissions and evidence from 22 projects, supplemented by telephone calls and/or visits where required.

The scope initially included 36 projects. After investigation, however, five projects were de-scoped:

- two projects initially deemed in scope had not yet started (the Australian Customs and Border Protection Service's National Border Targeting Centre and the Department of Employment's Disability Employment Services project)
- two projects were elements of other projects already included in the Audit (IP Australia's IP Rights Modernisation and the Department of Health's Individual Electronic Health Record)

- the National Disability Insurance Scheme (DisabilityCare) was transferred from the Department of Social Services (DSS) to the National Disability Insurance Agency, a non-FMA Act entity outside the scope of the Audit.

Table 1: Final list of projects

Project	Agency	Value ($M)	Status
Activity Based Funding	Department of Health	160.0	In-flight
Aged Care Reform (Gateway)	Department of Social Services	198.8	In-flight
Aged Care Reform (Means Testing)	Department of Human Services	69.3	In-flight
Biometrics for Visa and Border Processing	Department of Immigration and Border Protection	69.3	Complete
Biosecurity Reform Program	Department of Agriculture	19.8	In-flight
Carbon Price Implementation Programme	Clean Energy Regulator	188.0	Complete
Central Budget Management System Redevelopment	Department of Finance	89.8	In-flight
Child Support Replacement System (Cuba)	Department of Human Services	102.3	In-flight
Combating Organised Crime - Enhanced Analytical Capability	Australian Transaction Reports and Analysis Centre	24.0	In-flight
Defence Personnel System Modernisation (JP2080) Phase 2B.1	Department of Defence	260.9	In-flight
Electronic Lodgment Service to Standard Business Reporting Transition	Australian Taxation Office	79.8	In-flight
Enhanced Market Supervision (FAST Program)	Australian Securities and Investment Commission	43.6	In-flight
Enhanced Passenger Assessment and Clearance	Australian Customs and Border Protection Service	23.7	Complete
Excellence in Research	Australian Research Council	9.8	Complete
Garrison and Estate Management System (GEMS)	Department of Defence	85.0	In-flight
High Availability Internet Gateway Service (HAIGS)	Department of Defence	65.3	Complete
International Communications Network	Department of Foreign Affairs and Trade	215.9	In-flight
Joint eHealth Data and Information System (JeHDI)	Department of Defence	133.3	In-flight
Market Competition	Australian Securities and Investment Commission	25.7	Complete
Next Generation Desktop (NGD)	Department of Defence	166.5	In-flight
Next Generation Forecast and Warning System	Bureau of Meteorology	44.2	In-flight
Not-for-Profit Organisations	Australian Taxation Office	43.5	Complete
Parliamentary Workflow System	Department of Education	29.6	In-flight
Passport Redevelopment Program	Department of Foreign Affairs and Trade	100.8	In-flight

Personally Controlled e-Health Record (PCEHR)	Department of Health	649.1	In-flight
Project Sentinel	Department of Defence	80.4	In-flight
Rights In One	IP Australia	57.8	In-flight
Self-Managed Super Funds Auditor Register	Australian Securities and Investment Commission	21.4	Complete
Service Delivery Reform	Department of Human Services	703.0	In-flight
Superstream	Australian Taxation Office	385.0	In-flight
Visa Pricing Transformation	Department of Immigration and Border Protection	100.1	In-flight
	Total	*4,245.7*	

Discussion and analysis

Agency reports, document reviews and interviews with relevant agency officers indicate that, of the 31 projects:

- eleven (48 per cent) of the in-flight projects (with a total value in the order of $2.2 billion) are rated green

- nine (39 per cent) of the in-flight projects (with a total value in the order of $1.2 billion) are rated amber

- three (13 per cent) of the in-flight projects (with a total value in the order of $341 million) are rated red

- seven (88 per cent) of the completed projects (with a total value in the order of $423 million) were rated green

- one (13 per cent) of the completed projects (with a total value in the order of $23.7 million) was rated red.

Table 2: Summarised Project Ratings[6]

Project Status	Green	Amber	Red	Total
In-flight	11 (48%)	9 (39%)	3 (13%)	23
Completed	7 (88%)	0 (0%)	1 (13%)	8

The review found that while projects generally have appropriate governance and risk management mechanisms in place, the significant number of at-risk projects or projects with a red traffic light at completion, highlight the need for increased accountability and transparency for major ICT-enabled projects, as identified in the Government's *e-Government and the Digital Economy* policy.

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[6] Percentages may not to add up to 100 per cent due to rounding.

Common features of troubled projects

The review found some common features that hindered troubled projects.

Resourcing

Nine of the projects reported that recruiting staff with the required skills had been problematic, i.e. workforce risk had materialised. The review observed that resource contention between projects and with business as usual activities within agencies is common.

Most projects' risk registers identify workforce risk as a potential threat to successful implementation. However, mitigation strategies are frequently simplistic and sometimes over-optimistic. For example, to state that a project is a departmental priority and thus will have first call on available resources does not adequately treat the risk, as priorities change and skills shortages can affect the ICT industry as a whole, not just individual organisations.

In their early stages, a number of projects considered that their workforce risk had been sufficiently mitigated by making recruitment and retention the responsibility of the prime contractor. While this might reduce the risk of cost overruns in the event that suitable staff cannot be found, it does not reduce delivery risk in respect of delays.

This suggests that agencies need to be more proactive in resource management, and to take a more critical approach when analysing and treating workforce risk. Managing workforce risk at a whole-of-government level, as well as at an agency level, would likely lead to better project outcomes.

Benefits management

The review observed that while almost all projects had identified intended benefits in their business case, there is scope for improvement in benefits management, particularly during and after project implementation.

Twenty-nine projects advised that realisation of their intended benefits is on track or has been achieved, but only three in-flight projects provided evidence they are tracking benefits realisation during the implementation phase. Just one completed project provided evidence it is tracking benefits realisation post-implementation.

Agencies implementing eleven of the twelve projects with a red or amber status advised the review that they expected all, or most, of the project's intended benefits to be realised. However, only two provided evidence that they were actively monitoring or tracking the project's benefits. Evidence that financial benefits realisation is on track would include analysis that confirms, at a minimum, that the internal rate of return continues to exceed the hurdle rate.

The UK Government's *Managing Successful Programmes*, guidance that most large agencies advise they have adopted[7], stresses the importance of active benefits management throughout the project lifecycle. It is possible for a project to deliver its outputs and capabilities on time and under budget, but for none of the intended benefits to be realised, as a result of internal or external factors beyond the project's control. Further, the original target may have moved during project execution. Projects need to react to changes in their environment, adapt their benefits accordingly and constantly explore opportunities for further benefit.

Managing Successful Programmes outlines the following activities to be maintained throughout the implementation phase:

- conducting regular benefits reviews
- monitoring for any strategic changes
- assessing the eventual impact of changes
- aligning to strategic change
- checking the project activities against the blueprint and benefits realisation plan.

Several projects told the review that monitoring benefits realisation is an activity to be carried out only after delivery, but this is not congruent with good practice as outlined in *Managing Successful Programmes.*

Optimism bias

Six projects rated red or amber reported that they had underestimated the project's complexity.

Four projects (with a total value of $407.3 million) re-baselined their schedule immediately after approval to accommodate more realistic implementation timelines than outlined in their business case.

The review found that more realistic assessment of project complexity would likely lead to better outcomes.

Eleven projects rated red or amber reported that they expect to deliver all or most of their intended benefits, despite significant schedule delays and other major challenges. Evidence, noted under Benefits Management above, suggests that many projects could improve benefit tracking to help reduce the risk of optimism bias.

Some mitigation of the risks resulting from optimism bias could be achieved by future projects adopting a staged—or modular—approach, with phased funding linked to successful completion of each tranche of work.

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[7] As evidenced by agency reporting under the Agency Capability Initiative using the Portfolio, Programme, and Project Management Maturity Model (P3M3®) and observed by the review during fieldwork.

It can be expected that agencies will desire, in their reporting, to present the most favourable picture of project status possible. The review observed several instances where this desire led to reporting that bordered on 'strategic misrepresentation[8]'.

The Government's *e-Government and the Digital Economy* policy agenda includes a commitment to create a dashboard publishing key metrics on Government ICT performance and progress on major new investments. An appropriate level of independent assurance of agency reporting on project progress and outcomes will be required, to ensure that an accurate description of project status, using consistent criteria, is used to populate the dashboard and to report to Government.

Baseline information

Wherever possible, the review sourced project baseline information from the relevant Cabinet decision. Where this was not available, the review sought baseline information from the approved 2nd Pass business case. Where neither the decision nor the approved business case was available, the review sourced evidence from relevant Budget information in the public domain and/or agency documentation or advice.

The review experienced difficulties at times in determining baseline information. Details of Cabinet decisions were generally unavailable or difficult to locate, and some projects have been amalgamated, split, renamed or otherwise amended. The review observed numerous instances where agencies approved significant changes to projects through their internal governance arrangements without reference back to the original approver. A register of key baseline information for each project would provide a baseline for accountability and reporting to Government.

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[8] Bent Flyvbjerg, Professor of Major Programme Management at Oxford University's Saïd Business School, coined this term to describe the planned, systematic distortion or misstatement of costs and benefits to justify an investment. Prof. Flyvbjerg writes that 'strategic misrepresentation can be traced to political and organisational pressures, for instance competition for scarce funds or jockeying for position'

Recommendations

The preceding discussion and analysis supports the following recommendations for major ICT-enabled projects:

Recommendation 4: **Improve reporting for major ICT projects**

This recommendation aligns with work already underway as part of the *Smarter ICT Investment* component of the *e-Government and the Digital Economy* policy to increase accountability and transparency, including for major projects This work includes developing an ICT Project Dashboard publishing key metrics on Government ICT performance and progress on major new investments.

4.1   Agencies to provide regular reports for government on the progress of major ICT projects.

This could record baseline project information and monitor project performance and benefits management throughout project implementation and through to realisation following project completion.

4.2   Finance to include information on the progress and outlook of major ICT projects in its ICT investment reports (Recommendation 5.1), so that appropriate interventions can be made if required.

4.3   Agencies to complete Post Implementation Reviews for all major projects and provide the reviews to Finance.

4.4   Agencies to report four-year agency ICT investment intentions to Finance.

This will allow a consolidated whole-of-government picture to be developed and improve the information available to decision makers. It could be used to prioritise and optimise investments, and to identify opportunities for eliminating subscale activities and duplication by promoting co-development and reuse of existing whole-of-government services.

Recommendation 5: **Improve ICT investment decision support**

5.1   Finance to provide strategic advice to Cabinet on major ICT project proposals from a whole-of-government perspective and regular consolidated ICT investment reports.

Reports could include:

- *an overview of the pipeline, highlighting strategic alignment, duplication and gaps, and emerging vulnerabilities requiring attention*

- *traffic lights and other concise information for each project or programme*

- *an assessment of overall performance in realising expected benefits and delivering Government priorities.*

5.2 All major ICT project proposals to consider options for a modular approach and stage-based approval for release of funds.

This could consider tailored reporting requirements and/or modular implementation arrangements recommended given proposals' scale, priority and/or risk.

Concluding remarks

The public sector as a whole accounts for about a third of Gross Domestic Product (GDP), and many programmes are impossible to execute without effective use of ICT. For these reasons, public services are an obvious place where policy can provide leadership[9].

The *Audit of Australian Government ICT* is an important step in realising more effective use of ICT across APS departments and agencies.

The Audit recommendations focus on:

- improved data capture, collection and transparency to support BAU decisions
- rationalising BAU services and achieving efficiencies of scale
- improved IT management
- improved reporting and investment decision-making support for major ICT projects.

When considered in the context of the Australian Government's broader *eGovernment and Digital Economy* agenda, the Audit recommendations support increased productivity and economic competitiveness and a better model for achieving whole-of-government ICT goals.

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[9] *The Coalition's Policy for eGovernment and Digital Economy,* August 2013.

Annexure A—Terms of Reference

The Government's *e-Government and the Digital Economy policy* election commitment includes an undertaking to 'request DoFD and AGIMO to undertake an audit across all agencies of spending, capex and outcomes generated by investment in ICT over the past three years'.

Objectives

The objectives of the audit are to:
- assess the extent to which the Government's investment in ICT, over the last three years, has achieved value for money; and
- make recommendations for improvement, with the aim of optimising outcomes from existing and future investments.

The Department of Finance (Finance) anticipates the audit will provide a robust evidence base for decisions by Government on government ICT, including to support the e-government policy. The policy includes a Smarter ICT Investment Framework. The Framework will require a good understanding both of current ICT expenditure, operations and functions as well as opportunities for improvements in the efficacy of ICT project and programmes across government, and their support to government policies and outcomes.

Scope

All ICT-related spending and investment over the last three years, by entities previously subject to the *Financial Management and Accountability Act 1997* (FMA Act), is within scope.

The audit will leverage existing information sources such as ICT Benchmarking (for BAU spending), ICT Two Pass Review Process (for major projects) and ICT procurement data, all held by Finance. These sources provide information on spending and investment by entities previously subject to the FMA Act. Consequently, the audit will be restricted to former FMA Act entities.

Approach

The approach is to progress the audit in three inter-connected phases. The audit will be prioritised to:
- first, establish a robust, defensible baseline of data on expenditure, including on the number and nature of contracts, types and age of technologies and systems, workforce, and BAU versus new project expenditure
- second, assisted by the analysis of that data, establish a second iteration comprising specific 'deep dive' investigations of significant issues
- third, undertake a research-informed investigation of a second round of policy-related questions.

Annexure B—Other analysis and supporting material

This section provides additional background and contextual information to assist the reader to better understand the Australian Government ICT environment.

ICT Vulnerabilities

The delivery of services through digital channels is becoming increasingly important and a core element of the e-Government agenda. However, digital channels are highly dependent on less visible functioning support systems that store and process data.

Under-investment in critical back-end systems has a number of consequences, including potentially unreliable services—and not simply just through the online service. Other consequences from increased fragility include, for individuals, loss of income and untimely payment of benefits; errors in national accounts; issues of national security; and potentially the loss of life.

There are also 'second tier' consequences. These include unsustainable maintenance costs; lost vendor support; difficulty in retaining specialised ICT skills; increased transactional costs within government; and a hampered ability to undertake fundamental reform. Further, agencies may seek new policy proposals through the Budget to remedy systems that might normally be associated with internal BAU funding[10].

Through surveys and interviews, a number of ICT systems have been identified that are deemed critical to the delivery of government services.

Ranking systems according to an assessment of the effect failure would have on citizens, business and government operations, and on the strength of mitigation strategies in place to manage risk, indicated that there were no systems rated with an extreme priority—that is, where there was a high risk of failure in the short term.

Of the critical systems identified, 40 were identified as ageing infrastructure and 20 were noted by agencies as subject to limited investment or lack of funding plans. Although these numbers appear to be small compared to the whole-of-government ICT portfolio (approximately 10,000 systems), it should be noted that these systems are those considered critical to citizens, business and government operations.

Based on an initial assessment, at least 40 critical systems will require medium priority attention over the next four years. Agencies have also identified multiple systems or ICT environments requiring remediation or transformation.

Seventy-seven per cent of systems surveyed were typically assessed by agencies as at or beyond end-of-life, complex, expensive to maintain and slow to adapt to changing government policy. Where these systems were relied upon, agencies identified that the

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[10] From 2009-10 to 2013-14, of all ICT Two Pass proposals, 60 per cent involved ICT replacement or upgrade, while 40 per cent responded to new policies.

interface to web-based services was often inefficient, prone to error and requiring manual intervention.

Procurement

For ICT Project investments, agencies must undertake procurements in a manner that is consistent with the Australian Government's procurement framework, as set out in the *Commonwealth Procurement Rules* (CPRs). The CPRs underpin Australia's international obligations in accordance with free trade agreements, and promote sound and transparent procurement practices that seek to achieve value for money and encourage competition in government procurement.

The Australian Government emphasises the importance of being accountable and transparent in its procurement activities. While under the CPRs it is mandatory for agencies to maintain appropriate documentation for each procurement, the specific documentation content is not prescribed. The CPRs do indicate that documentation would include how value for money was considered and achieved.

Five ANAO audits conducted since 2007, focussing on aspects of procurement across Australian Government agencies[11], identified shortcomings with documenting value for money assessments in respect to agencies' application of the Commonwealth Procurement Guidelines[12] for a significant proportion of procurements examined.

This Report does not suggest that value for money is not being achieved through the procurement process, only that the documented evidence to support this position is not always produced.

Whole-of-government procurement contracts, arrangements and initiatives are in place to provide agencies with an initial reference about contracts, arrangements and other relevant procurement related activity to assist agencies with their procurement activity and planning. Some of the arrangements are mandatory. Some arrangements are well established and others are relatively new.

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[11] ANAO Audit Report: No.54 2013-14 *Establishment and Use of Multi-Use Lists Across Agencies*; No.31 2011–12 *Establishment and Use of Procurement Panels*; No.11 2010–11 *Direct Source Procurement*; No.14 2009–10 *Agencies' Contract Management*, and No.21 2006–07 *Implementation of the revised Commonwealth Procurement Guidelines*

[12] At the time the first four audits were undertaken, agencies were subject to the *Commonwealth Procurement Guidelines* (CPGs). The CPGs were replaced by the CPRs in July 2012.

Table 1 provides an overview of the various whole-of-government panels that cover ICT goods or services.

Good or Service	Overview[13]
Telecommunications Commodities, Carriage and Associated Services Panel	Mandated for NCCE; opt in for CCE.
Telecommunications	Mandated for NCCE; opt in for CCE, excluding Government Business Enterprises. Head agreement, Australian Government Telecommunications Arrangements.
Telecommunications Invoice Reconciliation Services Panel	Optional.
Telecommunications Management Panel	Mandated for NCCE; opt in for CCE.
Internet Based Network Connection Services Panel	Mandated for NCCE; opt in for CCE.
Microsoft Volume Sourcing Arrangement II	Mandated for NCCE; opt in for CCE, excluding Government Business Enterprises. Whole-of-Australian Government agreement for use by all NCCE Entities.
Motor Vehicle Leasing and Fleet Management	Mandated for NCCE; opt in for CCE. Vehicle Fleet Contract. Australian Government Fleet.
Government Advertising	Mandated for NCCE; opt in for CCE. Advertising contracts, guidelines and arrangements.
Travel and Related Services	Mandated for NCCE; opt in for CCE when invited. Whole-of-Australian-Government Travel Procurement.
Major Office Machines Equipment and Support Panel Managed Print Services Panel	Mandated for NCCE; opt in for CCE.
Desktop Hardware Panel	Mandated for NCCE Opt in for CCE
Secure Internet Gateway Services	Mandated for NCCE. The following lead agencies will deliver shared internet gateway services for NCCE: Australian Customs and Border Protection; Australian Federal Police; Australian Taxation Office; Department of Agriculture; Department of Defence; Shared Services Centre (Education / Employment); Department of Human Services; The Treasury.
Data Centre Migration Services Panel	Mandated for NCCE; opt in for CCE.
Data Centre Facilities Panel	Mandated for NCCE; opt in for CCE.
Stationery and Office Supplies	Mandated for NCCE; opt in for CCE.
Legal Services Attorney General's Department Legal Services Multi-Use List	Further information is available from the Attorney General's Department.

Efficiencies in the use of whole-of-government procurement arrangements can be fostered by agencies increasing their knowledge of the supplier market.

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[13] NCCE = Non Corporate Commonwealth Entity; CCE = Corporate Commonwealth Entity

More generally, enhancing measures to support the sharing of information within and across agencies (including information on performance, expertise and experience of providers) would assist agencies in becoming more informed purchasers. In turn, this could limit the demands on suppliers.

Centralising procurement advice within agencies may also allow better coordination of effort and, as a consequence, achieve greater efficiencies and better results.

ICT Panels and AusTender

Analysis of AusTender[14] data indicates that in 2013, approximately 35 per cent of contracts let by agencies were open tender, 57 per cent limited tender, and the remaining eight per cent all types of prequalified tender. Prequalified tender procurements represented approximately $6.5 billion of expenditure and 5,000 contracts.

Analysis of ICT Panel data through AusTender shows that as at 1 July 2014 there were 156 active ICT panels reported on AusTender15:

- 1,360 suppliers were engaged through those panels
- 12,100 contracts were awarded valued at a total of $5.7 billion
- the average total contract value per panel was $37 million and the median was $2 million
- the average number of contracts per panel was 78
- of the total suppliers, 57 per cent had contracts reported
- the average number of contracts awarded per supplier was 9 and the median was 1
- the average value per panel contract was $461,855 and the median was $102,960.

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[14] www.tenders.gov.au/?event=public.reports.list
[15] www.finance.gov.au/blog/2014/08/25/how-much-work-do-ict-panellists-really-get/

For the period 1 July 2010 to 30 June 2014, AusTender reports $17.08 billion in 24,900 published contract notices for Information Technology Broadcasting and Telecommunications.

Year	Value	Contract Notice Published
2010-2011	$3,236,733,010.69	6,463
2011-2012	$2,552,784,957.69	7,273
2012-2013	$9,160,981,377.00	5,499
2013-2014	$2,127,522,709.23	5,666
Total	$17,078,022,054.61	24,901

All Active and Retired Agencies: Information Technology Broadcasting and Telecommunications Contract Notice Published by value and count (Source: AusTender)

This is broken down below by open tender, prequalified tender or limited tender.

1-Jul-2010 to 30-Jun-2014

	Contracts	%	Value (AUD)
Open tender	8,292	33.30	$6,349.9 m
Prequalified tender	3,588	14.41	$607.4 m
Limited tender	13,021	52.29	$10,120. 8 m
Total	**24,901**		**$17,078.0 m[16]**

ICT Benchmarking

Federal Government entities subject to the *Public Governance, Performance and Accountability Act 2013* participate in annual benchmarking of their ICT activities. The Government introduced ICT benchmarking in response to a recommendation of Sir Peter Gershon's *Review of the Australian Government's Use of ICT* to develop common metrics and conduct benchmarking.

The ICT Trends Year-on-Year Report informs whole-of-government ICT policy by identifying ICT trends based on analysis of annual whole-of-government ICT benchmarking data.

The 2012-13 exercise is the sixth benchmarking cycle conducted by the Department of Finance (Finance). Only agencies that have provided complete and valid data for the calculation of each metric, in all years, have been included in the analysis.

All data provided has been assessed using a standard statistical methodology; data points that were found to be statistically significant, or shown to have significant variations from data provided in previous years, have been identified to agencies. Agencies were then invited to confirm the accuracy of their data. Therefore all data included in this analysis is considered to be accurate and, where possible, all available data has been included in analysis.

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[16] Figures do not sum due to rounding.

Finance has a high level of confidence in data reported through the Benchmarking process, with the 2012-13 exercise being the sixth benchmarking cycle conducted by Finance.

The Benchmarking ICT Trends Report Year-on-Year to 2012-13 shows BAU ICT remaining stable between 67-68 per cent of total ICT expenditure.

Total ICT Expenditure against BAU ICT Expenditure per Financial Year

Year	BAU ICT Expenditure ($b)	BAU ICT Expenditure (%)	Total ICT Expenditure ($b)
2010-11	3.64	68	5.36
2011-12	3.8	68	5.59
2012-13	3.03	67	4.93
Total	10.79		16.35

Current initiatives related to the whole-of-Government ICT environment

The Department of Finance (Finance) has led a number of efficiency reviews, and is undertaking other work, related to the management of the whole-of-government ICT environment. As context for the audit's findings, the following provides a high-level overview of these activities.

Enterprise Resource Planning

Finance was tasked with undertaking the Project through the 2013-14 Budget measure, *Public Sector Enterprise Resource Planning Systems – investigation study* and received funding until 30 June 2015.

ERP systems are business applications used to manage and integrate business processes across multiple divisions and organisational boundaries (for example, payroll, accounts processing and financial services). There are currently more than 200 unique ERP systems across the public sector.

Following extensive consultation and analysis, EIB has concluded that existing methods of delivering ERP solutions are inefficient and unsustainable. However, due to the complexity of the current ERP landscape the Project has identified that there are relatively few immediate improvements and delivering efficiencies will require sustained action over the next several years. This action has the potential to achieve substantial benefits, including:

- significant reductions in process costs; modelling suggests that standardisation and automation of transactional business processes could avoid costs of between $233 million and $465 million over seven years (the average life of an ERP system). An enabler to this is the consolidation of support staff and centralisation

of procurement; on its own it is estimated this would reduce costs by $118 million over the forward estimates ($99 million from reducing staff and sharing application development activities and $19 million from centralising procurement and contract management and standardising technical configuration); and

- unquantified qualitative benefits, including more timely and accurate business intelligence that better supports Government decision making, systems that allow entities to better respond to change and a redirection of resources from low-value transactional tasks to more strategic matters.

The draft final report recommends that the Public Sector should consolidate contractual arrangements, support staff and ERP software systems via a system of vendor-based hubs. Within five years of the commencement of the implementation of this Programme, no entity should procure ERP systems individually.

Implementation of the recommendations in the draft final report would deliver efficiencies through:

- fewer, more integrated ERP systems;
- standardisation of corporate processes and common data taxonomy through use of ERP systems with minimal customisation;
- adoption of cloud-based systems; and
- real-time reporting at the entity, portfolio and Whole-of-Government levels.

The recommendations also propose that a number of these elements be mandated in order to provide a whole-of-government approach, and they be designed, implemented and monitored by a centre-led support unit (similar to the United Kingdom Government Crown Oversight Function). Key elements include:

- common reporting requirements and data taxonomy;
- a robust benchmarking regime that supports contestability;
- standardised ERP systems and processes; and
- a coordinated reduction in the total number of systems across government.

Consolidating corporate common services (shared services)

The public sector has a need and an opportunity to reform the way it supports its strategic priorities by driving greater efficiencies through a focused and planned transition to greater consolidation of transactional and other common, non-core activities. To achieve this, in November 2014 Secretaries Board agreed that:

- the desired end state - as summarised below - is necessary and achievable and best pursued via the strategy outlined in the following points:
  - Greater consolidation of corporate functions (transactional and some tactical) with a few providing services for many;
  - Ongoing consolidation of standard systems and processes for common non-transactional processes;

- o Supporting a larger range of common services with minimal customisation, through fewer Enterprise Resource Planning (ERP) systems procured centrally to drive down costs;
  - o Expansion of central procurement of common services, assets and infrastructure as appropriate; and
  - o Effective engagement with the private sector on outsourcing options.
- the establishment of a governance board, with a membership comprising Secretaries and including providers, users of services and independent external representation, to oversee the development of sequencing and formal arrangements for the proposed transformation programme, and to monitor and measure outcomes, supported by a unit located within the Department of Finance (Finance) and drawing on entity expertise and skills.
- the following approach as the first phase of realising benefits from a whole of Public Sector shared service approach:
  - o Those large entities or portfolios that are effectively standardising and consolidating under separate authority or decisions of government continue to do so for the next two to three years under the close scrutiny of the governance board.
  - o Identification of these entities to be based on specific government decisions, size and data on potential efficiency.
  - o Formally explore the scope for expansion of the two Public Sector shared service centre (SSC) initiatives (Employment Education for medium-sized entities and Treasury for central and smaller entities) and, pending the outcome of these assessments, provide them with the support and investment necessary to ensure their success.
- There would be an immediate, formal engagement with the private sector through a Request for Information (RFI) process, to gauge interest, capabilities and preparedness to:
  - o develop competitive offerings for the provision of transactional services to the Public Sector, and/or
  - o partner with the Public Sector in implementing the preferred strategy and realising the efficiencies and benefits identified.
- The Support Unit being adequately resourced to work with all entities to establish detailed roadmaps to progress toward the agreed end state over the next 3-5 years – closely monitored by the governance board – with a view to either migrating to another provider(s) over time or becoming providers themselves for a select group of services/entities.

Grants administration

In the 2013-14 Budget, the Government provided $9.1m over four years to implement a whole-of-government advertising and notification, application download and lodgement and grants awarded system. The system will be operational in 2016-17, with some elements implemented sooner.

The first phase of the project, the grants.gov.au scoping study provided a comprehensive, high-level stock take of grant activity. The scoping study analysed data

from the 2012-13 financial year. This data provides a snapshot of the grants landscape during that year. The study found that:

- there was a high number of common funding recipients
- 41 entities undertook grants programmes
- 38 entities account for only 30 per cent of grant expenditure
- 31 entities account for only 9 per cent of the number of grants awarded.

A cross-agency Grants Management Reference Group identified significant commonality in high-level business processes across entities, as well as significant difference in the types of business information required to be gathered to assess and manage a grant. On this basis, there is merit in adopting a standardised and centralised approach to managing grants administration—informed by evidence on the amount of business process standardisation that is possible below the 'high level' process.

In addition, Finance and agencies are investigating the development of an integrated grants management solution, appropriate grant-like funding approaches and other funding mechanisms. Any solution should be designed with flexibility in mind, consider a common business architecture, channel planned ICT restructures due to occur across the Public Sector, and represent a significant efficiency for government in terms of capital investment, and user capability.

<u>Digital services</u>

Research undertaken by the Departments of Finance and Communications in early 2014 as part of the *e-Government and Digital Economy* policy confirmed that there has been significant progress in improving digital service delivery, particularly in larger service delivery agencies such as the Department of Human Services, the Australian Taxation Office, the Department of Immigration and Border Protection and others.

Agencies reported 159 services assessed as having more than 50,000 interactions in 2012-13, with approximately 156.4 million face-to-face interactions, 63.6 million telephone interactions and 218.2 million paper transactions. Of the reported 1.4 billion interactions, 66 per cent were already digital and 34 per cent non-digital.

This research, and extensive subsequent consultations with agencies, confirmed that while many agencies have current plans to increase take up of digital service delivery channels relative to traditional channels, more could be done to accelerate this trend. Many services also require the user to use traditional channels for one or more parts of the service, which may impede further take up of digital channels.

Additionally, the research confirmed that there are several barriers to further implementation of online service delivery that cannot be resolved at an agency level and would require a whole-of-government response. These include legislative and regulatory obstructions (e.g. terms of the *Electronic Transactions Act 1999*), policy settings, fiscal constraints, technological or service related impediments, users who are impeded by limited digital skills or lack of access to the internet and poor integration of services and information between agencies and with third party service providers.

The recommendations of this work are the subject of the *e-Government Ministerial Taskforce*.

Web accessibility

Finance monitors implementation of the *Web Accessibility National Transition Plan* and conducts regular surveys of agency websites.

The data available from these surveys has been regularly used to assist agencies in making informed choices about the types of web tools and services they might use (for example Content Management Systems); to share and re-use solutions already available in other agencies; and to help identify and understand sub-standard web publishing and management practices. However, more opportunity exists to use the data in proactive ways, for example agencies that report that their website does not meet the required standard after a four-year implementation window should be subject to further scrutiny , deemed as substandard and immediately migrated to govCMS.

Furthermore, the government might consider a detailed programme of data collection on the cost of agency websites. A conservative total of more than $200 million is spent on websites that are largely inaccessible to all members of the Australian public. This is an unacceptable situation and while the National Transition Strategy has driven better accessibility there is much anecdotal evidence suggesting that government management of its websites and its associated costs represents a significant portion of agency expenditure.

The New Zealand Government has established a model for estimating the cost of their websites based on the size of the website. A similar opportunity exists here in Australia to adopt this model and assess Australian sites, with a view to consolidating sub-standard offerings.

Web content management systems

There are about 1000 public facing government web sites. Finance has conducted a detailed analysis of the costs and benefits of providing a common platform to support agencies in reducing the costs of establishing and maintaining these web sites. The product of this work is the govCMS platform.

govCMS is provided by Acquia, a web hosting company and it is hosted on the Amazon public cloud platform. govCMS is an open source, cloud based content management and website hosting service for Australian Government entities. govCMS:

- allows government entities to create and manage websites based on best practice, that are compliant with Australian Government standards
- removes the burden for agencies having to own and manage software or infrastructure
- offers a comprehensive service including 24x7 support, website design and development, and managed operations
- offers a range of procurement related benefits to agencies including:
  - significant cost savings by leveraging public cloud infrastructure to reduce hosting and software maintenance costs

- o the use of open source software to eliminate software licensing costs
- o reduced time and effort required for procurement activities—agencies sign an MOU with Finance to leverage the Deed of Standing Offer with the service provider. Professional services can also be procured quickly and easily through the govCMS arrangement
- o easing the compliance burden for entities by meeting Australian Government Standards around design, accessibility, privacy, security and information/record management, so entities do not need to procure core components of these services separately.

While govCMS will be available to all tiers of government (Federal, State and Local) in February 2015, there are some early adopter websites that will transition to govCMS before the official opening including Australia.gov.au (already in the govCMS environment), finance.gov.au and asada.gov.au.

The study on govCMS indicated that the net benefit to government over a four year period could be between $13 and 48 million, depending on take up by agencies. The initial work on australia.gov.au has resulted in a 50 per cent saving in hosting costs alone. The service is not mandated but the study revealed over 400 web sites could be moved to it.

ICT coordinated procurement

ICT coordinated procurement, first established in 2009 with the whole-of-government Microsoft Volume Sourcing Agreement, has provided ongoing savings to agencies and significant returns to the budget:

- $109m in entity retained savings and a further $100m to the Budget from the Microsoft VSA versions 1 and 2 respectively
- $29.5m in entity savings from FY 10/11 to FY 13/14 from the Desktop arrangement, which has seen the price of a standard desktop computer fall from 55 per cent above the Australian average to up to 60 per cent below
- $174m in avoided expenditure in FY 11/12 to FY 16/17 from data centre facilities of an estimated $1b future avoided costs
- $52.5m in entity savings returned to the budget for FY12/13 to FY16/17 from purchases under the Internet-Based Network Connection Services arrangement. A further $35-40m is expected to be returned by 2018/19 through additional contracts and work orders.

An expanded hardware and services panel request for tender will be released in December 2014, covering the mandated desktop hardware base, server hardware and additional services.

Finance services encompass:

- Telecommunication services
- Data centre services
- Desktop hardware
- Microsoft software
- Model ICT contracts.

Other developments of note in these areas are described below.

Cloud Services Panel

Finance is evaluating more than 110 responses to a Request For Tender (RFT) for a Whole-of-Government Cloud Services Panel. The RFT was developed following significant consultation with government and non-government stakeholders. Over 400 separate comments were provided on the proposals from more than 30 responses.

Significant use was made of the AGCTO blog (http://www.finance.gov.au/category/agcto). This, in conjunction with its companion Australian Government Procurement Coordinator blog, continues to be a valuable tool in aiding wide consultation on ICT matters.

The offerings under the panel will include: Software, Platform and Infrastructure as a Service, and Specialist Cloud Services. A service catalogue tool is being implemented that will enable agencies to easily compare the services being offered and then chose from which to request quotes. The panel will be established in January 2015.

Data Centre Facilities

The new Data Centre Facilities Supplies Panel began on 30 June 2014. There are 17 contractors offering 35 sites across Australia. In the ACT, there are 6 contractors offering 7 sites. Two contractors offer container solutions, which is the data centre components, not fitted out with ICT.

The new head agreement is more flexible. The services can be for as little as one rack for one year. There is guidance on the Govdex data centre community site, and further information and assistance can be obtained by contacting: datacentres@finance.gov.au.

The evidence suggests that there will be over $600 million of data centre contracts let by March 2015, the fifth anniversary of the launch of the data centre strategy.

Mobile panel

Finance established the new Mobile Panel in September 2014. There are 17 panel members on this panel.

The new panel has a broader scope of services than the previous panel. Services include mobile phones, smartphones, domestic and international voice and data carriage services; and mobile related services such as mobile device management and mobile app design, development and implementation.

Non-corporate Commonwealth entities are required to procure domestic mobile carriage and mobile devices through the new panel.

ICT Infrastructure

Finance, through Government Network Services Branch, provides a range of ICT network infrastructure services to whole of government. These include the ICON fibre optic service in and around Canberra, the Ministerial Communications Network, and the National Telepresence System.

The Federal Government has avoided $87.5 million in travel costs over the last four years by using the National Telepresence System (NTS) to reduce parliamentarians and public servants' travel costs between capital cities.

- There are 38 operational dedicated NTS room facilities across Australia.

- The National Telepresence Phase 2 (NTS2) has deployed 122 of up to an additional 150 personal desktop Telepresence endpoints for ministers and parliamentary secretaries in their ministerial and electoral offices, and departmental secretaries in their departmental offices.

- The NTS connects the seven Commonwealth government offices, Prime Ministerial and Cabinet offices, Ministerial offices in Parliament House and a Ministers corresponding electoral office and the offices of Premiers and Chief Ministers agencies in every state and territory via a secure, high definition video conferencing facility.

- From October 2009 to October 2014, the system has hosted more than 4,300 meetings; saved over $87.5 million in travel and related costs and ensured that more than 16,900 tonnes of carbon dioxide emissions were not attributed to Australian governments.

ICON is a secure point-to-point fibre connection between buildings in Canberra. These connections are speed and protocol independent. This means that agencies can determine the technology that best meets their requirements. ICON has physical security accreditation to 'Protected', which may be sufficient to carry information up to that level without encryption, depending on the client agency's requirements.

Since its inception, ICON has expanded to over 400 sites around the ACT. Over 80 agencies connect using 150,000 kilometres of fibre. Current estimates indicate the network carries up to 2 terabits per second over its pathways.

As part of its service delivery model to the Commonwealth, ICON distributes Parliamentary Television on behalf of the Department of Parliamentary Services to approved agencies. ICON also carries the voice traffic for the Government Administrative Voice Network (GAVIN). GAVIN connects a government agency's Private Automated Branch Exchange (PABX) to a central PABX that allows free local telephone calls between the connected agencies.

<u>Online services</u>

Finance also provides a range of whole of government online services for agencies and the public. These include

- **www.australia.gov.au** (two million page views per month) and its new beta site www.beta.australia.gov.au

- **www.data.gov.au** (over 5,000 free public data sets provided, covering three levels of government, at no cost to agencies)

- **www.directory.gov.au**—the online directory of government services, ministers, members of Parliament and senior executive service officers, averaging over 40,000 unique visits per month, with an additional 5,000 visits per month to the mobile version of the site.

- the web site platform **www.govspace.gov.au** currently serving 53 public sites and providing agencies with a quick, cheap means of establishing websites, particularly those used for collaboration with stakeholders.

- **www.govdex.gov.au**—the secure, online collaboration platform for government, hosting 20,000 visitors per month

GovMail and GovDesk

Finance is currently reviewing the feasibility of establishing a whole-of-government offering for email (GovMail) and desktop productivity tools (GovDesk) provided as a service using a secure, cloud-hosted environment. It is anticipated that Government agencies could potentially use these services as an alternative to procuring and managing their own email and desktop productivity software and its associated hardware. A decision to proceed will be made in 2015.

Glossary and abbreviations

AGIMO	Australian Government Information Management Office
Agriculture	Department of Agriculture
ANAO	Australian National Audit Office
APS	Australian Public Service
ARC	Australian Research Council
ASIC	Australian Securities and Investments Commission
ATO	Australian Tax Office
AUSTRAC	Australian Transaction Reports and Analysis Centre
BAU	Business as Usual ICT spending, generally referring to operations, support and maintenance activities, but excluding new projects
CAPEX	Capital Expenditure
CBMS	Central Budget Management System
CCE	Corporate Commonwealth Entity
CER	Clean Energy Regulator
CPRs	Commonwealth Procurement Rules
Cuba	Child Support System
Defence	Department of Defence
DFAT	Department of Foreign Affairs and Trade
DHS	Department of Human Services
DoFD	Department of Finance and Deregulation
DSS	Department of Social Services
Education	Department of Education
ERC	Expenditure Review Committee
ERP	Enterprise Resource Planning
Finance	Department of Finance
FMA Act	Financial Management and Accountability Act 1997
Health	Department of Health
HR	Human Resources
ICON	Intra Government Communications Network
ICT	Information and Communications Technology
Immigration	Department of Immigration and Border Protection
MES	Minimum Efficient Scale
MUL	Multi Use List
NCCE	Non Corporate Commonwealth Entity
NPP	New Policy Proposal
OPEX	Operational Expenditure
P3M3	Portfolio, Programme, and Project Management Maturity Model
PCEHR	Personally Controlled Electronic Health Record
PGPA	Public Governance, Performance and Accountability Act 2013
PIR	Post Implementation Review
PMO	Project Management Office
PSW	Parliamentary Workflow System
SBR	Standard Business Reporting
SIGB	Secretaries' ICT Governance Board
TB	Terabytes (one terabyte is 1,000 Gigabytes or 10^{12} bytes of computer storage)
WMS	Work Management System

Data sources

Cross Agency ICT Benchmark	The annual ICT benchmark survey collated and published by Finance. This is currently available from 2008-09 to 2012-13
Ovum US government agencies (2012)	Ovum Technology Trends 2012
Ovum US government agencies (2012)	Ovum Technology Trends 2012
Gartner 2013 – all organisations	Gartner IT Key Metrics Data 2012 IT Enterprise Summary Report
Gartner 2014 – all organisations	Garter IT Key Metrics Data 2014: Executive Summary
Gartner 2014 – Govt (National)	Garter IT Key Metrics Data 2014: Executive Summary
Gartner 2014 – Govt (State)	Garter IT Key Metrics Data 2014: Executive Summary
Inflation adjustments	Australian Bureau of Statistics — www.abs.gov.au