

The Auditor-General
Audit Report No.14 2010-11
Performance Audit

Capitalisation of Software

**Australian Bureau of Statistics
Civil Aviation Safety Authority
IP Australia**

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of Australia 2010

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Canberra ACT
28 October 2010

Dear Mr President
Dear Mr Speaker

The Australian National Audit Office has undertaken an independent performance audit in the *Australian Bureau of Statistics, Civil Aviation Safety Authority and IP Australia* in accordance with the authority contained in the *Auditor-General Act 1997*. I present the report of this audit, and the accompanying brochure, to the Parliament. The report is titled *Capitalisation of Software*.

Following its tabling in Parliament, the report will be placed on the Australian National Audit Office's Homepage—<http://www.anao.gov.au>.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Ian McPhee', is positioned above the printed name.

Ian McPhee
Auditor-General

The Honourable the President of the Senate
The Honourable the Speaker of the House of Representatives
Parliament House
Canberra ACT

AUDITING FOR AUSTRALIA

The Auditor-General is head of the Australian National Audit Office (ANAO). The ANAO assists the Auditor-General to carry out his duties under the *Auditor-General Act 1997* to undertake performance audits and financial statement audits of Commonwealth public sector bodies and to provide independent reports and advice for the Parliament, the Australian Government and the community. The aim is to improve Commonwealth public sector administration and accountability.

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Abbreviations and Glossary

AGN 2007/1	<i>Accounting Guidance Note No 2007/1 Accounting for Internally Developed Software</i> issued by the Department of Finance and Deregulation.
Accounting standards	An accounting standard is a technical pronouncement that sets out the required accounting for particular types of transactions and events. The accounting requirements affect the preparation and presentation of an entity's financial statements. Accounting standards are released by the Australian Accounting Standards Board (AASB).
Amortisation	The systematic allocation of the depreciable amount of an intangible asset over its useful life. (AASB 138 paragraph 8).
Asset	A resource controlled by an entity as a result of past events; and from which future economic benefits are expected to flow to the entity. (AASB 138 paragraph 8).
Australian Accounting Standards Board (AASB)	The Australian Government agency responsible for developing, issuing and maintaining accounting standards.
Capitalisation	Capitalisation is the addition to the balance sheet as an asset of an amount that would otherwise have been treated as an expense.
Capital Management Plan (CMP)	A comprehensive and structured approach to the long-term management of an entity's assets portfolio to deliver services efficiently and effectively. It details how an entity's Asset Management Strategy will be put in place. The Capital Management Plan is a data repository of asset projections over a multi-year period, including decisions on funding of these asset projections through the development of a capital budget.

Computer software	A general term used to describe a computer program or suite of programs that perform a function.
Cost	The amount of cash or cash equivalents paid or the fair value of the other consideration given to acquire an asset at the time of its acquisition or construction or, where applicable, the amount attributed to that asset when initially recognised in accordance with the specific requirements of other Australian Accounting Standards. (AASB 138 paragraph 8).
Development	The application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems or services before the start of commercial production or use. (AASB 138 paragraph 8).
FMIS	Financial Management Information System.
Finance Minister's Orders (FMOs)	The Financial Management and Accountability Orders (Financial Reporting), which outline the requirements for the preparation of financial statements of Australian Government agencies and authorities. They are issued by the Minister for Finance and Deregulation.
ICT	Information and Communications Technology.
Impairment and impairment assessment	An asset is impaired if the amount shown in the balance sheet exceeds its actual value to an entity. An entity must make an annual assessment of whether there is any indication that the amount shown in the balance sheet for an asset exceeds its actual value to the entity. If there is any indication that an asset is impaired the entity must reduce the amount shown in the balance sheet for the asset.
Intangible asset	An identifiable non-monetary asset without physical substance. (AASB 138 paragraph 8). Subject to meeting specific criteria, common examples are computer software, patents, copyrights and marketing rights.

IGIAs	Internally generated intangible assets.
Internally generated software	The software developed by the entity, or purchased by the entity, but significantly modified for internal use.
Life-cycle costing /life-cycle approach	A key asset management tool that takes into account the whole-of-life implications of planning, acquiring, operating, maintaining and disposing of an asset.
Research	Original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding. (AASB 138 paragraph 8).
Useful life	The period over which an asset is expected to be available for use by an entity; or the number of production or similar units expected to be obtained from the asset by an entity. (AASB 138 paragraph 8).

Summary and Recommendations

Summary

Introduction

1. Computer software is a core part of the infrastructure of Australian Government entities, and its use permeates every aspect of their daily business.¹ As at 30 June 2009, the value of Australian Government software assets was \$2779 million.²

2. Software is either purchased or internally developed by an entity. Purchased software is referred to as off-the-shelf software and is a ready-built solution that an entity can buy to address a business need.³ Internally generated software (also referred to as internally developed software) is generally developed by the entity itself to meet specific business needs when an off-the-shelf option is not available, or is significantly modified for internal use. When entities develop their own software, they are able to tailor solutions to meet their specific requirements, but often at an increased cost compared to off-the-shelf solutions. In the government context, internally generated software is commonly built to support particular government programs and has business rules which follow government legislative and policy requirements.⁴

3. Software has considerable costs attached which, depending on their nature, are capitalised as an asset, or expensed. It is important these costs are correctly accounted for to provide users of financial statements with accurate information on an entity's software assets and the costs of its operations. Understanding the true value of software assets better enables entities to plan future investments to replace, extend or improve their software assets, in support of strategic and operational objectives.

¹ Computer software is a general term used to describe a computer program or collection of programs that perform a function.

² Department of Finance and Deregulation, *Consolidated Financial Statements For the Year Ended 30 June 2009*, Note 21. Available at <<http://www.finance.gov.au/publications/commonwealth-consolidated-financial-statements/2009.htm>> p 92. [Accessed July 2010.]

³ Examples of off-the-shelf software include accounting and human resources systems and office support packages. In some cases, for example some office support packages, entities purchase licences to operate the software.

⁴ Examples of internally generated software include social security, tax collection and healthcare systems.

Accounting and reporting requirements

4. To support accountability and decision-making in relation to the use of scarce resources, Australian Government entities are required to comply with Australian Accounting Standards and the *Financial Management and Accountability Orders (Financial Reporting)* (FMOs).⁵ Together, the Australian Accounting Standards and the FMOs establish how entities should record and present their financial position and transactions. In addition, the Department of Finance and Deregulation (Finance) has issued *Accounting Guidance Note No. 2007/1* (Finance Guidance Note) on *Accounting for Internally Developed Software* that provides guidance on what costs should be capitalised for internally developed software intended for internal use.⁶

5. For accounting purposes, software is generally treated as an intangible asset.⁷ The key applicable accounting standards relating to software assets are AASB 138 *Intangible Assets* and AASB 136 *Impairment*. These standards address when an asset exists and how purchased and internally generated intangible assets should be valued. In particular, AASB 138 defines intangible assets, and prescribes the recognition, measurement and disclosure requirements applicable to intangible assets. The standard imposes more stringent recognition criteria on internally generated intangible assets than for other assets that are capitalised. Under AASB 138, software costs are either:

- capitalised as an asset on the basis that the costs result in a future economic benefit to the entity and they can be measured reliably; or
- expensed in the year in which they are incurred.

⁵ Each year the Minister for Finance issues the *Financial Management and Accountability Orders (Financial Reporting)* (FMOs), which outline requirements and provide guidance in relation to the preparation of financial statements by Australian Government entities. The FMOs are relevant to all reporting entities covered by section 49 of the *Financial Management and Accountability Act 1997* or clause 2 of Schedule 1 to the *Commonwealth Authorities and Companies Act 1997*. The FMOs for reporting periods ending on or after 1 July 2009 are available at <http://www.finance.gov.au/publications/finance-ministers-orders/index.html>.

⁶ Department of Finance and Deregulation, *Accounting Guidance Note No. 2007/1 Accounting for Internally Developed Software*. The aim of accounting guidance notes is to provide non-mandatory explanation and examples relating to the interpretation and application of Australian Accounting Standards and the Finance Minister's Orders by Australian Government reporting entities. The Guidance Note is available at <http://www.finance.gov.au/publications/accounting-guidance-notes/index.html>. [Accessed July 2010.]

⁷ To be treated as an intangible asset computer software must first meet the capitalisation criteria in AASB 138 *Intangible Assets* which are discussed later in this report.

6. AASB 138 divides the development of internally generated intangible assets into two stages: a research stage and a development stage. Research includes activities aimed at gaining new scientific or technical knowledge and understanding, evaluating alternatives and making selection decisions. The development stage includes activities that relate to design, construction and testing prior to the asset being available for use.⁸ All costs incurred during the research stage are expensed when they are incurred. Costs incurred during the development stage can be capitalised if they meet specific requirements set out in AASB 138, otherwise they should be expensed.⁹

7. The Finance Guidance Note outlines the key points of AASB 138 and provides examples of costs that should be capitalised or expensed:

- capital items include staff, contractor and supplier expenses directly relating to developing or testing the asset in the development phase; and
- expense items include project governance committees, stakeholder meetings, training¹⁰ and developing user manuals.

8. To correctly value software assets, entities need to be satisfied there is a clear connection between costs that are capitalised and the resulting asset. Under AASB 138 the cost of a purchased asset is its purchase price *plus* any directly attributable cost of preparing the asset for its intended use. Similarly, for an internally generated intangible asset, the cost of the asset comprises *all* directly attributable costs during the development phase necessary to create, produce, and prepare the asset to be capable of operating in the manner intended by management.¹¹

9. For accountability purposes, it is important that the value of software assets recorded by entities in their financial statements continues to reflect the

⁸ AASB 138 *Intangible Assets* paragraph 8. Available at <http://www.aasb.com.au/admin/file/content105/c9/AASB138_07-04_COMPapr07_07-07.pdf> [Accessed May 2010.]

⁹ These requirements relate to: the technical feasibility of completing the intangible asset so that it will be available for use or sale and generate probable future economic benefits; and that expenditure attributable to the intangible asset during the development phase can be measured reliably. AASB 138 *Intangible Assets* paragraph 57 available at <http://www.aasb.com.au/admin/file/content105/c9/AASB138_07-04_COMPapr07_07-07.pdf> [Accessed May 2010.]

¹⁰ Excluding training that is in-built into a software asset, for example, a training module.

¹¹ The cost of the asset is the sum of expenditure incurred from the date when the intangible asset first meets the recognition criteria and comprises all directly attributable costs during the development phase.

expected benefits to be obtained from their use. For this reason, entities need to determine the useful life of software assets, and amortise their cost over the useful life of the assets. In addition, AASB 136 prescribes the procedures an entity must apply to ensure its non-current assets are carried at no more than their recoverable amounts.¹² AASB 136 requires that, at each reporting date, an entity assess whether there is any indication that an asset is recorded at greater than its recoverable amount and if so, to recognise an impairment loss.¹³

Planning for software asset investments

10. Correctly valuing and amortising software assets helps entities understand future asset funding requirements. Consequently, the accounting treatment of software assets forms an input to software asset planning. More broadly, decision-making on the purchase and development of software assets should take into account entities' information and communications technology (ICT) and capital management planning.

11. ICT planning establishes an entity's priorities for ICT in support of business directions. In making deliberations about software purchases and development, entities generally need to take into account the risks associated with software assets, such as technical obsolescence and changes in business requirements. Another key aspect of ICT planning is consideration of the whole-of-life cost implications of planning, acquiring, operating, maintaining and disposing of software assets.

12. An entity's capital management plan (CMP) outlines how the entity will allocate scarce capital resources over time, to meet entity priorities. Having an entity's ICT plans align with its CMP, typically improves communication between the ICT and Finance areas, thereby helping to ensure

¹² An asset would be carried at more than its recoverable amount if its carrying amount exceeds the amount to be recovered through use or sale. AASB 136 states that where an asset is carried at more than its recoverable amount the asset is impaired and the entity is required to recognise an impairment loss.

¹³ Under AASB 136 paragraph 12 indicators that shall be considered, as a minimum, include the following external sources of information: unexpected significant decline in the asset's market value; significant changes with an adverse effect on the entity including changes to the market, economic or legal environment in which the entity operates; changes in market interest rates that are likely to affect the calculation of an asset's value in use; and the carrying amount of the entity's net assets is more than its market capitalisation. In addition, the following internal sources of information should be considered: obsolescence or physical damage to an asset; significant changes with an adverse effect on the entity such as assets becoming idle and plans to discontinue or restructure operations; and evidence from internal reporting that an asset's economic performance may be worse than expected. Available at <http://www.aasb.com.au/admin/file/content105/c9/AASB136_07-04_COMPjun09_07-09.pdf>.

available funding is directed to key software purchases and development activities, in a timely manner.

Audit approach

13. The objective of the audit was to assess whether entities properly accounted for software assets, and adopted an integrated planning approach to inform software asset investment decisions.

14. The main focus of the audit was on whether entities accounted for software costs in accordance with relevant accounting standards and the FMOs, paying particular attention to the standard elements of an internal control framework¹⁴ and accounting practices. In addition, in the context of software asset planning, the audit considered whether entities assessed the risks associated with software assets, used life-cycle costing approaches, and aligned ICT and capital management plans, to inform decision-making on software asset investments.

15. The audit was conducted at three selected entities:

- the Australian Bureau of Statistics (ABS)—the value of the ABS' software assets was \$84.2 million at 30 June 2009. This represented around 62 per cent of the ABS' non-financial assets;¹⁵
- the Civil Aviation Safety Authority (CASA)—the value of CASA's software assets was \$26.7 million at 30 June 2009, which represented around 56 per cent of its non-financial assets;¹⁶ and
- IP Australia—the value of IP Australia's software assets was \$25.7 million at 30 June 2009, which represented around 50 per cent of its non-financial assets.¹⁷

¹⁴ The standard elements of an internal control framework are: risk assessment, control environment, control activities, communication of information and monitoring and review.

¹⁵ Australian Bureau of Statistics *Annual Report 2008–09* pp. 202 and 233. Available at <[http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/FB4BA2DC4D523F38CA25765D00125C48/\\$File/10010_2008-09.pdf](http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/FB4BA2DC4D523F38CA25765D00125C48/$File/10010_2008-09.pdf)>

¹⁶ Civil Aviation Safety Authority *Annual Report 2008–09*, pp. 98 and 121. Available at <http://www.casa.gov.au/wcmswr/assets/main/lib91185/casa_ar_0809_financials.pdf>

¹⁷ Department of Innovation *Annual Report 2008–09*, pp. 252 and 278. Available at <http://www.innovation.gov.au/Section/AbouttheDepartment/Annual%20Report%20200809/resources/pdf/DIISR_ip_australiafinancial_statements.pdf>

16. The audit examined for each entity: accounting policy and guidance; governance arrangements supporting software capitalisation, and arrangements to capture and report relevant costs for a sample of 10¹⁸ internally generated software assets; software project closure processes for a sample of five software assets; and approvals to purchase five software assets.

17. The audit also assessed whether relevant recommendations contained in Audit Report No.54 2002–03, *Capitalisation of Software* (provided in Appendix 1: Recommendations from Audit Report No.54 2002–03) had been implemented by the audited entities.

Overall conclusion

18. Computer software is a key asset of the Australian Government and had a value in excess of \$2.7 billion as at June 2009.¹⁹ Australian Government entities are obliged to account for software costs in accordance with relevant accounting standards and the requirements set out in the Finance Minister's Orders (FMOs). These requirements are designed to ensure users of financial statements are provided with reliable information on the value of entities' software assets and the cost of their operations. Correctly valuing software assets provides a sound basis for their management in support of effective program delivery.

19. There are a number of inherent difficulties in accounting for software. These involve meeting the definition and recognition criteria for intangible assets; measuring and attributing costs associated with software development; and determining useful life and assessing asset impairment, given the rapidly changing business and technological environment. The interpretation of the accounting standard on intangible assets (AASB 138)²⁰ requires judgement in terms of what software costs should be capitalised and expensed. AASB 138 places the onus on entities to be satisfied there is a clear connection between costs that are capitalised and the resulting asset. In this light, a prudent

¹⁸ Internally developed software initiation documents were reviewed for five software assets under construction and five recently developed assets.

¹⁹ Department of Finance and Deregulation *Consolidated Financial Statements For the Year Ended 30 June 2009*, Note 21. Available at <http://www.finance.gov.au/publications/commonwealth-consolidated-financial-statements/docs/CFS_2009.pdf> p. 92. [Accessed July 2010.]

²⁰ Australian Government entities have been required to comply with AASB 138 for annual reporting periods commencing on or after 1 January 2005. As such, it is expected that entities would have established effective arrangements to account for software assets in line with AASB 138 *Intangible Assets*.

approach should be taken to avoid over capitalising costs.²¹ For internally generated intangible assets, entities need to ensure that only costs that can be measured reliably and directly attributed to the development of software assets are capitalised.

20. In a broader planning context, it is beneficial for decision-making on software asset purchases and development to have regard to risks associated with software assets, and be based on the whole-of-life costs of ownership of software assets. Aligning ICT and capital management plans also assists in ensuring that funding is directed to software assets that best achieve strategic and operational objectives.

21. Overall, each of the audited entities had properly accounted for their software assets. The entities' approaches were generally underpinned by appropriate: accounting policy and guidance; project governance arrangements supporting software capitalisation; and systems and practices that enabled the capture and reporting of relevant capital costs. Nevertheless, ABS needed to improve its approach to software asset valuation. There was also scope for entities to more effectively use software project closure processes and post implementation reviews (PIRs), in support of their approaches to software capitalisation. Finally, each of the entities had only partially adopted integrated planning for software asset investments.

22. Two or more of the entities had implemented the majority of relevant recommendations in the ANAO's 2002–03 performance audit on capitalisation of software.²²

23. To improve the valuation of software assets in accordance with the expected benefits to be derived from their use, and strengthen planning for software asset investments, entities should:

²¹ *AASB Framework for the Preparation and Presentation of Financial Statements* paragraph 37 states that preparers of financial statements have to contend with the uncertainties that inevitably surround many events and circumstances. Such uncertainties are recognised by the disclosure of their nature and extent and by the exercise of prudence in the preparation of the financial statements. Prudence is the inclusion of a degree of caution in the exercise of the judgements needed in making the estimates required under conditions of uncertainty, such that assets or income are not overstated and liabilities or expenses are not understated. Available at <http://www.aasb.com.au/admin/file/content105/c9/Framework_07-04nd.pdf.>

²² Australian National Audit Office, Audit Report No.54 2002-03, *Capitalisation of Software*, available at <http://www.anao.gov.au/uploads/documents/2002-03_Audit_Report_54.pdf.>

- ensure that only costs that meet the definition and recognition criteria for intangible assets, and can be both measured reliably and directly attributed to the development of software assets, are capitalised (see Recommendation No.1);
- establish sound software project closure processes tailored to the scale and risk profile of projects (see Recommendation No.2);
- undertake PIRs of software projects on the basis of predetermined criteria (see Recommendation No.3); and
- have regard to software asset risks and whole-of-life costs, while aligning ICT and capital management plans, to inform software asset investment decisions (see Recommendation No.4).

Key findings

Accounting for software assets (Chapter 2)

Accounting policy and guidance

24. Accounting policy and guidance at CASA and IP Australia generally reflected the relevant accountings standards. The guidance at ABS was in need of updating and could be further improved by providing more material on how to comply with the necessary requirements.

Governance arrangements supporting capitalisation of software

25. All entities had governance arrangements in place that supported appropriate approaches to the capitalisation of software, including management oversight of software purchases and development. For each entity there was either a clearly defined finance team or designated finance position (project accountant) assigned to support project managers and ensure that the treatment of software costs complied with relevant accounting standards and the FMOs.

26. The ANAO examined project approval processes for a sample of 10 internally generated and five purchased software assets in each entity.²³ All of the software projects had appropriate initiation and approval documentation. Although, at the time of the audit, none of the entities required research and

²³ Internally developed software initiation documents were reviewed for five software assets under construction and five recently developed assets.

development phases to be separately identified at the project initiation stage for internally generated software assets. Not having the split between research and development clear from the inception of a project increases the risk that costs are inappropriately treated.

Capture of time and cost information

27. In each entity, an hourly or daily costing rate was applied to time recorded against software projects to calculate the cost of labour effort involved in software development. Each entity had a different approach to determining the costing rate used. CASA's and IP Australia's approaches were generally in accordance with the principles of AASB 138. For several years the ABS had inappropriately capitalised costs related to training and indirect administrative service activities which were included in the overall costing rate. These costs are excluded under AASB 138.²⁴ The cumulative impact of incorrectly capitalising such costs was not significant enough to result in a material error in ABS' financial statements.²⁵ ABS advised it will no longer capitalise these costs.

28. In addition, the ABS was unable to demonstrate that some of the other costs included in its costing rate (predominantly IT and administrative costs) were directly attributed to the development of software assets, as required by AASB 138. As a result, during ABS' 2009–10 financial statements process, ABS revised its attribution approach and did not capitalise these costs. The impact of this change in estimation process was recognised prospectively, commencing for the 2009–10 financial year, and resulted in an increase of \$2.1 million in employee benefits expenses, and a corresponding reduction to internally generated software assets, in ABS' 2009–10 financial statements.

²⁴ Training costs are not able to be capitalised as entities do not usually have sufficient control over the expected future economic benefits arising from training staff. Similarly, indirect expenditure may be incurred without acquiring or creating an asset that can be recognised under AASB 138 *Intangible Assets*.

²⁵ A financial statement audit undertaken in accordance with Australian Accounting Standards is designed to provide reasonable assurance that a financial report taken as a whole is free from material misstatement. Reasonable assurance is a concept relating to the accumulation of the audit evidence necessary for the auditor to conclude that there are no material misstatements in the financial report taken as a whole. AASB 1031 *Materiality* paragraph 4 states that information is material if its omission, misstatement or non-disclosure has the potential to adversely affect: (a) decisions about the allocation of scarce resources made by users of the financial report; or (b) the discharge of accountability by the management or governing body of the entity. Available at <www.aasb.com.au/admin/file/content102/c3/AASB1031_9-95.pdf>

29. ABS' approach involved attributing a range of costs to the development of software on the basis of costs derived from its business costing model. The costing model was designed for internal costing purposes and was also used for software capitalisation, however it did not take into account all the specific requirements of AASB 138.

30. ABS' approach to capitalising costs highlights the need for entities to be aware that AASB 138 imposes tighter requirements on which costs can be capitalised than entities may apply for internal costing purposes. Where estimates are used by entities to capitalise costs (for example, the contribution of IT support costs at ABS), they should be properly supported by analysis to ensure that the costs are directly attributable to developing the asset and can be measured reliably. The ANAO considers a common sense approach should be taken. For example, on the basis of sound analysis, entities could determine costs for capitalisation purposes from the information contained in their costing models. Analysis should be subject to periodic review to ensure any assumptions used to capitalise costs remain valid.

Project closure and review

31. The ANAO examined project closure processes for a sample of five software projects in each entity. CASA had strong processes supporting project closure. In IP Australia, while documented closure procedures were sound, three of five software projects examined had costs recorded against assets after the asset was capitalised. In ABS, project closure processes did not require sign-off from a senior management committee or project board when the asset was ready for use. Acceptance of the asset as complete was based on the judgement of the project manager after the completion of user acceptance testing, regardless of value. The absence of sound software project closure processes, tailored to the scale and risk profile of projects, increases the risk that software assets are capitalised at a value that does not reflect the expected benefits to be obtained from their use, and are not amortised appropriately.

32. None of the 10 completed software projects examined for each entity had been subject to a PIR. The entities advised they only undertake PIRs for projects that encounter serious difficulties. A pragmatic approach, that would better support continuous improvement in software project management and accounting, would be to conduct PIRs on the basis of predetermined criteria, such as the significance of projects in terms of value or business need and the extent of project management issues that have arisen.

Impairment reviews

33. As part of their 2008–09 financial statements process, all of the entities assessed whether there was any indication that software assets may be impaired and, where appropriate, reduced the value of the asset.

Planning for software asset investments (Chapter 3)

34. ABS and IP Australia had not formally used software asset risk profiling to inform decision-making on asset investments, although steps were being taken in this direction. In 2009, ABS undertook a review and developed a risk profile for each software asset. At the time of the audit, the risk profile was not being used to guide capital management planning processes. In 2008, CASA completed a review of its asset management framework, which incorporated asset risk profiling of all assets, and formed the basis of its CMP. IP Australia supported asset replacement decisions informally using asset criticality ratings as reflected in its business continuity plans.

35. CASA included life-cycle costing in its software asset business cases/initiation documents and reflected such costs in its annual ICT plan. ABS' and IP Australia's current policies, procedures and practices did not support the life-cycle costing of intangible assets. Both entities had updated their guidance and were in the process of implementing revised templates for new projects to provide for estimated ongoing costs, such as maintenance, as well as disposal/decommissioning costs.

36. None of the entities had formally aligned both their annual and longer term ICT plans with their CMP. Although, CASA had formal linkages between its annual ICT plan and its CMP.

Entities' responses

37. Each of the audited entities agreed with the four recommendations in this report. Entities' responses to each of the recommendations are shown in the body of the report following the relevant recommendation. Entities' general comments are provided below.

Australian Bureau of Statistics

38. The Australian Bureau of Statistics (ABS) welcomes the audit and agrees with the recommendations. The audit report provides a valuable framework to support further improvement with the management and capitalisation of software within the ABS environment. During 2009–10 the

ABS undertook a number of improvements surrounding the agency's overall capital management and continues to do so. A number of corrective actions were undertaken before the audit was completed.

Civil Aviation Safety Authority

39. CASA welcomes any constructive review and external scrutiny of its processes and procedures. CASA has a sound process supporting the capitalisation of software that can be enhanced by the recommendations in the report. It is CASA's intention to apply appropriate measures to ensure the enhancements are put in place.

IP Australia

40. IP Australia agrees with the recommendations of the audit of Software Capitalisation. IP Australia is pleased that the ANAO has acknowledged the work already done by IP Australia to manage its software assets and ensure they are appropriately accounted for. The recommendations from the report will assist IP Australia to make further improvements to its processes for software asset management.

Recommendations

The recommendations are based on findings from fieldwork at the audited entities and are likely to be relevant to other Australian Government entities. All Australian Government entities are encouraged to assess the benefits of implementing these recommendations in light of their own circumstances, including the extent to which each recommendation, or part thereof, is addressed by practices already in place.

Recommendation No.1
Paragraph 2.58

The ANAO recommends that, to provide assurance software assets are appropriately valued in accordance with external reporting requirements, entities:

- review their approach to capitalising costs to ensure only costs that can be measured reliably and are directly attributable to the development of software assets are capitalised; and
- where estimates or attribution processes are used, ensure they are properly supported and subjected to periodic review to confirm they reasonably represent the actual costs incurred in the development of software assets.

Entities' responses: Agreed

Recommendation No.2
Paragraph 2.78

The ANAO recommends that entities establish software project closure processes, which confirm the value of software assets, while ensuring amortisation charges are appropriate and commenced in a timely manner.

Entities' responses: Agreed

Recommendation No.3
Paragraph 2.95

The ANAO recommends that entities undertake post implementation reviews for software projects on the basis of predetermined criteria, such as the significance of projects in terms of value or business need or the extent of project management issues that have arisen.

Entities' responses: Agreed

**Recommendation
No.4
Paragraph 3.30**

To assist in directing funding to software assets that best support strategic and operational objectives, the ANAO recommends that entities:

- periodically assess the risk profile of existing software assets;
- base software asset investment decisions on whole-of-life costs; and
- align information and communications technology plans with capital management plans.

Entities' responses: Agreed

Audit Findings

1. Introduction

This chapter introduces accounting and reporting requirements, and important asset management principles applicable to Australian Government software assets. The chapter also outlines the audit objective and approach.

Background

1.1 Computer software is a general term used to describe a computer program or suite of programs that perform a function. Computer software is a core part of the infrastructure of Australian Government entities, and its use permeates every aspect of their daily business. At 30 June 2009, the value of Australian Government software assets was \$2779 million.²⁶

1.2 Computer software is often divided into:

- application software—software that users directly interact with to perform a particular function such as word processors, Internet browsers and image editing programs;
- middleware—software that connects separate applications; and
- operating systems—software that mediates access between the computer hardware such as a keyboard, and application programs.

1.3 Software is either purchased or internally developed by an entity. Purchased software is referred to as off-the-shelf software and is a ready-built solution that an entity can buy to address a business need.²⁷ Internally generated software (also referred to as internally developed software) is generally developed by an entity itself when an off-the-shelf option is not available, or is significantly modified for internal use. When entities develop their own software they are able to tailor solutions to meet their specific requirements, but often at an increased cost compared to off-the-shelf solutions. In the government context, internally generated software is often

²⁶ Department of Finance and Deregulation, *Consolidated Financial Statements For the Year Ended 30 June 2009*, Note 21. Available at <http://www.finance.gov.au/publications/commonwealth-consolidated-financial-statements/docs/CFS_2009.pdf> p. 92. [Accessed July 2010.]

²⁷ Examples of off-the-shelf software include accounting and human resources systems and office support packages. In some cases, for example some office support packages, entities purchase licences to operate the software.

built to support particular government programs and has business rules which follow government legislative and policy requirements.²⁸

Accounting and reporting requirements

1.4 To support accountability and decision-making in relation to the use of scarce resources, Australian Government entities are required to comply with Australian Accounting Standards and the *Financial Management and Accountability Orders (Financial Reporting)* (FMOs).²⁹ Together, the Australian Accounting Standards and FMOs establish how entities should record and present their financial position and transactions. In addition, the Department of Finance and Deregulation (Finance) has issued Accounting Guidance Note No. 2007/1 (Finance Guidance Note) on *Accounting for Internally Developed Software* that provides guidance on what costs should be capitalised for internally developed software intended for internal use.³⁰

1.5 For accounting purposes, software is generally treated as an intangible asset.³¹ An intangible asset is defined as an identifiable non-monetary asset without physical substance.³² The key applicable accounting standards relating

²⁸ Examples of internally generated software include social security, tax collection and healthcare systems.

²⁹ Each year the Minister for Finance issues the *Financial Management and Accountability Orders (Financial Reporting)* (FMOs), which outline requirements and provide guidance in relation to preparation of financial statements by Australian Government entities. The FMOs are relevant to all reporting entities covered by section 49 of the *Financial Management and Accountability Act 1997* or clause 2 of Schedule 1 to the *Commonwealth Authorities and Companies Act 1997*. The FMOs for reporting periods ending on or after 1 July 2009 are available at <<http://www.finance.gov.au/publications/finance-ministers-orders/index.html>>.

³⁰ Department of Finance and Deregulation, Accounting Guidance Note No. 2007/1 *Accounting for Internally Developed Software*. The aim of accounting guidance notes is to provide non-mandatory explanation and examples relating to the interpretation and application of the FMOs and Australian Accounting Standards. The Finance Guidance Note is available at <<http://www.finance.gov.au/publications/accounting-guidance-notes/index.html>>. The Finance Guidance Note outlines the key points of AASB 138 *Intangible Assets* and provides examples of costs that should be capitalised or expensed. Costs that should be capitalised include staff, contractor and supplier expenses directly relating to developing or testing the asset in the development phase. Costs that should be expensed include costs relating to project governance committees, stakeholder meetings, training and developing user manuals.

³¹ To be treated as an intangible asset computer software must first meet the capitalisation criteria in AASB 138 *Intangible Assets* which are discussed later in this report.

³² AASB 138 *Intangible Assets* states that intangible assets may be contained in or on a physical substance such as computer software on a compact disc. In determining whether an asset that incorporates both intangible and tangible elements should be treated under AASB 116 *Property, Plant and Equipment* or as an intangible asset under AASB 138 *Intangible Assets* an entity should use judgement to assess which element is more significant. AASB 138 *Intangible Assets* paragraph 12. Available at <http://www.aasb.com.au/admin/file/content105/c9/AASB138_07-04_COMPjun09_07-09.pdf> [Accessed July 2010].

to software assets are AASB 138 *Intangible Assets* and AASB 136 *Impairment*. These standards address when an asset exists and how purchased and internally generated software assets should be valued. In particular, AASB 138 defines intangible assets, and prescribes the recognition, measurement and disclosure requirements applicable to intangible assets. The standard imposes more stringent recognition criteria on internally generated intangible assets than for other assets that are capitalised.

1.6 The following sections outline the key requirements of AASB 138 and AASB 136 in relation to the:

- recognition of software assets;
- valuation of software assets;
- assignment of useful life; and
- impairment of software assets.

Recognition of software assets

1.7 For an item of software to be recognised as an intangible asset it must meet the definition and recognition criteria set out in AASB 138. To meet the definition of an intangible asset, the asset must: be *separately identifiable*; be *controlled by the entity*; and will *result in future economic benefits*.³³ An intangible asset shall be recognised if, and only if:³⁴

- it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity; and
- the cost of the asset can be measured reliably.³⁵

1.8 Under AASB 138 software costs are either:

- capitalised as an asset on the basis that the costs result in a future economic benefit to the entity and they can be measured reliably; or

³³ To be separately identifiable, an asset must be either capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged; or arise from contractual or legal rights. AASB 138 *Intangible Assets* paragraph 12. Available at <http://www.aasb.com.au/admin/file/content105/c9/AASB138_07-04_COMPjun09_07-09.pdf>. [Accessed July 2010.]

³⁴ *ibid.*, paragraph 21.

³⁵ An entity shall assess the probability of expected future economic benefits using reasonable and supportable assumptions that represent management's best estimate of the set of economic conditions that will exist over the useful life of the asset. AASB 138 *Intangible Assets* paragraphs 21 and 22. Available at <http://www.aasb.com.au/admin/file/content105/c9/AASB138_07-04_COMPjun09_07-09.pdf>. [Accessed May 2010.]

- expensed in the year in which they are incurred.

1.9 Internally generated intangible assets (IGIAs) are subject to additional recognition requirements compared to purchased intangible assets, as it can be more difficult to assess whether an IGIA qualifies for recognition. This is due to complexities in identifying whether, and when, there is an identifiable asset that will generate expected future economic benefits, and in determining the cost of the asset reliably. Therefore, AASB 138 requires that to assess whether an IGIA meets the criteria for recognition, an entity classifies the generation of the asset into a research phase and a development phase.

1.10 Research includes activities aimed at gaining new scientific or technical knowledge and understanding, evaluating alternatives and making selection decisions. The development stage includes activities that relate to design, construction and testing prior to the asset being available for use.³⁶

1.11 No intangible asset arising from the research phase of a project can be recognised as an asset as the entity cannot demonstrate that an intangible asset exists that will generate probable future economic benefits. Therefore, expenditure on research is to be recognised as an expense when it is incurred.

1.12 An intangible asset arising from development shall only be recognised if an entity can demonstrate all of the following:³⁷

- the technical feasibility of completing the intangible asset so that it will be available for use or sale;
- its intention to complete the intangible asset and use or sell it;
- its ability to use or sell the intangible asset;
- how the intangible asset will generate probable future economic benefits. Among other things, the entity can demonstrate the existence of a market for the output of the intangible asset or the intangible asset itself or, if it is to be used internally, the usefulness of the intangible asset;
- the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
- its ability to measure reliably the expenditure attributable to the intangible asset during its development.

³⁶ *ibid.*, paragraph 8.

³⁷ *ibid.*, paragraph 57.

1.13 In addition, if an entity cannot distinguish the research phase from the development phase for an internal project to create an intangible asset, the entity must treat the expenditure on that project as if it were incurred in the research phase only. Overall, as a result of the asset recognition criteria in AASB 138 and general accounting principles, entities should take a prudent approach to capitalising software assets.³⁸ Appendix 2: Key costs that can be capitalised or expensed, provides examples of costs that can be capitalised in relation to an IGIA under AASB 138 and those that must be expensed.

Valuation of software assets

1.14 The cost of a purchased intangible asset comprises its purchase price, and any directly attributable cost of preparing the asset for its intended use.³⁹ The cost of an IGIA is the sum of expenditure incurred from the date when the intangible asset first meets the recognition criteria. It comprises all directly attributable⁴⁰ costs during the development phase necessary to create, produce, and prepare the asset to be capable of operating in the manner intended by management.

Assignment of useful life

1.15 Once an asset is available for use it must be amortised over its estimated useful life, and be reported net of cumulative amortisation at each reporting date. The assignment of useful life is a reflection of the future economic benefit expected to be provided by a software asset. Useful life:

³⁸ AASB *Framework for the Preparation and Presentation of Financial Statements* paragraph 37 states that preparers of financial statements have to contend with the uncertainties that inevitably surround many events and circumstances. Such uncertainties are recognised by the disclosure of their nature and extent and by the exercise of prudence in the preparation of the financial statements. Prudence is the inclusion of a degree of caution in the exercise of the judgments needed in making the estimates required under conditions of uncertainty, such that assets or income are not overstated and liabilities or expenses are not understated. Available at <http://www.aasb.com.au/admin/file/content105/c9/Framework_07-04nd.pdf>.

³⁹ AASB 138 *Intangible Assets* paragraphs 27 and 28. Available at <http://www.aasb.com.au/admin/file/content105/c9/AASB138_07-04_COMPjun09_07-09.pdf> [Accessed May 2010.]

⁴⁰ Examples of directly attributable costs, are: (a) costs of materials and services used or consumed in generating the intangible asset; and (b) costs of employee benefits (as defined in AASB 119) arising from the generation of the intangible asset. Costs that are not components of the cost of an IGIA include (a) selling, administrative and other general overhead expenditure unless this expenditure can be directly attributed to preparing the asset for use; (b) identified inefficiencies and initial operating losses incurred before the asset achieves planned performance; and (c) expenditure on training staff to operate the asset. AASB 138 *Intangible Assets* paragraph 66. Available at <http://www.aasb.com.au/admin/file/content105/c9/AASB138_07-04_COMPjun09_07-09.pdf> [Accessed May 2010.]

- determines annual amortisation charges over the life of the asset; and
- provides a timeframe for capital management planning for either replacement or disposal of assets.

1.16 Factors which must be considered in determining the useful life of an intangible asset include the expected usage of the asset by the entity; technical, technological, commercial or other types of obsolescence; and, the level of maintenance expenditure required to obtain the expected future economic benefits from the asset, including the entity's ability and intention to reach such a level. Under AASB 138 the amortisation period and the amortisation method for an intangible asset with a finite useful life should be reviewed at least at the end of each annual reporting period.

1.17 AASB 138 requires entities to determine the useful life of software assets, and amortise their cost over the useful life of the assets. The amount amortised should reflect the expected consumption of the asset's future economic benefits. If the pattern of consumption cannot be reliably determined, the straight-line method should be used.

Impairment of software assets

1.18 AASB 136 requires that where an asset is carried at more than its recoverable amount the asset is described as impaired and the entity is required to recognise an impairment loss. Assessing asset impairment ensures that losses of future economic benefits are properly recognised in a timely manner (asset values are reduced in the statement of financial position and expenses are recognised in the statement of financial performance).

1.19 For assets with a finite useful life that are available for use, the standard requires that, at each reporting date, the entity shall assess whether there is any indication that an asset may be impaired. The standard provides a set of indicators that, at a minimum, must be considered when undertaking an impairment assessment.⁴¹ For goodwill, intangible assets with indefinite useful

⁴¹ Under AASB 136 paragraph 12 indicators that shall be considered, as a minimum, include the following: an unexpected significant decline in the asset's market value; significant changes with an adverse effect on the entity including the market, economic or legal environment in which the entity operates; changes in market interest rates that are likely to affect the calculation of an asset's value in use; the carrying amount of the entity's net assets is more than its market capitalisation; obsolescence or physical damage to an asset; significant changes with an adverse effect on the entity such as assets becoming idle and plans to discontinue or restructure operations; and evidence from internal reporting that an asset's economic performance may be worse than expected. Available at <http://www.aasb.com.au/admin/file/content105/c9/AASB136_07-04_COMPjun09_07-09.pdf>.

lives or intangible assets not yet available for use, irrespective of the presence of any indication that an asset may be impaired, the standard requires the recoverable amount to be compared to the carrying amount annually at the same time each year.

Planning for software asset investments

1.20 ICT planning establishes an entity's priorities for ICT in support of business directions. In making deliberations about software purchases and development, key planning inputs include:

- periodic assessment of the risks associated with software assets, such as the impact of emerging technologies and a lack of support funding;
- an understanding the whole-of-life cost implications of ownership of software assets; and
- linkages between ICT and capital management plans.

Previous performance audit

1.21 In June 2003 the ANAO released Audit Report No. 54 2002–03, *Capitalisation of Software*. At the time of the audit there was no Australian Accounting Standard that comprehensively addressed the accounting treatment and disclosure requirements relating to intangible assets. Instead, accounting for software was subject to a range of different accounting standards.⁴² AASB 138 introduced more specific criteria that must be satisfied before costs relating to intangible assets can be capitalised.

1.22 The 2002–03 audit found that most of the entities had established internal control frameworks and mechanisms that effectively addressed software capitalisation risks, and supported the identification and capitalisation of software costs, in accordance with internal policy, accounting standards and Australian Government financial reporting requirements. In addition, most of the audited entities recognised the importance of a life-cycle approach to asset management, although asset management planning could be improved. The audit concluded that while the approaches used by the entities

⁴² These included: AAS 4—*Depreciation*; AAS 13—*Accounting for Research and Development Costs*; AAS 21—*Acquisitions of Assets*; AASB 1041—*Revaluation of Non-current Assets*; and AAS 29—*Financial Reporting by Government Departments*.

to identify and capitalise software costs differed, they were generally within the framework provided by accounting standards and the FMOs at that time.

1.23 The audit made six recommendations aimed at strengthening entities' risk assessment and controls in relation to software asset management. These recommendations are listed in Appendix 1: Recommendations from Audit Report No.54 2002–03. The audit report encouraged other Australian Government entities to consider the recommendations made.

Audit approach

1.24 The objective of the audit was to assess whether entities properly accounted for software assets, and adopted an integrated planning approach to inform software asset investment decisions.

1.25 The main focus of the audit was on whether entities accounted for software costs in accordance with relevant accounting standards and the FMOs, paying particular attention to the standard elements of an internal control framework⁴³ and accounting practices. In addition, in the context of software asset planning, the audit considered whether entities assessed the risks associated with software assets, used life-cycle costing approaches, and aligned ICT and capital management plans, to inform decision-making on software asset investments.

1.26 The audit did not examine entities' project management and system development methodologies, other than the extent to which they impacted on the control framework supporting accounting for software. In addition, the audit did not examine entities' ICT and capital management planning holistically, or their planning and budgeting for individual software assets.

1.27 The audit was conducted at three selected entities:

- the Australian Bureau of Statistics (ABS), which was included in the previous audit,—the value of the ABS' software assets was \$84.2 million at 30 June 2009. This represented around 62 per cent of the ABS' non-financial assets;⁴⁴

⁴³ The standard elements of an internal control framework are: risk assessment, control environment, control activities, communication of information and monitoring and review.

⁴⁴ Australian Bureau of Statistics *Annual Report 2008–09*, pp. 202 and 233. Available at <[http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/FB4BA2DC4D523F38CA25765D00125C48/\\$File/10010_2008-09.pdf](http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/FB4BA2DC4D523F38CA25765D00125C48/$File/10010_2008-09.pdf)>.

- the Civil Aviation Safety Authority (CASA)—the value of CASA's software assets was \$26.7 million at 30 June 2009, which represented around 56 per cent of its non-financial assets;⁴⁵ and
- IP Australia—the value of IP Australia's software assets was \$25.7 million at 30 June 2009, which represented around 50 per cent of its non-financial assets.⁴⁶

1.28 The audit examined for each entity: accounting policy and guidance; governance arrangements supporting software capitalisation, and arrangements to capture and report relevant costs for a sample of 10⁴⁷ internally generated software assets; software project closure processes for a sample of five software assets; and approvals to purchase five software assets.

1.29 The audit also assessed whether the entities had implemented relevant recommendations contained in Audit Report No.54 2002–03, *Capitalisation of Software* (provided in Appendix 1: Recommendations from Audit Report No.54 2002–03).

1.30 The audit was conducted in accordance with ANAO auditing standards at a cost of \$325 000.

Report Structure

1.31 As well as this introductory chapter, there are two other chapters in this report which examine:

- arrangements established by the entities to account for software purchases and development in accordance with relevant accounting standards and the FMOs (Chapter 2); and
- whether the entities adopted an integrated planning approach to inform software asset investment decisions (Chapter 3).

⁴⁵ Civil Aviation Safety Authority *Annual Report 2008–09*, pp. 98 and 121. Available at <http://www.casa.gov.au/wcmswr/assets/main/lib91185/casa_ar_0809_financials.pdf>

⁴⁶ Department of Innovation *Annual Report 2008–09*, pp. 252 and 278. Available at <http://www.innovation.gov.au/Section/AbouttheDepartment/Annual%20Report%20200809/resources/pdf/DIISR_ip_australiafinancial_statements.pdf>

⁴⁷ In relation to internally generated software assets, the ANAO reviewed initiation arrangements for five software assets under construction and five recently developed assets in each entity. Closure processes were reviewed in relation to the five recently developed assets.

2. Accounting for Software Assets

This chapter examines arrangements established by the entities to account for software purchases and development in accordance with relevant accounting standards and the Finance Minister's Orders.

Introduction

2.1 Entities need to maintain an effective control environment and sound practices in order to be assured that software costs are accounted for in accordance with relevant accounting standards and the FMOs.

2.2 In relation to software accounting, it would be expected that an effective control environment and practices would involve an entity having:

- accounting policy and guidance in relation to software capitalisation;
- governance arrangements for software purchases and development that support capitalisation of software costs;
- processes to capture time spent on software development to facilitate the appropriate treatment of software related costs;
- software project closure and review processes that support appropriate valuation and amortisation of software assets; and
- processes in place to ensure that software assets are assessed for any indication of impairment.

2.3 This chapter presents audit findings in relation to each of these aspects of the entities' control environments and practices for software accounting. In some sections, audit findings on the entities' approaches also shed light on their management of software projects. Nevertheless, the primary focus of the chapter is on accounting for software costs.

Accounting policy and guidance

2.4 Complete, informative and up-to-date entity policy and associated guidance is important to foster a good understanding of entity responsibilities in relation to accounting for software. To be useful, policy and guidance needs to be easy to locate, access and understand, and tailored to reflect the different responsibilities of staff or contractors involved in accounting for software. This is particularly important in relation to software capitalisation because entities often rely on contractors with technical expertise to acquire and/or develop

software who may not be familiar with entity arrangements. Policy and procedural guidance should include information on the accounting framework for assets within the Australian Government and reflect better practice principles of asset and project management.

2.5 *Audit Report No.54 2002–03 observed that most entities had established reasonably comprehensive policies and guidelines for the capitalisation of software although all entities could improve their policies and guidelines. The Audit Report recommended that entities develop clear policies and guidelines for software assets that reflect the requirements of the FMOs.*⁴⁸

2.6 The ANAO assessed the accessibility and quality of entities' accounting policy and guidance related to software capitalisation, particularly whether it addressed the key elements of AASB 138 and AASB 136.

2.7 All three entities had software accounting policy and/or guidance available on the Intranet which was readily accessible by staff and contractors involved in the acquisition and development of software.

2.8 IP Australia's policies and guidance supporting accounting for software were consistent with AASB 138, AASB 136 and the Finance Guidance Note. The policies and guidance discussed the key requirements of the accounting standards and provided advice on how to comply with the requirements. IP Australia's guidance in relation to impairment of software assets was particularly useful and informative for staff. For example, it included indicators of impairment and examples of when they would apply, as well as impairment flowcharts for assets in use and under construction. IP Australia's policies and guidance were supported by forms and checklists which guide the creation and closure of internally generated software projects.

2.9 CASA's policies and guidance supporting accounting for software were largely consistent with AASB 138, AASB 136 and the Finance Guidance Note, although a few exceptions were identified. Specifically, the guidance stated that:

- training costs could be capitalised (when all training must be expensed);⁴⁹

⁴⁸ Australian National Audit Office Audit Report No.54 2002–03, *Capitalisation of Software* p. 45. Available at <http://www.anao.gov.au/uploads/documents/2002-03_Audit_Report_54.pdf>

⁴⁹ Expenditure on training activities is not a component of the costs of an internally generated software asset and must be expensed (AASB 138 paragraphs 67c and 69b).

- all data migration costs could be capitalised (when costs of data migration outside of system testing must be expensed);⁵⁰ and
- selling, administrative and other general overhead expenditure are to be expensed (when AASB 138 allows such costs to be capitalised if these are directly attributable to preparing the asset for use).⁵¹

2.10 During the course of the audit, CASA updated its intangible assets policy to reflect the requirements of AASB 138, correct the issues noted above, and update the roles of project accountants and project managers in the capitalisation of software. CASA's policies and guidance were also supported by forms and checklists to guide the creation and closure of internally generated software projects.

2.11 ABS' policies and guidance supporting accounting for software were out of date and did not provide any specific detail of capital or expense items under AASB 138. The guidance made limited reference to AASB 136 and the Finance Guidance Note. In addition, the guidance still referred to the treatment of costs associated with ABS business areas' involvement in software development phases even though these costs ceased being capitalised by the ABS from 1 July 2009. The guidance at ABS was in need of updating and could be further improved by providing more material on how to comply with the necessary requirements. The ANAO considers the lack of appropriate guidance is likely to have contributed to the valuation issues referred to later in paragraphs 2.53 to 2.56.

2.12 The findings for this audit indicate that the relevant recommendation from the previous audit regarding the need to develop policies and guidance for software assets, that reflect the requirements of the FMOs, has been partially implemented.

Capitalisation threshold

2.13 To assist in the efficient management of software assets, entities typically establish a capitalisation threshold as part of their accounting policy and guidance. This threshold is generally set at a level that balances the need

⁵⁰ Department of Finance and Deregulation, *Accounting Guidance Note No 2007/1 Internally Developed Software* paragraphs 7 and 9 allow costs associated with data migration to be capitalised if they relate to test data used for system testing. Costs of data migration outside of system testing must be expensed.

⁵¹ CASA advised that it did not capitalise these costs as it was not cost effective to do so on a cost-benefit basis.

for management to gain assurance that recorded assets will be fairly stated, in accordance with the applicable accounting standards, with the need to ensure that resources are not devoted to accounting for insignificant assets that do not have an impact on decision-making processes. A cost-benefit analysis is often undertaken to determine the appropriate capitalisation threshold levels above which costs are capitalised, and below which costs (even of a capital nature) are expensed as incurred. Typically, asset thresholds for many agencies are in the range of \$2000, but may be higher depending on the value of an entity's assets.

2.14 *Audit Report No.54 2002–03 observed instances where the capitalisation thresholds applied in practice were not consistent with the established threshold. The Audit Report recommended that entities review capitalisation thresholds to ensure that accounting policies and practices are consistent.*⁵²

2.15 The ANAO examined whether the entities had established capitalisation thresholds for software assets and whether they were applied in practice.

2.16 All entities had established capitalisation thresholds applicable to software assets in their policy and guidance. ABS and CASA established one threshold limit for capitalising assets whereas IP Australia established different thresholds depending on whether the asset was internally developed, purchased or whether it was an enhancement to a pre-existing asset.

2.17 For the 10 internally developed software projects and five purchased software assets examined in each entity, the threshold applied in practice was consistent with the threshold outlined in the entity's policy and guidance.

2.18 None of the entities had reviewed their capitalisation thresholds in the last two years. Accordingly, it was not evident that the recommendation from the previous audit concerning the need to review capitalisation thresholds had been implemented. The ANAO considers that entities need to keep in view that it is good practice to periodically review their capitalisation thresholds, for example, every three to five years in the absence of significant entity change, to ensure they are set at a level that does not result in an understatement in the value of software assets.

⁵² ANAO Audit Report No.54 2002–03, *Capitalisation of Software* p 45. Available at <http://www.anao.gov.au/uploads/documents/2002-03_Audit_Report_54.pdf>.

Governance arrangements

2.19 Sound governance arrangements for software asset purchases and development support the appropriate capitalisation of software assets. In this context, appropriate governance arrangements involve:

- clear accountabilities and protocols for communication between business, ICT and Finance areas, including on accounting issues; and
- initiation, monitoring and reporting mechanisms for software projects, including identification and assessment of capitalisation risks.

Accountability and communication arrangements

2.20 *Audit Report No.54 2002–03 observed that generally all entities had suitable information and communication processes in place for software projects which involved the ICT and Finance areas, as well as senior management and relevant stakeholders, but did identify some areas for improvement. The Audit Report recommended that entities ensure appropriate arrangements are established for regular communication between the ICT and Finance areas to enhance understanding of the roles and responsibilities of each area, particularly on accounting issues.*⁵³

2.21 The ANAO assessed whether the entities' accountability and communication arrangements for software purchases and development supported the capitalisation of software.

2.22 All entities had established clear accountability and communication arrangements for software purchases and development. Senior management committees or project boards, which typically comprised representatives from business, ICT and Finance areas, commonly provided a formal mechanism supporting the approval of software purchases and software development projects. There were also appropriate protocols for communication and reporting, between the ICT and Finance areas, and the relevant senior management committee or project board.

2.23 Following project approval, the ICT area in each entity was generally responsible for the purchase or development of significant software. The ICT area and specific project managers were usually accountable to the Chief Information Officer, or equivalent, and the relevant senior management committee. In all of the entities, project sponsors were identified from the

⁵³ *ibid.*, p. 45.

relevant business and Finance areas to oversee software projects. Each of the entities had also established a program oversight section (Project Office) that played a key oversight role for all projects.

2.24 For each entity there was either a clearly defined Finance team or designated finance position (project accountant) assigned to support project managers and provide advice on the treatment of costs and compliance with relevant accounting standards and the FMOs. This involvement generally included liaising with ICT staff to provide advice on: project initiation; developing business cases; developing budgets; determining how costs should be treated including cost capture, project set up and monitoring within a time recording system; preparation of financial information for monitoring; and assistance with project closure and asset capitalisation.

2.25 The above findings indicate that the recommendation of the previous audit concerning improving communication and understanding between the ICT and Finance areas had been implemented.

Initiation, monitoring and reporting of software projects

2.26 *Audit Report No. 54 2002–03 observed that most entities had considered risks related to software development and acquisition on a project basis during the development of the project business cases and planning process. The Audit Report recommended that entities assess risks in relation to software development and acquisition, and specifically software capitalisation, as part of the business project planning phases, and establish suitable processes to monitor those risks throughout the software project.*⁵⁴

2.27 The ANAO assessed whether the entities initiation, monitoring and reporting processes for software projects, including risk identification and assessment, supported the capitalisation of software.

2.28 Each of the entities had a business case template to be used as the basis for preparing a proposal to purchase or develop a software asset. For the sample of projects examined, business cases generally included project objectives, risks and milestones, based on time and costs, which were regularly monitored.

⁵⁴ *ibid.*, p 37.

2.29 For the sample of 10 projects examined in each entity, all entities had clear software project initiation and approval documentation, including documented approval by the relevant senior management committee. For the sample of five purchased software assets in each entity, appropriate approval had been obtained for all assets.

2.30 In each of the entities, risks were initially considered when developing documentation such as business cases, and were then monitored during the life of each project. All entities assessed the likelihood and consequences of identified risks and, to varying degrees, identified risk treatments, action plans and risk mitigation options for various risks.

2.31 Overall, these findings indicate that the recommendation arising from the previous audit regarding the need to assess risk as part of the project planning process, had largely been implemented. Nevertheless, there remains scope for entities to improve their consideration of specific risks associated with the recognition of software assets, as outlined below.

2.32 The ANAO considers it beneficial for entities to have a formal way, through completion of an appropriate template at the project initiation stage, to document consideration of the fundamental requirements for capitalisation of a software asset under AASB 138. In particular, entities should have arrangements in place to ensure software assets meet the recognition criteria in AASB 138, and to identify and separately account for research and development costs at the initiation of the project.

2.33 Only IP Australia formally considered the specific accounting recognition requirements for internally generated intangible assets, as discussed at paragraph 1.12. IP Australia has a *Capitalisation of Internally Generated Software Checklist* which required a number of questions to be answered, including:

- is this a new asset or an enhancement to an existing asset?
- is it technically feasible that the software will be completed so that it will be available for use by IP Australia?
- do you have agreement by the sponsor that there is the intention to complete the final product?
- are there adequate technical, financial and other resources to complete the development and to use the software?
- does IP Australia have the ability to use the final product?
- will the software generate probable future economic benefits?

- can IP Australia demonstrate the existence of a market for the output of the software?
- if it is to be used internally can the usefulness of the software be demonstrated?
- can the expenditure attributed to the software during its development be measured reliably?

2.34 The IP Australia checklist requires certification by the project accountant that the:

... project satisfies the Accounting Standards and Guidelines to enable the costs associated with the development of internally developed software to be capitalised.

2.35 ABS and CASA do not explicitly address the recognition conditions outlined in paragraph 1.12 when initiating software development projects, which heightens the risk that not all the requirements will be assessed at initiation. This could result in some software costs being incorrectly capitalised. ABS and CASA instead rely on the project accountant liaising with project staff to determine whether the asset recognition criteria outlined in AASB 138 have been satisfied.

2.36 None of the entities required that the research and development phases be identified as separate at the project initiation stage. Not having the split between research and development clear from the inception of a project increases the risk that costs are inappropriately treated. Following completion of the audit fieldwork, all three entities advised they had implemented new arrangements to identify research and development phases at the project initiation stage.

2.37 In addition, ABS' initiation documentation did not require projects to separately identify capital costs and operating expenses. Following completion of the audit fieldwork, ABS introduced a new business case template which requires capital and operating expenses to be separately identified.

Project monitoring and reporting

2.38 Each of the entities had established ongoing monitoring of software projects on a number of different levels. This ranged from general day-to-day monitoring of software projects, including review of costs and progress against timeframes by individual project managers, to the involvement of senior management committees that were provided details of project progress and costs, and endorsed remedial action for overspends or delays.

2.39 Reporting on software projects was generally performed monthly in accordance with established entity project reporting requirements. In all three entities, the project accountant compiled project reports which, where relevant, included details of budgetary variations, and the senior management committee minutes that gave endorsement to the revised figures.

2.40 ABS and CASA provided a clear audit trail for variations in projected costs/timeframe endorsed by the relevant senior management committee. In IP Australia, documentation identifying changes to project budgets was not always updated to reflect changes that occurred as a result of senior management committee approval. As a consequence, it was more difficult to track all approved variations and understand any implications for software capitalisation. IP Australia advised that it will establish a separate document for each project that tracks adjustments to project approvals over the life of the project.

2.41 As mentioned in paragraph 2.37, at the time of the audit ABS did not differentiate between capital and operating expenses in its initiation documents and, as a result, monitoring was done at the total project costs level. Not budgeting and monitoring projects at the capital and expense level limits the usefulness of project information for decision-making, particularly in relation to capital management planning (discussed further in Chapter 3).⁵⁵

Capture of time and cost information

2.42 In order to properly account for software assets, entities need to establish appropriate processes to capture time spent on software development. The majority of costs related to internally generated software assets normally relate to staff and contractor time on individual projects. Having time recording systems align tasks to project research and development phases simplifies the recording of staff time spent on development and assists in ensuring the correct allocation of costs.

⁵⁵ Providing senior management with details of capital and operating expenses, throughout the course of projects, enables senior management to make informed decisions regarding investment priorities across projects, in light of available funds.

2.43 The ANAO assessed processes to capture time spent on software research and development. In particular, for a sample of four software projects in each entity,⁵⁶ the ANAO examined whether:

- time was correctly recorded as relating to either capital or as an expense, based on the research and development phases of projects;
- the value of time charged to software development (based on actual hours committed to individual software projects multiplied by a costing rate) met the principles of AASB 138; and
- costs relating to the time recorded in an entity's time recording system were appropriately transferred to the entity's Financial Management Information System (FMIS), and whether this transfer was subject to confirmation and reconciliation.

Time

2.44 All of the entities had implemented time recording systems as a mechanism to capture effort associated with software project costs. Generally, staff and contractors recorded time against individual project codes on a daily or weekly basis. Time would be input by project phase/task and this was mapped to a capital item or operating expense. This was usually via a series of drop down menus that identified phases of work common in the research and development of software assets. Project managers and staff only needed to know the nature of their task and not whether it was capital or expense by nature. In each of the entities the mapping was reviewed by the project accountant for each project setup. In CASA's case, the full functionality of its time recording system (in terms of splitting activities between capital and operating expenses) was not always used for a range of reasons. As a result, CASA performed a greater level of review at project completion. CASA advised it intends to replace its time recording system with a more user-friendly system.

2.45 With the exception of one project in CASA, (for which time related to training had been incorrectly recorded as a capital expense in 2008–09), for all three entities, for the sample of projects examined, time was appropriately

⁵⁶ From the sample of five assets under construction and five recently completed software assets reviewed, two assets from each category were selected for detailed testing in relation to the capture of time information.

recorded as either a capital or operating expense. The ANAO noted no training was recorded as a capital expense in CASA's FMIS in 2009–10.

Cost (the value of time charged)

2.46 AASB 119 Employee Benefits provides guidance on those costs that can be used to help determine the cost rate to apply to development effort. The cost of employee benefits under this standard includes short and long-term employee benefits, such as wages and paid annual leave; post-employment benefits, such as pensions; other long-term employee benefits, including long-service; and termination benefits.

2.47 In each entity, an hourly or daily rate was applied to time recorded against projects to calculate software costs. The rate applied varied on the basis of staff level. Each entity included different costs in determining the rate applied, as outlined below.

Staff costs—salary and wages

2.48 All of the entities capitalised costs of staff time directly related to developing or testing the asset in the development phase, including salary, wages and superannuation. Entities' time recording systems enabled labour hours to be matched to either actual employee costs, or average annual salary, for each level of staff, with allowances made for changes in pay and superannuation rates. The process for determining these costs was considered satisfactory.

Staff on-costs—leave

2.49 The vast majority of software development activity undertaken in CASA is done by contractors who do not attract leave costs. Further, CASA advised that on a cost-benefit basis it only capitalises accrued leave costs for staff who work solely on one project, as this is the most common working arrangement, and it is a relatively straightforward process to capitalise the costs of these staff. Taking account of the staff/contractor profile of its development activity, the ANAO considers that CASA's approach to capitalising leave costs would not materially affect the valuation of its software assets.

2.50 ABS and IP Australia capitalise the cost of accrued annual leave, long service leave and unplanned leave (such as sick and carers leave). The entities' processes for determining the costs associated with annual and long service leave were considered satisfactory.

2.51 When determining costs relating to unplanned leave, instead of using actual leave costs, IP Australia used a yearly average across all of the ICT section, and the ABS used ten days. Using estimates for such costs is reasonable, provided entities have conducted appropriate analysis to ascertain whether the estimates reasonably represent the true costs. Estimates would also have to be periodically reviewed to confirm that they remain appropriate.

2.52 During the course of the audit, ABS and IP Australia reviewed actual leave costs relating to staff involved in software development and found that their estimation techniques were suitably accurate. Nevertheless, IP Australia advised that it would revise its approach to determining leave costs for staff involved in software development.

Other administrative costs

2.53 AASB 138 places the onus on entities to be satisfied there is a clear connection between costs that are capitalised and the resulting asset. Since 2004–05, the ABS had incorrectly capitalised costs relating to training (AASB 138 specifically excludes capitalisation of training costs). Over the same period, ABS had also capitalised some indirect administrative costs that did not meet the requirements of directly attributable costs under AASB 138. In addition, in 2009–10 the ABS undertook a review of its software assets. The one-off cost of this review (approximately \$300 000) was included in the overall costing rate and as a result was capitalised even though it did not add value to any software asset and did not meet the requirements for capitalisation under AASB 138. The inclusion of these non-capital items in ABS' costing rate meant that the rate was overstated by some 10 per cent when used for capitalisation purposes. However, the cumulative financial impact of incorrectly including these costs in the rate was not significant enough to result in a material error in ABS' financial statements.⁵⁷ ABS advised that it will not capitalise these costs in the future.

⁵⁷ AASB 1031 Materiality states that the notion of materiality guides the margin of error that is acceptable in the amount attributed to an item or an aggregate of items, and the degree of precision required in estimating the amount of an item or an aggregate of items. Materiality is a matter of professional judgement influenced by the characteristics of the entity and the perceptions as to who are, or are likely to be, the users of the financial statements, and their information needs. As a guide the standard states: (a) an amount which is equal to or greater than 10 per cent of the appropriate base amount may be presumed to be material unless there is evidence or convincing argument to the contrary; and (b) an amount which is equal to or less than 5 per cent of the appropriate base amount may be presumed not to be material unless there is evidence, or convincing argument, to the contrary. In the preparation of ABS' 2009–10 financial statements, the quantification of the error was less than 10 per cent of total intangible assets, and less than five per cent of non financial assets, and therefore was deemed to be not material.

2.54 In addition, the ABS was unable to demonstrate that some of the other costs included in its costing rate over the same period (predominantly IT and administrative costs) were directly attributed to the development of software assets, as required by AASB 138. As a result, during the ABS' 2009–10 financial statements process, ABS revised its attribution approach and did not capitalise these costs. The impact of this change in estimation process was recognised prospectively, commencing for the 2009–10 financial year, and resulted in an increase of \$2.1 million in employee benefits expenses, and a corresponding reduction to internally generated software assets, in ABS' 2009–10 financial statements.

2.55 The interpretation of AASB 138 requires judgement, particularly in terms of the costs that should be capitalised and those costs that should be expensed. ABS' approach involved attributing a range of costs to the development of software on the basis of costs derived from its business costing model. The costing model was designed for internal costing purposes and was also used for software capitalisation, however did not correctly take into account all the specific requirements of AASB 138.

2.56 ABS' approach to capitalising costs highlights the need for entities to be aware that AASB 138 imposes tighter requirements on which costs can be capitalised than entities may apply for internal costing purposes. Where estimates are used by entities to capitalise costs (for example the contribution of IT support costs at ABS), they should be properly supported by analysis to ensure that costs are directly attributable to developing the asset and can be measured reliably.

2.57 The ANAO considers a common sense approach should be taken in order to facilitate effective internal cost attribution and financial reporting. For example, on the basis of sound analysis, entities could determine costs for capitalisation purposes from the information contained in their costing models. Analysis should be subject to periodic review to ensure any assumptions used to capitalise costs remain valid.

Recommendation No.1

2.58 The ANAO recommends that, to provide assurance software assets are appropriately valued in accordance with external reporting requirements, entities:

- review their approach to capitalising costs to ensure only costs that can be measured reliably and are directly attributable to the development of software assets are capitalised; and
- where estimates or attribution processes are used, ensure they are properly supported and subjected to periodic review to confirm they reasonably represent the actual costs incurred in the development of software assets.

Entities' responses

ABS

2.59 Agree.

CASA

2.60 Agreed. CASA now fully complies with the recommendation.

IP Australia

2.61 Agreed.

Transfer of software related costs into the entities' Financial Management Information System

2.62 Entities need to transfer information in their time recording system to their FMIS to account for labour costs related to software development. Entities should put in place reconciliation procedures to confirm the transfer of labour costs is accurate and complete.

2.63 *Audit Report No.54 2002–03 observed the arrangements for reviewing and reconciling software capitalisation costing information to the time recording system in two entities could be improved to provide additional assurance on the accuracy of the data. Accordingly, the Audit Report recommended that entities capture project management and operational staff time for specific software projects; and improve the controls over the accuracy of capitalised software costs by, either routinely reviewing*

*the data manually extracted from the time recording system, or enhancing the functionality of the system to automatically produce the required data.*⁵⁸

2.64 Total costs relating to time charged in the time recording system (across the projects examined) were appropriately transferred to the entity's FMIS for all entities. CASA and IP Australia had sound processes for transferring information from their time recording system to their FMIS. Each month, in both entities, a journal was automatically created using information in the time recording system, detailing the capital costs and operating expenses for each software project. This amount was then manually journalled to a software asset work in progress (WIP) account within CASA's and IP Australia's FMIS. The value of time charged to software projects was based on actual hours committed to individual projects, multiplied by a costing rate (discussed earlier in this chapter). At the completion of a project the total value of the WIP account was transferred to the intangible software assets account and amortisation commenced. In addition, in both entities, the project accountant or equivalent and individual project managers reviewed all costs prior to their transfer to the FMIS.

2.65 In ABS, a journal was not automatically created using information in the time recording system, to support the transfer of data to the FMIS. Instead, separate spreadsheets were maintained to record the transfer of time costs. Such spreadsheets are subject to manual entry, and therefore there is an increased risk of errors occurring.

2.66 In ABS, the ICT area reviews the costs of individual projects and provides the Finance area with project costs. The Finance area then transfers these costs into the FMIS. Although ABS reconciles the total costs transferred from the time recording system with the FMIS, the ANAO was unable to trace the transfer of costs from the time recording system to the FMIS at the individual asset level for two of four assets tested. The inability to reconcile costs at the individual asset level increases the risk of a misallocation of costs between different assets. Such misallocation could lead to incorrect amortisation, as different assets could have different useful lives, and affect decision-making as individual assets have costs incorrectly allocated to them.

⁵⁸ ANAO Audit Report No.54 2002–03, *Capitalisation of Software* p. 19. Available at http://www.anao.gov.au/uploads/documents/2002-03_Audit_Report_54.pdf.

2.67 The ANAO considers ABS should improve transparency in relation to the transfer of costs from its time recording system to its FMIS at the individual asset level. This could be achieved by improving referencing between the time recording system and the journals used to update ABS' FMIS. The ABS could also explore options for automating the transfer process.

2.68 The results of the current audit indicate that the recommendation from the previous audit on routinely reviewing the data manually extracted from the time recording system, or enhancing the functionality of the system to automatically produce the required data, has been partially implemented.

Project closure and review

2.69 As software assets move from development into production, entities need to apply sound project closure and review processes, which support appropriate valuation and amortisation of the assets. Such processes involve assessing that the value assigned to each asset reflects the expected benefits; that each asset is assigned an appropriate useful life; and amortisation charges are appropriate and commenced in a timely manner. In some cases, entities undertake post implementation reviews (PIRs) for software projects, which may identify lessons learned in terms of project management and asset valuation.

2.70 The ANAO assessed entities' software project closure and review processes. This included assessing whether the entities:

- had adequate project closure processes in place, that incorporate communication with the Finance area when software assets become ready for use;
- assigned a useful life to software assets in accordance with the principles outlined in AASB 138; and
- conducted PIRs to inform process improvement.

Project closure

2.71 *Audit Report No.54 2002–03 observed that in most entities, it was not evident there were robust arrangements to ensure timely information was provided to the Finance area on when software assets became operational or were ready for use so that they could be accounted for properly. Accordingly, the Audit Report recommended that entities establish adequate processes to inform the Finance area on a timely basis when*

software assets became operational or ready for use, to ensure amortisation commences.⁵⁹

2.72 As mentioned in paragraphs 2.22 and 2.24, all entities had established protocols for communication and reporting for software projects between the ICT and Finance areas, and the relevant senior management committee or project board. As also discussed, the Finance team or an assigned project accountant provided advice to project managers on the accounting treatment of software costs, both in terms of the capitalisation of the software asset and the appropriate amortisation charge.

2.73 On this basis, the ANAO considered that all entities had established adequate processes to meet the previous audit recommendation. Nevertheless, closure processes at IP Australia were not always applied in practice, and ABS would benefit from more formal closure processes. These matters are discussed below.

2.74 The ANAO reviewed software project closure processes and the related accounting treatment for five software assets in each entity. CASA had strong processes supporting project closure and required sign-off from the relevant senior management committee prior to the asset being accepted into use. The CASA project accountant was responsible for confirming final actual expenditure on the project and identifying any inefficient costs during the life of the project and at finalisation, which should not be included in the value of the asset. CASA's *Project Closure Report* template also required details of lessons learned, what worked well and what could be improved for future projects to be completed.

2.75 In IP Australia, the documented software project closure procedures were sound. They required sign off of a *Depreciable Assets Form* by the project manager, asset owner, Chief Information Officer and Chief Financial Officer, and clearance of an end of project report by the relevant senior management committee or project board, prior to the asset being released into production. Nevertheless, three of the five IP Australia projects examined had costs recorded against assets after project closure, indicating the closure procedures were not operating as intended.

⁵⁹ ANAO Audit Report No.54 2002–03, *Capitalisation of Software*, p. 52. Available at http://www.anao.gov.au/uploads/documents/2002-03_Audit_Report_54.pdf.

2.76 In ABS there was no formal software project closure process requiring sign-off from any senior management committee or project board when software assets were ready for use. Acceptance of the asset as complete and appropriately valued was based on the judgement of the project manager after the completion of user acceptance testing.

2.77 The ANAO considers that sound project closure processes, that confirm the value of software assets, while ensuring amortisation charges are appropriate and commenced in a timely manner, should be established by entities for all projects. As necessary, project closure processes should be tailored to the scale and risk profile of software projects to ensure efficient application of resources.

Recommendation No.2

2.78 The ANAO recommends that entities establish software project closure processes, which confirm the value of software assets, while ensuring amortisation charges are appropriate and commenced in a timely manner.

Entities' responses

ABS

2.79 Agree.

CASA

2.80 Agree. CASA is in compliance with this recommendation.

IP Australia

2.81 Agreed.

Assignment of useful life

2.82 As mentioned in paragraph 2.69, once an asset is available for use it is important to assign the asset an appropriate useful life. Assigning a useful life to an asset is necessary to calculate annual amortisation charges over the life of the asset. An asset's useful life also provides a timeframe for capital management planning for the maintenance, replacement or upgrade of the asset. Capital management planning is discussed further in Chapter 3.

2.83 In some cases, software assets may be comprised of multiple components, and assigning a useful life can be particularly difficult. Where there are complex assets, made up of separate components that are readily identifiable, and that may be purchased or developed at different times, it may

be appropriate to use asset hierarchies which enable each component of the asset to be accounted for separately, thereby allowing different useful lives, and therefore different amortisation charges, for each component. Recording significant components of a complex asset separately will assist in providing greater transparency regarding the individual components that make up software assets. This information supports capital management planning and provides management with better information to use when planning for maintenance, replacement, refurbishment and upgrade over an asset's life-cycle.

2.84 *Audit Report No. 54 2002–03 observed three of the four entities had not undertaken a formal review of useful life for their software assets; and recommended that entities ensure that useful life for software assets is reviewed at least annually to meet accounting standard requirements and ensure the assigned useful life for each asset reflects factors such as asset usage and the rate of technical obsolescence.*⁶⁰

2.85 For a sample of 10 software assets in each entity, the ANAO assessed whether useful life had been assigned in accordance with the principles of AASB 138 (see paragraph 1.16).

2.86 All entities had assigned a useful life to each of the assets in the audit sample in accordance with the principles of AASB 138. Specifically, relevant factors such as expected usage and obsolescence had been taken into account when determining each asset's useful life, and useful life had been reviewed annually. To assist the determination of useful life, ABS and IP Australia provided staff with examples of the anticipated useful life of a range of software assets. The entities had reviewed the useful life of the assets as part of their financial statements process for the financial year ended 30 June 2009.

2.87 ABS and CASA undertook a specific annual review (as part of their financial statements process) that generally addressed the requirements outlined in paragraph 1.16. IP Australia did not undertake a specific annual review of the useful life of assets, but instead relied on its assessment of impairment of intangible assets (discussed in paragraph 2.102) to identify any changes. While the impairment assessment considered relevant factors, the approach taken by IP Australia was not explicit. IP Australia advised that in the future it will conduct a separate formal review of useful life for all assets including software. Overall, the findings of this audit indicate that the

⁶⁰ *ibid.*, p. 45.

recommendation from the previous audit regarding the need to review the useful life of assets annually had been implemented.

2.88 The ANAO also examined whether the useful life of software assets was considered when determining future software asset replacement requirements. All three entities indicated they considered a range of factors when determining asset replacement requirements, including useful life, performance capability, technological issues and competing priorities, although such considerations were not always formally documented. All of the entities advised they had, or were planning to, formalise the consideration of useful life as part of future changes to capital management planning for software assets.

2.89 ABS and CASA employed asset hierarchies within their FMIS in relation to software assets. When a new component is added to an asset both ABS and CASA assign a useful life to the new component and, if necessary, revise useful life for the remainder of the asset. IP Australia does not use asset hierarchies or review an asset's useful life after additional amounts are capitalised for an existing asset. IP Australia advised that it plans to adopt asset groupings and hierarchies in the future as part of the redevelopment of its larger software assets.

Post implementation reviews

2.90 As discussed in paragraph 2.69, in addition to software project closure processes, entities may conduct PIRs. The main focus of PIRs is normally lessons learned in relation to the management of a project. The reviews may cover a range of matters such as outcomes achieved, user or client feedback, and asset valuation. Results of PIRs can be used to drive process improvement. PIRs are often conducted between six weeks and six months after a project has been completed.

2.91 *Audit Report No. 54 2002–03 observed that while monitoring and review arrangements in the entities were generally satisfactory and well established, only two entities had formal requirements in place for post implementation reviews of significant software projects. Accordingly, the Audit Report recommended that entities undertake post implementation reviews for significant software projects, which*

*incorporate software capitalisation issues, and report the results to appropriate senior management committees.*⁶¹

2.92 The ANAO examined whether PIRs were undertaken for software projects by the entities, and their results used to improve performance.

2.93 None of the 10 software projects examined in each entity had been subject to a PIR. Each of the entities advised that PIRs are only completed for those projects that have had serious problems associated with them, and are not routinely used to drive process improvement. The ANAO considers entities should select software projects to be subject to PIRs on the basis of predetermined criteria, such as their significance in terms of value or business need or the extent of project management issues that have arisen. Information gained from PIRs could also be used to inform decision-making regarding impairment of software assets.

2.94 These findings indicated that the recommendation from the previous audit regarding the conduct of PIRs for significant software projects has not been implemented.

Recommendation No.3

2.95 The ANAO recommends that entities undertake post implementation reviews for software projects on the basis of predetermined criteria, such as the significance of projects in terms of value or business need or the extent of project management issues that have arisen.

Entities' responses

ABS

2.96 Agree.

CASA

2.97 Agreed. CASA currently undertakes post implementation reviews for all projects as a part of the Project Closure Report. The Project Closure Report includes the following components: a review of costs; schedule; outputs; outcomes; and a post implementation review with key recommendations. However, independent Project Review and Evaluation Reports will be

⁶¹ *ibid.*, p. 58.

undertaken for all 'major' projects or those that encounter significant issues during implementation.

IP Australia

2.98 Agreed.

Impairment reviews

2.99 AASB 136 Impairment of Assets requires intangible assets to be assessed for an indication of impairment at each reporting date. Irrespective of whether there is any indication of impairment, an entity must estimate the recoverable amount during the reporting period (at the same time each year) for intangible assets with an indefinite useful life and those not yet available for use. Where there are indications of impairment the remaining useful life should also be reviewed.

2.100 The ANAO assessed whether each of the entities complied with the requirements of AASB 136 to undertake an impairment assessment for the financial year ending 30 June 2009.

2.101 As part of their 2008–09 financial statements' process all of the entities assessed whether there was any indication that software assets may be impaired and, where appropriate, reduced the value of the asset. As mentioned in paragraph 2.93 entities did not use PIRs to inform consideration of impairment. The processes entities undertook to assess impairment are discussed below.

2.102 IP Australia advised that it nominated two experienced staff within its ICT division to identify any indicators of impairment in relation to IP Australia's software assets. This involved assessing external technological, economic, legal and market value indicators of impairment and internal indicators such as technology, physical damage and performance capability. The recommendations of the review were approved by IP Australia's Chief Finance Officer.

2.103 An independent accounting firm conducted an impairment assessment of CASA's major software asset in July 2009. This review also addressed the external and internal indicators of impairment outlined in paragraph 1.19. CASA separately undertook an internal review of its other intangible assets, which involved the Chief Financial Officer consulting with various project managers and the Chief Information Officer to ascertain whether there were any indicators of impairment. As part of this review the project accountant, in

conjunction with the relevant project manager, was responsible for ensuring the correctness of classification of costs and identifying any inefficient costs which could not be capitalised.

2.104 In ABS, the Finance area provided a list of assets, derived using information in the asset register, to the ICT area. Relevant ICT staff then completed a list of questions concerning indicators of impairment for each asset. The ICT area subsequently advised the Finance area of assets to be written off or written down.

2.105 Overall, the ANAO considers each of the entities had undertaken impairment assessments in accordance with the principles of AASB 136.

3. Planning for Software Asset Investments

This chapter examines whether the entities adopted an integrated planning approach to inform software asset investment decisions.

Introduction

3.1 Correctly valuing and amortising software assets helps entities understand future asset funding requirements. Consequently, the accounting treatment of software assets forms an input to software asset planning. More broadly, decision-making on the purchase and development of software assets should take into account entities' ICT and capital management planning.

3.2 ICT planning establishes an entity's priorities for ICT in support of business directions. In making deliberations about software purchases and development, entities generally need to take into account the risks associated with software assets, such as technical obsolescence and changes in business requirements. Another key aspect of ICT planning is consideration of the whole-of-life cost implications of planning, acquiring, operating, maintaining and disposing of software assets.

3.3 An entity's capital management plan (CMP) outlines how the entity will allocate scarce capital resources over time, to meet entity priorities. Having an entity's ICT plans align with its CMP, typically improves communication between the ICT and Finance areas, thereby helping to ensure available funding is directed to key software purchases and development activities, in a timely manner.

3.4 The audit examined elements of planning central to software asset investment decisions. Specifically, the audit assessed the extent to which the entities: assessed the risks associated with software assets; used life-cycle costing approaches; and aligned ICT and capital management plans, to inform this decision-making.

3.5 The audit did not examine the entities' ICT and capital management planning holistically, or their planning and budgeting for individual software assets.

Risk assessment

3.6 Software assets are subject to a range of different risks. These include the risk that insufficient maintenance activity is carried out and/or insufficient funding is provided for replacement of assets at the end of their useful life. In addition, there are risks that changes in business requirements, for example, arising from changes in program legislation, render software assets redundant or in need of upgrade. For software assets under construction, a key risk is that once finalised, assets will not provide the expected benefits.

3.7 The ANAO assessed the extent to which the entities assessed the risks associated with software assets, to help inform software asset investment decisions.

3.8 In 2009, ABS undertook a review and developed a risk profile for each software asset. ABS identified risks associated with both business needs and technological obsolescence. At the time of the audit the risk profile was not being used to guide capital management planning processes, but ABS advised the intention was to use it in this way in the future.

3.9 Under ABS' new capital management planning process, enterprise and application risk assessments are intended to contribute to the development of a CMP. The ANAO considers that, if fully implemented, this will result in more robust information for capital management planning.

3.10 In 2008, CASA engaged an external consultant to perform a review of its asset management framework, including for ICT assets. As part of this review, CASA conducted asset profiling with a view to periodically using it as a basis for capital budget planning and considering asset replacement requirements, particularly where operationally important assets have associated operational or technological risks.

3.11 IP Australia advised that it considered the risk profile of its software assets on a case-by-case basis, although it did not formally document this process. IP Australia also specifically identified risks associated with the use of software in its entity-wide risk management plan. IP Australia supported asset replacement decisions informally using asset criticality ratings⁶² as reflected in

⁶² Criticality or operational importance reflects how heavily the asset user depends upon the asset to meet service delivery needs. Australian National Audit Office *Better Practice Guide on the Strategic and Operational Management of Assets by Public Sector Entities*, 2010, p. 18.

its business continuity plans. IP Australia also uses a complexity index combined with the criticality rating to assist in identifying risks.

3.12 These findings indicate that entities had scope for improvement in the use of software asset risk assessments, to inform decision-making on asset purchases and development. Although, positive steps were being taken in this direction.

3.13 The ANAO next considered whether the entities' software asset investment decisions were informed by assessment of whole-of-life costs of assets.

Life-cycle costing

3.14 Life-cycle costing takes into account the whole-of-life implications of planning, acquiring, operating, maintaining and disposing of an asset. It is a process that analyses the known costs over an asset's life, or that of a non-asset solution, to reflect the true overall cost of owning an asset prior to acquisition.⁶³ The potential savings from entities successfully using life-cycle costing can release financial resources for use in other aspects of program delivery, with benefits to both the end users of government services and to the general public who fund them.⁶⁴

3.15 *Audit Report No. 54 2002–03 observed that only one entity had reflected the life-cycle approach in its asset management policy, although it had not developed any methodology, or guidance to ensure the policy was applied in practice. Accordingly, the Audit Report recommended that entities' asset management planning for software assets be based on an asset life-cycle approach.*⁶⁵

3.16 The ANAO assessed the extent to which the entities used life-cycle costing to inform software asset investment decisions.

3.17 CASA included life-cycle costing in its software asset business cases/initiation documents and reflected such costs in its annual ICT plan. ABS' and IP Australia's current policies, procedures and practices did not support life-cycle costing of intangible assets. Their guidance did not require business

⁶³ *ibid.*, p. 27.

⁶⁴ Australian National Audit Office *Life Cycle Costing Better Practice Guide*, 2001, p. 5. Available at <http://www.anao.gov.au/uploads/documents/Life_Cycle_Costing.pdf>.

⁶⁵ ANAO Audit Report No.54 2002–03, *Capitalisation of Software* p. 45. Available at <http://www.anao.gov.au/uploads/documents/2002-03_Audit_Report_54.pdf>.

cases supporting the purchase or development of software assets to include provision for ongoing maintenance and support costs. Both entities are in the process of updating their guidance and associated templates for new projects to provide for estimated ongoing costs.

3.18 These findings indicate that the above recommendation regarding the need for entities' software asset planning to be based on a life-cycle approach, had only been implemented by one of the three entities.

3.19 The ANAO built on its consideration of aspects of ICT planning (risk assessment and life-cycle costing), by exploring linkages between entities' annual and longer term ICT plans, and CMP.

Aligning ICT and capital management plans

3.20 The ICT area of an entity will usually be responsible for developing and maintaining a three to five year ICT strategic plan which is aligned to the corporate strategic plan, and involves engagement with business and senior management in determining ICT strategic direction. To support the ICT strategic plan, the ICT area in an entity typically prepares annual and longer term (for example, three to four year rolling plans) tactical ICT plans⁶⁶ that cover the acquisition or development of software in accordance with strategic ICT and business plans.⁶⁷

3.21 An entity's CMP is the overarching document that records how an entity will allocate scarce capital resources to meet its priorities. It is the mechanism by which management practically implements the entity's strategic intent for the asset portfolio at the individual asset level.⁶⁸ It sets out a projected longer term outlook for entity assets and details funding strategies for asset acquisitions and development, as well as projected impacts on the entity's financial position. The Finance area is usually responsible for the development of the CMP.

⁶⁶ With respect to ICT software assets tactical plans should at least include: new acquisition or development plans; operational and maintenance plans; replacement or redevelopment plans; and disposal plans. In smaller entities these could be incorporated into one single plan.

⁶⁷ Longer term plans are often only indicative for out-years due to uncertainty and changing priorities. Such plans provide senior management with information on expected acquisition, operational, maintenance, replacement and disposal costs, and thereby better enable senior management to understand both their obligations and opportunities.

⁶⁸ Australian National Audit Office *Better Practice Guide on the Strategic and Operational Management of Assets by Public Sector Entities*, 2010, p. 43.

3.22 Having an entity’s annual and longer term ICT plans align with its CMP typically improves communication between the ICT and Finance areas, thereby helping to ensure funding is directed to software assets that best achieve strategic and operational objectives. The degree of alignment would be expected to be stronger in the shorter term, given the uncertainty surrounding future years.

3.23 Recent changes to the appropriation framework for budget-dependent public sector entities have resulted in previous ongoing funding for depreciation and amortisation being replaced by funding of a Departmental Capital Budget (DCB). The DCB provides a capital budget to entities based on their estimated capital expenditure patterns.⁶⁹ The changes give further weight to the importance of having robust capital management planning arrangements in place, aligned to ICT plans, to ensure funds are available to support asset acquisition and development.

3.24 The ANAO assessed whether the entities’ annual and longer term ICT plans were aligned with their CMP. The types of plans the entities had completed, and the ANAO’s assessment of the extent to which their ICT plans and CMP aligned, are outlined in Table 3.1 below.

Table 3.1

Annual and longer term ICT plans aligned with capital management plan

	ICT Section				Finance Section
	ICT annual plan exists	ICT longer term plan exists	Formal alignment between ICT annual plan and CMP	Formal alignment between ICT longer term plan and CMP	CMP plan exists
ABS	✓	✓	×	×	✓
CASA	✓	✓	✓	×	✓
IP Australia	✓	✓	×	×	✓

Source: ANAO analysis.

⁶⁹ Australian Government *Budget Paper No. 4 2010–11* outlines changes to the appropriation framework that reduce the range of Australian Government expenses funded in the year they are incurred. In summary, ongoing funding for depreciation and amortisation will be replaced by a DCB for departmental and administered assets for which depreciation funding was previously provided. The DCB will be supported by a four year CMP, which is to be updated annually. The changes will provide capital budgets for agencies that align with their estimated expenditure patterns. The changes predominantly apply to FMA Act agencies in the general government sector that receive funding from annual appropriations directly or via a special account. Available at <http://www.budget.gov.au/2010-11/content/bp4/html/bp4_introduction.htm>.

3.25 None of the entities had formally aligned both their annual and longer term ICT plans with their CMP. In particular, in ABS and IP Australia there were no formal linkages between the annual and longer term ICT plans, and the CMP.

3.26 IP Australia commenced a revision of its planning arrangements in February 2010 through the first stage of the development of a ten year CMP. IP Australia advised that it will strengthen the linkages between its ICT plans and this CMP. Similarly, ABS was refining its capital management planning processes at the time of the audit. ABS' Capital Strategy Committee endorsed a proposal in September 2009 that set out ABS' approach to future planning for internally generated software. As part of this process, ABS clearly articulated the outcomes it sought to achieve, including that the strategic business needs of the ABS are supported by capital planning for software assets. Under the new process, ABS' *Ten Year Capital Plan* will be developed using its *Four Year ICT Plan*. Each year the *Four Year ICT Plan* will be converted to a one year plan to drive work that year. This process should result in better integration of the plans and therefore focusing of resourcing decisions.

3.27 CASA had formal linkages between its annual ICT plan and the CMP. At the time of the audit, work was also underway to improve the alignment and linkages between ICT plans and capital management planning, through an internal review undertaken by CASA's Finance team and Chief Information Officer.

3.28 Both CASA and IP Australia had no formal policies outlining their respective capital management planning processes. In both entities, new software investments were approved, within the context of a business case, on the basis of available funding. The starting point for funding was accumulated depreciation, with the assumption that existing software assets are replaced using a constant chain of replacement within the CMP. The ANAO considers that documenting the guiding principles and assumptions supporting an entity's capital management planning process facilitates understanding between the ICT and Finance areas, as well as the section responsible for software development and acquisition and the Finance area.

3.29 Overall, the three entities had scope for improvement in the level of alignment between their ICT and capital management planning, and they were all intending to strengthen alignment. Progress achieved would lead to more informed decision-making on the purchase and development of software assets.

Recommendation No.4

3.30 To assist in directing funding to software assets that best support strategic and operational objectives, the ANAO recommends that entities:

- periodically assess the risk profile of existing software assets;
- base software asset investment decisions on whole-of-life costs; and
- align information and communications technology plans with capital management plans.

Entities' responses

ABS

3.31 Agree.

CASA

3.32 Agreed. CASA has commenced periodic risk profiling of all assets and bases software asset investment decisions on whole-of-life costs. CASA is implementing the alignment of the Capital Budget Plan with the longer-term ICT strategic Plan.

IP Australia

3.33 Agreed.



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Auditor-General

Canberra ACT

28 October 2010

Appendices

Appendix 1: Recommendations from Audit Report No.54 2002–03

The recommendations from Audit Report No.54 2002–03, *Capitalisation of Software* are presented below.

Recommendation No. 1

The ANAO recommends that entities:

- assess risks in relation to software development and acquisition, and specifically software capitalisation, including intellectual property issues, as part of the business project planning phases; and
- establish suitable processes to monitor those risks throughout the software project.

Recommendation No. 2

The ANAO recommends that entities:

- develop clear policies, procedures and guidelines for software assets that reflect the requirements of the Finance Minister's Orders and incorporate appropriate guidance on intellectual property;
- ensure that the useful lives of software assets are reviewed at least annually to meet accounting standard requirements and ensure they reflect factors such as asset usage and the rate of technical obsolescence; and
- review capitalisation thresholds to ensure that accounting policies and practices are consistent.

Recommendation No. 3

The ANAO recommends that entities develop asset management plans, which incorporate software assets, and are based on an asset life-cycle approach.

Recommendation No. 4

The ANAO recommends that entities:

- establish adequate processes to inform the finance area on a timely basis when software assets become operational, or ready for use, to ensure amortisation commences;
- capture project management and operational staff time for specific software projects; and
- improve the controls over the accuracy of capitalised software costs by, either routinely reviewing the data manually extracted from the time recording system, or enhancing the functionality of the system to automatically produce the required data.

Recommendation No. 5

The ANAO recommends that entities ensure appropriate arrangements are established for regular communication between the ICT and finance areas to enhance understanding of the roles and responsibilities of each area, particularly on accounting issues.

Recommendation No. 6

The ANAO recommends that entities:

- ensure that decisions taken by senior management committees responsible for software projects are appropriately documented and actioned; and
- undertake post-implementation reviews for significant software projects, which incorporate software capitalisation issues, and report the results to appropriate management committees.

Appendix 2: Key costs that can be capitalised or expensed

1. The Table below presents examples of key costs incurred during the development of software assets, and whether they can be capitalised or should be expensed, having regard to generally accepted accounting principles and AGN 2007/1.
2. Within this context, the Table provides guidance that entities can apply subject to the particular circumstances under consideration. In all cases, entities need to be able to demonstrate that the item meets the definition of an intangible asset and the recognition criteria in AASB 138. In order to be capitalised, all costs mentioned below that can be capitalised must also be able to be measured reliably and directly attributed to the creation, production and preparation of an internally generated intangible asset.

Table A 1

Key costs that can be capitalised or expensed

Costs	Capitalise	Expense
RESEARCH PHASE		
Preparation of the proof of concept, business case and other documents for approval, evaluation and selection of final alternatives.		✓
DEVELOPMENT PHASE AND IMPLEMENTATION PHASE		
Staff time (such as salaries and wages, superannuation, and leave on-costs) directly related to developing or testing the asset in the development phase, including developers, specialist analysts, testers, database designers, security specialists, system architects, release managers and other staff involved in the development phase.	✓	
Contractor and supplier expenses directly related to the development and/or testing of the asset.	✓	
Direct development costs including: system user interface and database design; system build – establish development/configuration environment, coding and unit testing; and system and user acceptance testing – establish test environment, test plans, conversion of test data and retesting in response to error correction.	✓	

Costs	Capitalise	Expense
Initial pilot system to test feasibility prior to developing the final system to be capable of being used by the entity.	✓	
Travel costs where these are directly attributable to developing or testing the asset.	✓	
Recruitment costs for staff recruited specifically to develop or test the asset.	✓	
Depreciation of software licences and computers specifically required to develop or test the asset.	✓	
Costs of computing services that support computers used to develop the asset such as ICT support costs, server costs and security administration, where directly attributable.	✓	
Data migration costs but only for test data used for system testing.	✓	
Other data migration costs		✓
General administration costs where these are directly attributable to developing or testing the asset.	✓	
Deployment costs associated with releasing an application into production, (where directly attributable) including the cost of: <ul style="list-style-type: none"> establishing the production environment; releasing into production the new software asset; and ensuring the production system works as planned and users can access it. 	✓	
All training costs (except for relevant software that forms part of the software asset, for example an in-built training module).		✓
Developing user manuals.		✓
Post implementation reviews.		✓
Project governance committees.		✓
Promotional costs.		✓

Source: ANAO analysis based on AASB 138, AASB 119 and AGN 2007/1.

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