

The Auditor-General  
Audit Report No.49 2000–2001  
Performance Audit

# **Information Technology in the Health Insurance Commission**

**Health Insurance Commission**

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of Australia 2001  
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Canberra ACT  
12 June 2001

Dear Madam President  
Dear Mr Speaker

The Australian National Audit Office has undertaken a performance audit in the Health Insurance Commission in accordance with the authority contained in the *Auditor-General Act 1997*. I present this report of this audit, and the accompanying brochure, to the Parliament. The report is titled *Information Technology in the Health Insurance Commission*.

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



P. J. Barrett  
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

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# Abbreviations/Glossary

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ACF2	Security software that manages an individual's access to programs and data on large computers
Administration Systems	HIC's financial management systems including FINNET and Aurion
ANAO	Australian National Audit Office
Aurion	HIC's payroll system
BCP	Business Continuity Plan
CobiT	Control Objectives for Information and Related Technologies
CSIP	Client Service Improvement Plans
CTS	Claims Transmission System
EFT	Electronic Funds Transfer
FINNET	Financial Network (using SAP)
HIC	Health Insurance Commission
IBM GSA	International Business Machines Global Services Australia
ISO	International Standards Organisation
IT	Information Technology
ITSD	Information Technology Services Division
Medicare	Australian Health Insurance Scheme
PBS	Pharmaceutical Benefits Scheme
RACF	Security software that manages an individual's access to programs and data on large computers
SAP	HIC's financial accounting application





# **Summary and Recommendations**



# Summary

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1. The Health Insurance Commission (referred to variously as HIC and the Commission) is a Commonwealth statutory authority established by the *Health Insurance Commission Act 1973*.

2. The Commission's main activities are the administration of Medicare, the Pharmaceutical Benefits Scheme (PBS) and the 30 per cent Private Health Insurance Rebate Scheme. The Commission also administers:

- the Australian Childhood Immunisation Register;
- the Practice Incentive Program;
- the General Practice Immunisation Incentives Program;
- aspects of the Private Health Insurance Incentives Scheme;
- simplified billing arrangements;
- other Health Program Grants; and
- arrangements for Medicare and nursing home benefits involving compensable injuries.

3. In addition, the Commission processes benefit payments for the Department of Veterans' Affairs Treatment Accounts and the Office of Hearing Services.

4. In 1999–2000, the HIC<sup>1</sup>:

- issued more than 3.8 million Medicare cards; processed over 209 million Medicare claims; and paid in excess of \$6.9 billion in benefits. Almost 152 million of the claims processed were direct-billed, accounting for 72.3 per cent of all claims. As an indication of the growing use of Information Technology (IT) by practitioners, 61.2 per cent of these direct-bill claims were lodged electronically, compared with 51.3 per cent in 1998–99;
- processed over 149 million Pharmaceutical Benefits Scheme (PBS) and Repatriation Pharmaceutical Benefits (RPBS) prescriptions, representing in excess of \$3.5 billion in PBS and RPBS benefits; and
- expended in excess of \$95 million on its normal IT operations

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<sup>1</sup> Health Insurance Commission Annual Report 1999–2000, August 2000.

5. This audit focused on four key IT systems supporting HIC's operations—the Medicare payments system, the PBS payments system, the FINNET accounting system, and the Aurion human resources and payroll system. A description of these systems is included in Appendix 1. The conclusions drawn in this report are based on an examination of these systems. However, the conclusions are also likely to be applicable to the Commission's IT systems as a whole.

## **Audit objective and approach**

6. The audit was conducted as a joint financial statement and performance audit of HIC's IT systems. The objective of the financial statement component of the audit was to express an opinion on whether HIC could rely on its IT systems to support production of a reliable set of balances for the financial statements. The objective of the performance audit component was to determine whether HIC's IT systems' outputs met specified quality and service delivery targets.

7. Building on the work undertaken during the financial statement audit, the ANAO conducted additional analyses of some other aspects of HIC's IT systems. This report provides the ANAO's findings and conclusions as a result of those additional analyses. The additional analysis aimed to:

- identify sound practice as well as any deficiencies in IT controls and any resulting effect on the Commission's operations;
- determine whether the IT systems outputs meet quality and service delivery parameters set by the Commission; and
- identify better practice aspects of system management that could be applied more generally by the Commission.

8. The first phase of the audit addressed the financial statement aspects. The results are set out in Chapter 2. The audit team considered that the performance aspects of the audit objective were best addressed using an international set of standards, particularly given the global nature of information technology developments. The Information Systems Audit and Control Foundation has developed standards, known as CobiT (Control Objectives for Information and Related Technology). CobiT standards are tools generally applicable to, and are an accepted standard for, IT governance. Appendix 2 provides further information about the CobiT standards. HIC's IT systems were measured against the CobiT standards and the criteria embedded in those standards.

9. The CobiT process and control objectives fall into four main domains:

- planning and organisation (addressed in Chapter 3 of this report);
- acquisition and implementation (Chapter 4);
- delivery and support (Chapter 5); and
- monitoring (Chapter 6).

10. Due to issues of material relevance, time and cost constraints, the audit did not address all the specific control objectives within these four main domains. The audit did, however, concentrate on controls critical to HIC's business.

## Overall audit conclusion

11. HIC's management of its IT systems was generally satisfactory. In regard to specific objectives, the ANAO concluded that:

- the results of testing indicated that reliance could be placed on HIC's IT systems and controls, and on the accuracy of the accounts and records, for its business systems (Medicare, PBS) to the extent necessary to form an opinion on the Commission's financial statements. However, the ANAO concluded that the HIC's financial management system controls could not be fully relied on, leading to the ANAO extending its testing around the system in order to provide adequate assurance on the financial statements; and
- the outputs of the four systems used to support HIC's payment responsibilities met HIC's quality and service delivery parameters.

12. The ANAO's additional analyses, referred to in paragraph 7 above, also concluded that:

- HIC's IT planning and organisation were satisfactory, recognising that much of these aspects of HIC's IT was in the process of change, as explained below. HIC is continuing to develop links between its business objectives and IT strategies;
- HIC's operational IT procedures and processes were satisfactory and change control processes were sound;
- HIC had satisfactory performance, capacity and problem management procedures. However, HIC's contingency planning could be improved by extending the IT disaster recovery plan beyond solely IT issues; and
- arrangements to monitor IT processes could be improved by aligning IT performance targets with HIC's Charter of Care, and by Audit Branch conducting IT audits.

13. The ANAO audit was undertaken at a time of significant change in the HIC. The Commission is revising its strategic and corporate planning through the implementation of its Strategic Management Framework. This framework, expected to be finalised in mid 2001, includes strategic, corporate and corporate support plans. HIC will produce a revised business model (the core business strategy to achieve the HIC vision) and business architecture (the internal capabilities required by HIC to implement the Strategic Plan). Consequent to these changes, HIC is revising its IT architecture and its IT Services Plan.

14. IBM GSA became HIC's service provider on 1<sup>st</sup> April 2000 during the audit. HIC's IT architecture and Services Plan were dependent on the as yet incomplete (at the time of the audit) Strategic Management Framework. The ANAO recognised that many of the documents and practices expected of good governance in IT were being changed to align with the above Framework and would have to be examined as 'work in progress'.

15. A summary of the ANAO conclusions against each of the CobiT domains, and against each CobiT objective within the domains, is given in Table 1 in Chapter 1.

## Key Findings

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***Planning and organisation (Chapter 3): this component of the audit aimed to identify the link between HIC's business objectives and its IT strategies.***

16. As stated in paragraph 13, the ANAO found HIC in the process of significant change. HIC was developing an IT services Plan and an IT Architecture Plan to support the Business Architecture. The HIC expects both these plans to be finalised by mid-2001. The ANAO noted the development of the plans.

17. The IT Services Division (ITSD) of HIC conducted a risk assessment in mid-2000. A number of high level risks were identified. However, the ANAO found no framework in place to assess organisation-wide risks, leaving a potential gap in contingency planning. The ANAO made recommendations to address this deficiency and also recommended the framework include a methodology to assess risks, a methodology to review the risk model over time, and identification of the owners of the risk model.

18. The ANAO found the HIC to have appropriate methodologies in place to manage the quality of its IT processes and products

***Developing and maintaining IT procedures and managing change (Chapter 4): this component of the audit aimed to determine whether HIC had sound and structured IT procedures and appropriate controls for changes to its IT systems.***

19. The ANAO concluded that the HIC's operational IT procedures and processes were satisfactory, and change control processes were sound.

***Delivery and support (Chapter 5): this component of the audit aimed to identify the support process and controls put in place by HIC to ensure the actual delivery of the required IT services.***

20. The ANAO found HIC's management of IT performance and capacity, together with its management of problems and incidents, to be satisfactory.

21. HIC had recently undertaken a major project addressing contingency planning. The ANAO considered the results of this project and recommended that contingency planning be business driven and extended to include areas outside IT.

22. IT security was generally satisfactory on HIC's business systems (Medicare, PBS). However, the ANAO found business access profiles had not been reviewed for some time and recommended an early review of the profiles to ensure that they reflect business requirements.

23. The ANAO found that it could not fully rely on IT controls around HIC's financial management system, FINNET, and therefore extended its testing to provide suitable assurance on the financial statements.

24. The ANAO found costs were recorded only for major projects and these costs did not include cost incurred by the business areas external to IT. Therefore, the HIC's knowledge of the costs of delivering significant outputs and outcomes was incomplete. The ANAO recommended that the HIC fully identify all costs associated with all IT projects so as to ensure the completeness of its costing of its outputs.

***Monitoring (Chapter 6): this component of the audit aimed to determine whether monitoring arrangements allowed HIC's managers to assess adequately the quality of IT processes and compliance with control requirements.***

25. The ANAO found the only performance target set for IT was that of mainframe response time. The ANAO recommended that the HIC consider further targets designed to align IT with its Charter of Care and to better assess IT performance against recognised business better practice.

26. The ANAO also found that the HIC Audit Branch did not undertake IT related audits. The ANAO considers that IT audits should be a major part of the Audit Branch audit program for an organisation so dependent on electronic processing and storage of information.



# Recommendations

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*The most important recommendations are 1, 4, 5 and 6.*

**Recommendation No.1  
Para. 2.12** The ANAO recommends that the HIC strengthen controls over the FINNET financial management system so that it can be used to produce accurate and reliable financial data.

*HIC response:* Agreed.

**Recommendation No.2  
Para. 3.17** The ANAO recommends that HIC extend its IT risk framework to an organisation-wide risk framework. This framework would include: a methodology to assess and treat risks; a capacity to update the risk model over time; identification of, and responsibilities of, the owners of the risk model; and ensuring a formal acceptance of any residual risk.

*HIC response:* Agreed.

**Recommendation No.3  
Para. 5.11** The ANAO recommends that HIC enhance the IT disaster recovery plan by:

- widening the plan to incorporate a total risk management approach;
- performing a business impact analysis to ensure that the IT disaster recovery plan is business-driven rather than technology-driven;
- coordinating with the business continuity planning process to ensure consistency between both sets of plans; and
- considering scenarios other than a loss of IT, such as a total loss of facilities, people and critical resources supporting the IT function; and implement a review process to ensure the plans are consistent.

*HIC response:* Agreed.

**Recommendation No.4**  
**Para. 5.20** The ANAO recommends that the HIC review its computer security profiles to ensure that the profiles match the requirements of the appropriate business function.

*HIC response:* Agreed.

**Recommendation No.5**  
**Para. 5.26** The ANAO recommends that the HIC identify and record all costs for all IT projects.

*HIC response:* Agreed.

**Recommendation No.6**  
**Para. 6.5** The ANAO recommends that the HIC develop IT performance targets to ensure that IT aligns with and supports the targets set in its Charter of Care. The IT performance targets should be designed with reference to comparable better practice; measure key aspects of IT systems performance; and include reporting systems to IT and non-IT users.

*HIC response:* Agreed.

# **Audit Findings and Conclusions**



# 1. Introduction

---

## Background

1.1 The ANAO contracted Deloitte Touche Tohmatsu to assist with the audit of information technology (IT) in three Commonwealth agencies, Centrelink, the Health Insurance Commission and the Department of Veterans' Affairs.

1.2 The result of the audit of each agency is reported separately. This report covers the audit of the Health Insurance Commission (referred to variously as HIC and the Commission).

## Health Insurance Commission

1.3 The Health Insurance Commission is a Commonwealth statutory authority established by the *Health Insurance Commission Act 1973*.

1.4 The Commission's main activities are the administration of Medicare, the Pharmaceutical Benefits Scheme (PBS) and the 30 per cent Private Health Insurance Rebate Scheme. The Commission also administers:

- the Australian Childhood Immunisation Register;
- the Practice Incentive Program;
- the General Practice Immunisation Incentives Program;
- aspects of the Private Health Insurance Incentives Scheme;
- simplified billing arrangements;
- other Health Program Grants; and
- arrangements for Medicare and nursing home benefits involving compensable injuries.

1.5 In addition, the Commission processes benefit payments for the Department of Veterans' Affairs Treatment Accounts and the Office of Hearing Services.

1.6 In 1999–2000 the HIC:

- issued more than 3.8 million Medicare cards; processed over 209 million Medicare claims; and paid in excess of \$6.9 billion in benefits. Almost 152 million of the claims processed were direct-billed, accounting for 72.3 per cent of all claims. As an indication of the growing use of IT by practitioners 61.2 per cent of these direct-bill claims were lodged electronically, compared with 51.3 per cent in 1998–99;

- processed over 149 million Pharmaceutical Benefits Scheme (PBS) and Repatriation Pharmaceutical Benefits (RPBS) prescriptions, representing in excess of \$3.5 billion in PBS and RPBS benefits; and
- expended in excess of \$95 million on its normal IT operations.

**1.7** This audit focused on four key IT systems supporting HIC's operations—the Medicare payments system, the PBS payments system, the FINNET accounting system, and the Aurion human resource and payroll system. A description of these systems is found in Appendix 1. The conclusions drawn in this report are based on an examination of these systems. However, the conclusions are also likely to be applicable to the Commission's IT systems as a whole. On 1<sup>st</sup> April 2000 the HIC outsourced its IT infrastructure to IBM GSA.

## **Audit objective**

**1.8** The audit was conducted as a joint financial statement and performance audit of HIC's IT systems. The objective of the financial statement component of the audit was to express an opinion on whether HIC could rely on its IT systems to support production of a reliable set of balances for the financial statements. The objective of the performance audit component was to determine whether HIC's IT systems' outputs met specified quality and service delivery targets.

**1.9** Building on the work undertaken during the financial statement audit, the ANAO conducted additional analyses of some other aspects of HIC's IT systems. This report provides the ANAO's findings and conclusions as a result of the additional analyses. The additional analyses aimed to:

- identify sound practice as well as any deficiencies in IT controls and any resulting effect on the Commission's operations;
- determine whether the IT systems outputs meet quality and service delivery parameters set by the Commission; and
- identify better practice aspects of system management that could be applied more generally by the Commission.

## **Audit approach, methodology and scope**

**1.10** The audit was conducted partly as an element of the annual examination of the financial statements of HIC, and partly as a performance audit of HIC's use of IT. The financial statement audit examined IT system controls with a view to forming an opinion on HIC's financial statements. An unqualified audit opinion on HIC's 1999–2000 financial statements was included in HIC's 1999–2000 Annual Report.

**1.11** The above objectives were addressed by assessing key aspects of HIC's systems against selected, relevant control objectives of an international set of standards. The Information Systems Audit and Control Association (ISACA) Foundation developed those standards. ISACA is a worldwide organisation based in the USA. The standards are called Control Objectives for Information and Related Technology, or CobiT.<sup>2</sup> CobiT standards are tools generally applicable to, and an accepted standard for, good IT governance. The CobiT standards formed the audit criteria for the second part of the audit. They are summarised in Table 1. The Table has been extended from the standard CobiT approach to include:

- a summary of whether the ANAO considered that the HIC addressed had the CobiT objective satisfactorily;
- an indication of where the ANAO had addressed a specific CobiT objective and where it had not due to relevance, time and cost constraints; and
- a cross-reference to the paragraph in the report that addresses the CobiT objective.

**1.12** The audit included a review of HIC's documentation and reports, and interviews with HIC staff.

## Report structure

**1.13** Chapter 2 provides an overall summary of the results of the ANAO's financial statement audit component of this integrated audit.

**1.14** The CobiT process and control objectives fall into four main domains. The findings about each of the four CobiT domains are reported in the following chapters:

- planning and organisation (addressed in Chapter 3 of this report);
- acquisition and implementation (Chapter 4);
- delivery and support (Chapter 5); and
- monitoring (Chapter 6).

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<sup>2</sup> CobiT copyright notice: 'Copyright 1996, 1998, 2000 Information Systems Audit and Control Foundation. Reprinted with the permission of the Information Systems Audit and Control Foundation and IT Governance Institute'.

**1.15** The audit was conducted in compliance with ANAO Auditing Standards. Its estimated cost was \$337 444.

**Table 1**

**Control Objectives for Information and Related Technology  
Process and Control Objectives—Summary Results for HIC**

CobiT Process and Control Objectives		Information criteria <sup>1</sup>							Rating <sup>2</sup> Scope		Report Reference	
		Effectiveness	Efficiency	Confidentiality	Integrity	Availability	Compliance	Reliability	S'tactory/Recomm	Not in scope <sup>3</sup>		
Planning and organisation												
P01	Define a strategic IT plan	P	S						✓		3.2	
P02	Define the information architecture	P	S	S	S				✓		3.7	
P03	Determine the technological direction	P	S							N		
P04	Define the IT organisation and relationships	P	S							N		
P05	Manage the IT investment	P	P					S		N		
P06	Communicate management aims and direction	P					S		✓		3.11	
P07	Manage human resources	P	P							N		
P08	Ensure compliance with external requirements	P					P	S		N		
P09	Assess risks	S	S	P	P	P	S	S	R		3.14	
P10	Manage projects	P	P							N		
P11	Manage quality	P	P		P			S	✓		3.19	
Planning and organisation overall										✓		
Acquisition and implementation												
AI1	Identify solutions	P	S							N		
AI2	Acquire and maintain application software	P	P		S		S	S		N		
AI3	Acquire and maintain technology architecture	P	P		S					N		
AI4	Develop and maintain IT procedures	P	P		S		S	S	✓		4.2	
AI5	Install and accredit systems	P			S	S				N		
AI6	Manage changes	P	P		P	P		S	✓		4.5	
Acquisition and implementation overall										✓		



## CobiT Process and Control Objectives

Information criteria <sup>1</sup>							Rating <sup>2</sup> Scope		Report Reference
Effectiveness	Efficiency	Confidentiality	Integrity	Availability	Compliance	Reliability	S/factory/Recomm	Not in scope <sup>3</sup>	

### Delivery and support

DS1	Define service levels	P	P	S	S	S	S		N	
DS2	Manage third party service	P	P	S	S	S	S		N	
DS3	Manage performance and capacity	P	P		S			✓		5.3
DS4	Ensure continuous service	P	S		P			R		5.7
DS5	Ensure systems security			P	P	S	S	R		5.14
DS6	Identify and attribute costs		P				P	R		5.22
DS7	Educate and train users	P	S						N	
DS8	Assist and advise IT customers	P							N	
DS9	Manage the configuration	P			S		S		N	
DS10	Manage problems and incidents	P	P		S			✓		5.29
DS11	Manage data				P		P		N	
DS12	Manage facilities				P	P			N	
DS13	Manage operations	P	P		S	S			N	

### Delivery and support overall

✓

### Monitoring

M1	Monitor the process	P	S	S	S	S	S	R		6.2
M2	Assess internal control adequacy	P	P	S	S	S	S	✓		6.7
M3	Obtain independent assurance	P	P	S	S	S	S	✓		6.12
M4	Provide for independent audit	P	P	S	S	S	S	✓		6.15

### Monitoring overall

✓

Notes to table:

1 P = a primary criteria addressed by the objective, S = secondary, a blank cell indicates the objective does not address the information criteria.

2 R indicates an ANAO recommendation.

3 Within time and cost constraints, the ANAO concentrated on controls critical to HIC's business.

## 2. Financial Statement Audit

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*The ANAO reported the results of its audit relating to HIC's financial statements in Report No.52 of 1999–2000, Control Structures as Part of the Audits of Financial Statements of Major Commonwealth agencies for the Period Ending June 2000. The relevant sections of the report are detailed below.*

### Operating environment

**2.1** The key risk areas within the HIC include the identification and management of fraud and inappropriate practices, administering the thirty percent Private Health Insurance Rebate Scheme, management of service level arrangements with other agencies, compensation case management, and the management of its IT control environment and associated operating systems.

### Audit findings

#### FINNET Review

**2.2** A comprehensive review of the Commission's Financial Management System, FINNET, was conducted as part of the 1999–2000 interim financial statement audit. Specific attention was given to FINNET security, financial accounting and IT infrastructure. The following control weaknesses were identified:

- security—there was excessive access to the system, and inadequate maintenance of account master data and sensitive transaction codes. There was also inadequate systems maintenance and inadequate review of system maintenance and changes;
- financial accounting—excessive access was allowed in relation to journal processing and the amendment of accounting master data. There was no utilisation of FINNET reporting functionality and controls, and no review of data maintenance and changes; and
- IT infrastructure—specific attention needed to be given to the approval of modification processes and system access.

**2.3** The ANAO concluded that it could not fully rely on controls over FINNET and therefore extended its testing around the system to provide suitable assurance on the financial statements.

**2.4** The Commission has agreed to strengthen controls over FINNET and has implemented a number of the recommendations, addressing the above points, made by the ANAO during the 1999–2000 interim financial statement audit.

## **Medicare and Pharmaceutical Benefits Scheme (PBS)**

**2.5** The 1999–2000 ANAO financial statement audit reviewed whether the findings of the 1998–99 financial statement audit had been addressed by HIC. The results of the 1999–2000 financial statement audit are reported here.

**2.6** During the audit of the 1998–99 financial statements, the ANAO highlighted a number of weaknesses in controls surrounding the processing of Medicare and Pharmaceutical Benefit payments. The significant weaknesses related to:

- quality control;
- updates to standing data;
- validity of Pharmaceutical Benefits Scheme payments to non-concessional individuals; and
- the process for changing bank account details for electronic funds transfer.

**2.7** The Commission advised during the 1999–2000 financial year that forthcoming changes to legislation and redevelopment of the benefit payments systems would address the above issues for 2000–01. The ANAO will review and comment on this redevelopment in the forthcoming financial statement audit report for 2000–01.

## **Other Matters**

**2.8** The ANAO brought to the Commission’s attention a number of other control matters relating to the IT control environment, specifically, security over logical and physical access to the Commission’s IT environment and associated applications.

**2.9** In the interim financial statement audit for 2000–01, the ANAO revisited the adequacy of controls over the HIC’s financial information system. The ANAO acknowledged the significant improvements that had been made, but concluded that current controls require further strengthening to ensure the efficient production of accurate and reliable financial data.

## **HIC response to issues raised in this Chapter**

**2.10** The Commission has advised that policies and procedures are currently being put in place to address the outstanding matters at this stage.

## Conclusion

**2.11** The ANAO financial statement information technology audit found that the results of testing indicated that reliance could be placed on HIC IT business systems and controls, and accuracy of the accounts and records, to the extent necessary to form an opinion on the Commission's financial statements. However, the ANAO found that it could not fully rely on the HIC's financial management system and extended testing to provide adequate assurance.

## Recommendation No.1

**2.12** The ANAO recommends that the HIC strengthen controls over the FINNET financial management system so that it can be used to produce accurate and reliable financial data.

### *HIC response*

**2.13** Agreed. In 2000–01 the HIC undertook a review of FINNET (SAP R/3) to determine the effectiveness of the key controls within the system to ensure the reliability of the information provided to the Commission.

**2.14** Significant improvement has been made in the basis security to strengthen the current controls. This has been acknowledged by the ANAO in the interim audit report for the 2000–01 financial statements.

### 3. IT Planning and Organisation

Key aspects of HIC's IT planning and organisation are assessed in this chapter. In particular, the link between HIC's business goals and its IT strategic planning is considered as well as the organisation of HIC's information systems, the communication of IT aims and directions by management, risk assessment and quality management.

**3.1** The CobiT domain *IT planning and organisation* addresses the audit objectives of identifying sound practice and determining whether the IT systems meet quality and service delivery parameters set by the Commission. It is sound practice to develop IT plans and to address the other factors identified in the introduction to this chapter. Management of quality ensures the Commission's quality and service parameters are met. Table 2 below summarises the CobiT objectives for this domain and the conclusions reached against those objectives by the ANAO.

**Table 2**

**Control Objectives for Information and Related Technology  
Process and Control Objectives—Planning and Organisation**

CobiT Process and Control Objectives	Information criteria <sup>1</sup>							Rating <sup>2</sup> Scope		Report Reference		
	Effectiveness	Efficiency	Confidentiality	Integrity	Availability	Compliance	Reliability	Satisfactory/Recomm	Not in scope <sup>3</sup>			
Planning and organisation												
P01	Define a strategic IT plan	P	S						✓		3.2	
P02	Define the information architecture	P	S	S	S				✓		3.7	
P03	Determine the technological direction	P	S							N		
P04	Define the IT organisation and relationships	P	S							N		
P05	Manage the IT investment	P	P					S		N		
P06	Communicate management aims and direction	P					S		✓		3.11	
P07	Manage human resources	P	P							N		
P08	Ensure compliance with external requirements	P					P	S		N		
P09	Assess risks	S	S	P	P	P	S	S	R		3.14	
P10	Manage projects	P	P							N		
P11	Manage quality	P	P		P			S	✓		3.19	
Planning and organisation overall											✓	

Notes to table:

1 P = a primary criteria addressed by the objective, S = secondary, a blank cell indicates the objective does not address the information criteria.

2 R indicates an ANAO recommendation.

3 Within time and cost constraints, the ANAO concentrated on controls critical to HIC's business.

## Define a strategic IT plan

3.2 The ANAO assessed against CobiT criteria the processes underlying HIC's strategic IT planning. This approach sought to establish whether:

- a structured planning approach had been adopted;
- a methodology existed to formulate and modify plans;
- IT strategic planning considered HIC's vision, purpose and behaviours; and
- risk assessments of IT initiatives were conducted.

## Organisational Strategic Planning

3.3 The ANAO recognises that HIC is undergoing significant change in strategic and corporate planning through the implementation of their Strategic Management Framework.

3.4 The Strategic Management Framework includes corporate planning, comprising of the following components:

- the Strategic Plan (the broad vision for HIC);
- the Corporate Business Plan (identifying corporate objectives);
- Corporate Supporting Plans (supporting specific corporate objectives); and
- Division and State Plans (specific division and state objectives).

3.5 Derived from the strategic plan are the following two key deliverables:

- the Business Model (the core business strategy to achieve the vision); and
- the Business Architecture (the internal capabilities required by HIC to implement the Strategic Plan).

## IT Strategic Plan

3.6 The HIC informed the ANAO that, to support the Strategic Plan, an Information Technology Services Plan (as part of the Corporate Supporting Plans and sponsored by the General Manager of the Information Technology Services Division (ITSD)) will be developed. HIC advised that the IT Services Plan will include IT technology strategies and long and short term strategies supporting the corporate Strategic Plan, Business Architecture and Corporate Business Plan. At the time of the ANAO review, HIC expected the IT Services Plan to be completed by June 2001.

## Define the information architecture

**3.7** HIC's information architecture refers to the creation and maintenance of a business information model that best organises the information systems. In examining this element, the ANAO sought to establish whether HIC's information model:

- adequately defined all appropriate systems;
- was documented, maintained and appropriately communicated; and
- clearly assigned ownership of data and related access rules.

**3.8** The ANAO found that, at the time of the audit review, the current documented model of HIC's information architecture was incomplete. Given the dynamic nature of HIC's Medicare and PBS systems, changes and revisions to all relevant documentation should occur in a timely fashion. By not maintaining current documentation of key aspects of the information systems model, there are increased risks that:

- changes are made to the information systems model that are inconsistent with information technology plans;
- associated costs and risks may not be accurately identified; and
- responsibilities—such as system changes—cannot be effectively discharged.

**3.9** HIC informed the ANAO that the IT Architecture and Implementation Office within ITSD will document an IT Architecture Plan to support the Business Architecture. HIC expect to finalise this by June 2001. The IT Architecture and Implementation Office within ITSD will be responsible for maintaining the data architecture once it is defined. HIC advised that the plan will include the following components:

- applications—defining the development architecture (hardware and software platforms to be used) and data architecture; and
- IT components—defining security administration and procedures, operational architecture, capacity management and infrastructure (ie. physical design of hardware and software platforms).

**3.10** HIC envisages that the IT Architecture necessary to support Release 1 of the Business Architecture Transition Plan will be in place by mid-June 2001, and that the Architecture will evolve to support the planned expansion of Business Architecture requirements.

## Communicate management aims and directions

**3.11** The CobiT objective *communicate management aims and direction* is concerned with ensuring user awareness and understanding of management aims for the use and control of IT.

**3.12** HIC management communicates to users the organisation's broad goals through an existing Strategic Plan developed in 1999. This plan, which is to be replaced by the new Strategic Plan to be developed in 2000–01, broadly outlines management's current vision, approach and key result areas. Apart from the Strategic Plan and Business Plan to be developed, HIC has implemented team-based business plans entitled Customer Service Improvement Plans (CSIP). These plans, at a micro-level, are used as continuous improvement tools across all teams in HIC, including ITSD, and are monitored by senior managers.

**3.13** The ANAO concluded that HIC's communication of its management's aims and directions to users was adequately covered by the above documents.

## Assess risks

**3.14** The process of assessing and managing risks is concerned with ensuring the achievement of business objectives and responding appropriately to threats to the provision of business services. In the case of HIC, the assessment and management of IT risks should be a considerable component of an overall risk management strategy designed to protect its business continuity and assets. The identification, analysis, treatment and monitoring of threats to HIC's assets that are IT related or dependent would require the expertise and input of the IT areas. This would ensure that specific IT threats and risks can be effectively identified and managed in the context of the overall management of risk at HIC.

**3.15** In assessing HIC's performance against the CobiT area, the ANAO sought to establish whether, at the higher level, management had implemented an effective overall risk management process that included:

- a systematic risk framework and approach;
- regular revisions;
- consistency with and consideration of organisation wide objectives; and
- the formal acceptance of any residual risk.



**3.16** ITSD conducted a risk assessment in June 2000. This assessment identified a number of high-level risks. The ANAO understands that the HIC has also commissioned action plans. However, the ANAO found from interviews with key ITSD staff that there is no risk framework in place to assess organisation-wide IT and non-IT risks. Although the work commissioned by HIC was a risk assessment, the ANAO did not find any framework to assess and develop an action plan to mitigate these risks, revise the model over time and assess risks against organisation-wide objectives. The action plans are being considered by ITSD for implementation and for further application to other areas of IT not controlled by ITSD.

## Recommendation No.2

**3.17** The ANAO recommends that HIC extend its IT risk framework to an organisation-wide risk framework. This framework would include: a methodology to assess and treat risks; a capacity to update the risk model over time; identification of, and responsibilities of, the owners of the risk model; and ensuring a formal acceptance of any residual risk.

### *HIC response*

**3.18** Agreed. A comprehensive organisation-wide risk management framework is under development. It will address all of the issues raised by this audit and will be in place prior to the end of the current financial year.

## Manage quality

**3.19** The process of managing IT quality requires quality management standards and methodology. The Cobit criteria require an organisation to have a quality plan, defined quality assurance responsibilities, a system development life cycle, procedures for testing programs and systems, and regular quality assurance reviews and reporting.

**3.20** The ANAO found that HIC's major IT projects are subject to a formal system development life cycle methodology, are tested in environments similar to the production systems and are designed, developed, tested and implemented by specialist teams. The ANAO understands the HIC is about to introduce a new methodology in March 2001.

**3.21** HIC had not conducted any external certification of its systems. External certification is addressed in Chapter 6.

**3.22** The ANAO concluded that HIC's management of quality is satisfactory.

## Conclusion

**3.23** At the time of the audit, HIC's strategic and business plans were still under development. However, in expectation that the process will be successfully concluded in mid 2001, the ANAO concluded that the HIC's IT strategic planning and definition of its IT architecture was satisfactory. The ANAO also concluded that HIC's communication of its aims and directions to users, and its management of quality was satisfactory. The ANAO considered that HIC's risk management planning could be extended to areas outside IT to ensure more efficient and effective performance.

# 4. Developing and Maintaining IT Procedures and Managing Change

*This chapter reviews HIC’s framework for developing and maintaining IT procedures for the systems included in this audit, and HIC’s change control procedures for these systems.*

**4.1** The CobiT domain *acquisition and implementation* includes process and control objectives relating to the development and maintenance of IT procedures and the management of change. The ANAO selected these two process and control objectives as important to the overall governance of IT. IT procedures ensure consistent controls are in place and followed. Appropriate management of changes to IT systems ensures that the quality of the IT system is maintained. Together these objectives address system controls and the quality and service delivery parameters set by the Commission. Table 3 below summarises the CobiT objectives for this domain and the conclusions reached against those objectives by the ANAO.

**Table 3**  
**Control Objectives for Information and Related Technology**  
**Process and Control Objectives—Acquisition and Implementation.**

		Information criteria <sup>1</sup>							Rating <sup>2</sup> Scope		Report Reference	
		Effectiveness	Efficiency	Confidentiality	Integrity	Availability	Compliance	Reliability	Satisfactory/Recomm	Not in scope <sup>3</sup>		
CobiT Process and Control Objectives												
Acquisition and implementation												
AI1	Identify solutions	P	S							N		
AI2	Acquire and maintain application software	P	P		S		S	S		N		
AI3	Acquire and maintain technology architecture	P	P		S					N		
AI4	Develop and maintain IT procedures	P	P		S		S	S	✓		4.2	
AI5	Install and accredit systems	P			S	S				N		
AI6	Manage changes	P	P		P	P		S	✓		4.5	
Acquisition and implementation overall									✓			

Notes to table:

1 P = a primary criteria addressed by the objective, S = secondary, a blank cell indicates the objective does not address the information criteria.

2 R indicates an ANAO recommendation.

3 Within time and cost constraints, the ANAO concentrated on controls critical to HIC’s business.

## Develop and maintain IT procedures

**4.2** Developing and maintaining appropriate IT systems procedures is essential to ensure the efficient and effective use of existing applications and technological solutions. A structured approach to the development of user and operations procedure manuals and related training requirements is required. The ANAO sought to establish whether HIC adopted a sound and structured approach to the development of user and operations procedures and training.

**4.3** The ANAO found that for Medicare, PBS and FINNET systems:

- the maintenance of documentation (user, operational and technical) is the responsibility of the Application Development Team;
- users initiate change requests and are responsible for considering their service level and processing requirements; and
- all documentation relating to changes implemented is filed and available for reference.

**4.4** Overall, IT procedures were adequately documented and maintained.

## Manage changes

**4.5** The effective management of system changes is essential to minimise the likelihood of disruptions, unauthorised alterations and errors to the IT systems that support HIC's business processes. The process of change consumes significant resources and is inherently an area of high risk. For these reasons, the ANAO considers the management of change at HIC to be one of its most critical IT and business processes. The ANAO assessed the effectiveness of HIC's management of changes to the IT systems that support the Medicare, PBS and administration systems.

**4.6** The ANAO found that a formal process was in place to request, approve, develop and implement changes to applications. Changes are controlled through a change management system. All system changes are tested in special test conditions. Since HIC's computer systems have been outsourced, the service provider, which has responsibility to implement changes into production, has maintained the rigour of the process by only accepting any change when it is fully approved and documented.

## Conclusion

**4.7** The ANAO concluded that the HIC's IT procedures were adequately documented and maintained, and change control processes were sound.

## 5. Delivery and Support

*This chapter reports the results of reviews of HIC's management of its IT delivery and support, management of its IT performance and capacity, and how HIC ensured uninterrupted IT service, ensured system security, ensured cost attribution and managed IT problems and incidents.*

**5.1** The CobiT domain *delivery and support* addresses the IT process and control objectives relevant to IT delivery and support. It will be recalled that an audit objective was to determine whether the IT systems met quality and service delivery parameters set by the Commission. Therefore, this CobiT domain was especially relevant to the audit. Table 4 below summarises the CobiT objectives of this domain and the ANAO's conclusions against those objectives.

**Table 4**

**Control Objectives for Information and Related Technology  
Process and Control Objectives—Delivery and Support.**

CobiT Process and Control Objectives	Information criteria <sup>1</sup>							Rating <sup>2</sup> Scope		Report Reference
	Effectiveness	Efficiency	Confidentiality	Integrity	Availability	Compliance	Reliability	S'tactory/Recomm	Not in scope <sup>3</sup>	
Delivery and support										
DS1 Define service levels	P	P	S	S	S	S	S		N	
DS2 Manage third party service	P	P	S	S	S	S	S		N	
DS3 Manage performance and capacity	P	P			S			✓		5.3
DS4 Ensure continuous service	P	S			P			R		5.7
DS5 Ensure systems security			P	P	S	S	S	R		5.14
DS6 Identify and attribute costs		P					P	R		5.22
DS7 Educate and train users	P	S							N	
DS8 Assist and advise IT customers	P								N	
DS9 Manage the configuration	P				S		S		N	
DS10 Manage problems and incidents	P	P			S			✓		5.29
DS11 Manage data				P			P		N	
DS12 Manage facilities				P	P				N	
DS13 Manage operations	P	P		S	S				N	
Delivery and support overall								✓		

Notes to table:

1 P = a primary criteria addressed by the objective, S = secondary, a blank cell indicates the objective does not address the information criteria.

2 R indicates an ANAO recommendation.

3 Within time and cost constraints, the ANAO concentrated on controls critical to HIC's business.

**5.2** In order for HIC to deliver services to its clients, the necessary support processes must exist and operate effectively. For HIC, such support processes are driven from the mainframe computing facilities operated by HIC's service provider IBM GSA.

## **Manage performance and capacity**

**5.3** Effective management of IT system performance and capacity is important to ensure HIC has adequate capability to meet current and future requirements and also to ensure the optimal use of available capacity for performance needs. Management processes should include data collection and reporting on workload management, application sizing, resources and demand management.

**5.4** The ANAO reviewed the monitoring of performance by HIC's Capacity Planning Team. Data on the performance of systems was available for other teams within ITSD through the use of tables published on HIC's intranet. Daily meetings, held between the Capacity Planning Team, the Change Management Team and the Production Support Team, ensured timely resolution of operational problems and implementation of system changes.

**5.5** Overall, the ANAO found that HIC had:

- identified its IT performance requirements;
- monitored system performance including its availability;
- managed those services provided by its principal contractor, IBM GSA; and
- forecast future IT system requirements and acted appropriately on this information.

**5.6** The ANAO concluded that HIC managed its IT performance and capacity requirements adequately.

## **Ensure continuous service**

**5.7** Ensuring continuous service is concerned with making IT services available as required and continuing to be provided in the event of a disruption. This is enabled by developing, implementing and testing disaster recovery, contingency and continuity plans that address IT and business aspects. The ANAO considered HIC's continuity framework against these requirements.

**5.8** The ANAO found, at the time of the review, that HIC had undertaken a significant project to address contingency issues facing the Commission in the event of an IT failure. The ANAO considered the results of this project and raised several issues for HIC to consider as follows:

- HIC has developed business continuity plans, which specifically address a potential loss of information technology. However, no consideration had been given to the potential loss of other business resources (eg, staff);
- the development of the IT Disaster Recovery Plan (IT DRP) was completed separately to the business process continuity plans, with the consequent potential for incompatibility between the two;
- HIC is highly dependent upon IT as a critical supporting resource. The non-availability of critical IT systems will have immediate adverse impacts upon the ability of the Commission to operate. Despite this immediate impact, HIC has based its procedures on an information technology-driven expected recovery timeframe of 36–48 hours; and
- the business continuity planning process has not included state offices.

**5.9** The non-availability of critical resources (ie, IT, facilities, skilled staff) and associated processes would have an immediate and adverse affect on the ability of the HIC to meet its business obligations. A number of the services delivered by the HIC are critical to the economic and social well being of the public, and a failure to deliver could have significant adverse consequences for those concerned. The impacts that would result from a breakdown in HIC's IT services could include:

- public image;
- timely and accurate payment of benefits;
- detection of fraud and inappropriate servicing; and
- proper servicing of HIC programs.

**5.10** At the time of the review HIC was in the process of implementing an organisation-wide business continuity plan (incorporating all business risks) that included an IT disaster recovery plan. The disaster recovery plans also have been enhanced by IBM GSA as part of the outsourcing arrangement.

## Recommendation No.3

**5.11** The ANAO recommends that HIC enhance the IT disaster recovery plan by:

- widening the plan to incorporate a total risk management approach;
- performing a business impact analysis to ensure that the IT disaster recovery plan is business-driven rather than technology-driven;
- coordinating with the business continuity planning process to ensure consistency between both sets of plans; and
- considering scenarios other than a loss of IT, such as a total loss of facilities, people and critical resources supporting the IT function, and implement a review process to ensure the plans are consistent.

### *HIC response*

**5.12** Agreed. Since the release of the ANAO Better Practice Guide on Business Continuity, the HIC has moved to adopt the concepts outlined in the Guide which incorporate a total risk approach to business continuity. This wider approach is designed to encompass information technology, voice services, facilities and personnel.

**5.13** The HIC remains heavily dependent on its information technology resources for its business activities. While the Information Technology Disaster Plan is business driven in respect to prioritising systems for recovery, it remains a fact that the HIC is dependent on its IT infrastructure and the associated lead times for recovery in a disaster situation. A technology driven solution will often be required with an information technology outage prior to any business needs being prioritised.

## Ensure system security

**5.14** Ensuring systems security is concerned with safeguarding against unauthorised use, disclosure, modification, damage or loss of HIC's information that is stored, disseminated and maintained by its IT systems. The ANAO sought to assess the efficiency and effectiveness of HIC's performance against this area by considering whether access controls existed that ensured access to IT systems, data and programs supporting the Medicare, PBS and administration systems was restricted to authorised users.

**5.15** HIC had two levels of system security. The first level restricted access to the underlying infrastructure (mainframe and related areas). The second level restricted access to the Medicare, PBS and administration systems.



### *Access to the Underlying Infrastructure*

**5.16** HIC's mainframe applications are secured by a security application called RACF. The ANAO conducted a follow-up of the issues raised in the 1999 financial statement audit relating to the effectiveness of RACF. While most issues raised in 1999 have been resolved, the ANAO noted at the time of the review that HIC had yet to review the access group structure since implementation of the present system. At the time of this audit, IBM GSA had yet to take over the management of the data centre. IBM GSA is not responsible for setting security policy since this is set and administered by HIC. HIC has ultimate responsibility for ensuring that the security profiles held on the computer system match individual or group business responsibilities. HIC informed the ANAO that it has been reviewing and continues to review logical security for existing systems.

**5.17** The ANAO conducted a security review of the computer hardware and software supporting FINNET and Aurion. Several observations on the technical settings within the software were provided to HIC for resolution.

**5.18** The ANAO also conducted a review of the Electronic Benefits Transfer, Electronic Data Exchange and Internet Gateway used by HIC. The ANAO found that although there were sufficient controls to ensure that external unauthorised access was highly unlikely, there were still weaknesses in the systems. The ANAO provided several suggestions to HIC to resolve these weaknesses.

### *Access to Applications*

**5.19** The ANAO found appropriate controls for the creation, modification and termination of users, and the monitoring of user account privileges were in place. However, the ANAO noted weaknesses in the parameters of the financial management system. These issues were discussed in more detail in Chapter 2. In response to the ANAO's findings and suggestions, HIC advised the ANAO that it was planning to conduct a full review of IT security.

## **Recommendation No.4**

**5.20** The ANAO recommends that the HIC review its computer security profiles to ensure that the profiles match the requirements of the appropriate business function.

### *HIC response*

**5.21** Agreed. IT Services Division, through the Logical Security Adviser and the HIC's Data Access Control Officers (DACOs), has been reviewing logical security within HIC. This project is not complete.

## Identify and attribute costs

**5.22** Identifying costs is an essential process in ensuring management's awareness of costs directly attributable to IT services. The ANAO sought to determine whether HIC had a cost accounting system that ensures IT costs are recorded, calculated and allocated to the required level of detail.

**5.23** The ANAO found the process of recording costs for projects only applies where projects are considered 'major' and there is no maintenance or other costs included. Only ITSD costs are measured, business costs are not captured. For 'major' projects the ANAO found adequate budgeting and cost management practices were in place.

**5.24** The ANAO concluded that, due to costs being recorded only for 'major' projects, HIC could not identify and therefore justify the cost to deliver health payments and information services using existing IT systems and infrastructure. An inability to justify the costs of a service puts at risk the funding for maintenance and development of that service.

**5.25** At the time of the review, ITSD indicated that efforts were being made to measure costs more accurately for all changes (major and otherwise) to systems through a variety of tools and techniques and the establishment of a project office.

## Recommendation No.5

**5.26** The ANAO recommends that the HIC identify and record all costs for all IT projects.

### *HIC response*

**5.27** Agreed. Progress has been made since last year's audit, particularly in respect of strategic projects. Introduction of the new IT architecture and associated processes, planned to commence in May 2001, will allow capture of effort by all project staff in another area, ie. those projects commissioned to support the business architecture needs. This will leave a smaller proportion of the total system development and maintenance workload on which effort is not adequately recorded, and this area will be addressed during the year.

**5.28** There are two major issues to be addressed:

- capture of all effort expended on developing software applications and supporting them throughout their life; and
- conversion of this effort to a dollar cost equivalent, for financial management purposes.

## Manage problems and incidents

**5.29** Effective management of problems and incidents identifies the cause, ensures resolution, and prevents any manageable re-occurrence. The ANAO considered the HIC's problem management system against these criteria.

**5.30** Since the audit, HIC has outsourced its help desk facility to its service provider, IBM GSA. The ANAO reviewed the previous help desk facility and found it adequate for HIC's needs.

## Conclusion

**5.31** The ANAO concluded that the HIC had satisfied requirements for performance and capacity management and problem management. However, the ANAO made recommendations to improve HIC's contingency planning, system security and cost attribution.

# 6. Monitoring

This chapter reports the results of ANAO’s review of HIC’s monitoring of its IT.

**6.1** A key audit objective was to identify sound practice and any deficiencies in the IT controls of the systems and any effect on the Commission’s operations. A relevant CobiT domain was *monitoring of IT systems*. Monitoring included, as well as HIC’s monitoring of its IT processes, the Commission’s assessment of the adequacy of its internal controls, whether the Commission had obtained independent assurance of its systems and whether its systems were audited independently. Table 5 below summarises the CobiT objectives for this domain and the ANAO’s conclusions against those objectives.

**Table 5**  
**Control Objectives for Information and Related Technology**  
**Process and Control Objectives—Monitoring**

CobiT Process and Control Objectives		Information criteria <sup>1</sup>							Rating <sup>2</sup> Scope		Report Reference
		Effectiveness	Efficiency	Confidentiality	Integrity	Availability	Compliance	Reliability	Satisfactory/Recomm	Not in scope <sup>3</sup>	
Monitoring											
M1	Monitor the process	P	S	S	S	S	S	S	R		6.2
M2	Assess internal control adequacy	P	P	S	S	S	S	S	✓		6.7
M3	Obtain independent assurance	P	P	S	S	S	S	S	✓		6.12
M4	Provide for independent audit	P	P	S	S	S	S	S	✓		6.15
Monitoring overall									✓		

Notes to table:

- 1 P = a primary criteria addressed by the objective, S = secondary, a blank cell indicates the objective does not address the information criteria.
- 2 R indicates an ANAO recommendation.
- 3 Within time and cost constraints, the ANAO concentrated on controls critical to HIC’s business.

## Monitor the Process

**6.2** It is important for management to monitor IT processes in order to determine if those processes are achieving their objectives. IT monitoring requires management to define reporting and performance indicators, to implement supporting systems, and to act on reported results.

**6.3** HIC and its clients, both internal and external, require a common understanding of the level of service to be provided by the mainframe systems supporting the PBS and Medicare applications. Setting and publishing appropriate IT system performance indicators enable such an understanding. HIC has set external performance targets (non-IT) through its Charter of Care, published in July 1999 (specific Service Charters for health service providers and the general public) and January 2000 (general Service Charter). These documents outline specific performance targets HIC will meet in delivering its service.

**6.4** At the time of the review the ANAO only found one performance target set for the IT systems. This target was a mainframe response time, which was monitored by ITSD. The ANAO noted that HIC was only reviewing computer response times within the mainframe and not including the time taken to travel across networks to reach the user. HIC responded that the measurement of network response times is to be the responsibility of HIC's service provider, IBM GSA.

## Recommendation No.6

**6.5** The ANAO recommends that the HIC develop IT performance targets to ensure that IT aligns with and supports the targets set in its Charter of Care. The IT performance targets should be designed with reference to comparable better practice; measure key aspects of IT systems performance; and include reporting systems to IT and non-IT users.

### *HIC response*

**6.6** Agreed. The Services Agreement with IBM GSA identifies more than 500 Service Level Agreement (SLA) targets that relate to the delivery of IT infrastructure services and support. As yet no specific SLA has been tied to the Charter of Care. The HIC further advised that it will investigate the matter further with a view to developing the targets specifically addressing HIC's Charter of Care over the next three months.

## Assess Internal Control Adequacy

**6.7** Assessing internal control adequacy is concerned with ensuring the achievement of internal control objectives for IT systems and processes. This objective is enabled by management's commitment to monitoring internal controls, assessing their effectiveness, and reporting on them on a regular basis. The ANAO assessed HIC's performance in this area by considering whether the HIC:

- continuously monitored controls over its IT and business processes; and
- reported regularly to management on the effectiveness and efficiency of internal controls.

**6.8** HIC has an Audit Branch with responsibility to perform audits of all of HIC's operations and systems. The Branch reports to the HIC Audit Committee and the Managing Director. Audits are conducted according to plans approved by the Audit Committee.

**6.9** HIC informed the ANAO that internal audit has scheduled two IT audits to be completed before the end of this financial year, and that IT audits will be included in the Tactical Audit Plan for 2001–02, currently under development. However, the ANAO understands that, notwithstanding the two audits identified above, the Audit Branch has not conducted audits of HIC's IT recently. As IT is a significant part of the HIC's operations, the ANAO considers that IT audits should be a major inclusion in the Audit Branch program.

**6.10** The ANAO, as HIC's external auditor, provides annual reports to HIC management and to the Minister for Health on the internal control effectiveness of HIC's IT and related processes that support amounts in the financial reports. These control reviews cover many aspects of HIC's activities and are complementary to HIC's continuous monitoring of internal controls. The ANAO is invited to attend HIC's Audit Committee and to report on its findings for IT related and other issues.

**6.11** These aspects, combined with internal reporting and related controls at the IT operations level, led the ANAO to conclude that HIC's performance against the CobiT objectives relating to this area could be improved by Audit Branch pursuing a program of IT audits.

## Obtain independent assurance

**6.12** Independent assurance is an approach to providing for an increased level of confidence in the system being used by an organisation. It is enabled by independent assurance reviews carried out at regular intervals. The ANAO assessed whether HIC management had implemented an assurance process that, amongst other things, included its IT systems. The ANAO then assessed whether that assurance process considered:

- independent certification and accreditation;
- independent effectiveness evaluations;
- performance of assurance reviews by qualified personnel; and
- audit involvement.

**6.13** The ANAO found that HIC had obtained independent, expert certification for its gateway (between HIC's networks and public access) from the Defence Signals Directorate (DSD). This is a stringent program of accreditation acknowledged as a significant commitment to the secure storage and transmission of information on the HIC network.

**6.14** The HIC, commencing in 1994, obtained approval from the HIC Executive, to undertake work to achieve compliance to International Standards Organisation (ISO) certification. However, the HIC did not proceed with the formal certification process. Recent significant changes in business architecture and consequent changes to the IT architecture, together with infrastructure changes consequent to the outsourcing of its IT, will obviate much of the previous compliance work. The ANAO suggests that the HIC consider its position with respect to obtaining ISO certification, or whether alternative approaches should be pursued.

## Provide for independent audit

**6.15** The independence of audit reviews, both by the organisation's internal audit and by external audit, increases confidence levels and provides benefits from better practice advice. The ANAO considered, in relation to HIC's IT function:

- audit independence;
- performance of audits by qualified personnel; and
- clearance of findings and recommendations.

**6.16** As mentioned above, the HIC has an Audit Branch with wide ranging responsibilities that conducts audits of HIC's operations and reports to the Audit Committee and Managing Director.

**6.17** The ANAO annual audit of HIC's financial statements has a major IT audit component. In addition, the ANAO conducts a selected number of performance audits in HIC each year. These performance audits can include components that consider IT aspects of HIC's performance. ANAO audit reports are provided to the HIC Executive, the Minister for Health, and to HIC's Audit Committee.

## Conclusion

**6.18** The ANAO concluded that HIC's monitoring of its IT operations could be improved by the development of IT performance targets aligned with the HIC Charter of Care. Monitoring could also be improved by HIC's Audit Branch completing a program of IT audits. The ANAO also suggests that suggests that the HIC consider its position with respect to obtaining ISO certification, or whether alternative approaches should be pursued, when current changes to IT architecture and processes have been completed. The ANAO concluded that internal and external audit reviews were appropriately independent.

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Canberra ACT  
12 June 2001

P. J. Barrett  
Auditor-General



# **Appendices**



## **Appendix 1**

### **Description of the IT Systems Reviewed in this Audit**

#### **Medicare System**

Medicare was established in 1984 and is Australia's national health care funding system. The Medicare system pays approximately \$6.9 billion per year, representing approximately 72.3 per cent of HIC's administered expenditure.

The system operates from an IBM mainframe and is used throughout Australia in Medicare Centres to record all Medicare services.

#### **Pharmaceutical Benefits Scheme System**

The Pharmaceutical Benefits Scheme (PBS) was established in 1954. The scheme provides benefits to eligible Australians to help meet the cost of certain prescription medication. The PBS system, together with the Repatriation Pharmaceutical Benefits services, pays approximately \$3.5 billion per year.

The PBS system also operates from an IBM mainframe and is used at HIC's head office in Tuggeranong for payment processing.

#### **FINNET**

FINNET is HIC's general ledger and accounting system. FINNET is a modified version of SAP R/3. The system was upgraded from SAP R/2 to SAP R/3 during 1997–98.

The system operates from an IBM AIX platform.

#### **Aurion**

Aurion is HIC's human resources and payroll system. This system also operates from an IBM AIX platform.

## Appendix 2

# CobiT: Control Objectives for Information and Related Technology

### CobiT EXECUTIVE OVERVIEW

Critically important to the success and survival of an organisation is effective management of information and related Information Technology (IT). In this global information society, where information travels through cyberspace without the constraints of time, distance and speed, this criticality arises from the:

- increasing dependence on information and the systems that deliver this information;
- increasing vulnerabilities and a wide spectrum of threats, such as cyber threats and information warfare;
- scale and cost of the current and future investments in information and information systems; and
- potential for technologies to dramatically change organisations and business practices, create new opportunities, and reduce costs.

For many organisations, information and the technology that supports it represent the organisation's most valuable assets. Moreover, in today's very competitive and rapidly changing business environment, management has heightened expectations regarding IT delivery functions. Truly, information and information systems are pervasive throughout organisations, from the user's platform to local and wide area networks to client servers to mainframe computers. Thus, management requires increased quality, functionality and ease of use, decreased delivery time, and continuously improving service levels, while demanding that this be accomplished at lower costs. Many organisations recognise the potential benefits that technology can yield. Successful organisations, however, understand and manage the risks associated with implementing new technologies. Thus, management needs to have an appreciation for and a basic understanding of the risks and constraints of IT in order to provide effective direction and adequate controls. CobiT helps bridge the gaps between business risks, control needs and technical issues. It provides good practices across a domain and process framework and presents activities in a manageable and logical structure. CobiT's 'good practices' means consensus of the experts, they will help you optimise your information investment, but foremost they are what you will be judged upon when things do go wrong.

Organisations must satisfy the quality, fiduciary and security requirements for their information, as for all assets. Management must also optimise

the use of available resources including data, application systems, technology facilities and people. To discharge these responsibilities, as well as to achieve its objectives, management must establish an adequate system of internal control. Thus, an internal control system or framework must be in place to support the business processes and it must be clear how each individual control activity satisfies the information requirements and impacts the resources. Impact on IT resources is highlighted in the *CobiT Framework* together with the business requirements for effectiveness, efficiency, confidentiality, integrity, availability, compliance and reliability of information that need to be satisfied. Control which includes management's responsibility. Management, through its corporate governance, must ensure that due diligence is exercised by all individuals involved in the management, use, design, development, maintenance or operation of information systems. An IT Control Objective is a statement of the desired result or purpose to be achieved by implementing control procedures within a particular IT activity.

Business orientation is the main theme of CobiT. It is designed not only to be employed by users and auditors, but also, and more importantly, as a comprehensive checklist for business process owners. Increasingly, business practice involves the full empowerment of business process owners so they have total responsibility for all aspects of the business process. In particular, this includes providing adequate controls. The *CobiT Framework* provides a tool for the business process owner that facilitates the discharge of this responsibility. The *Framework* starts from a simple and pragmatic premise:

*In order to provide the information that the organisation needs to achieve its objectives, IT resources need to be managed by a set of naturally grouped processes.*

It continues with a set of 34 high-level Control Objectives, one for each of the IT processes, grouped into four domains: planning and observation; acquisition and implementation; delivery and support; and monitoring. This structure covers all aspects of information and the technology that supports it. By addressing these 34 high-level Control Objectives, the business process owner can ensure that an adequate control system is provided for the IT environment. In addition, corresponding to each of the 34 high-level Control Objectives is an audit, or assurance, guideline to enable the review of IT processes against CobiT's 302 recommended detailed control objectives to provide management assurance and/or advice for improvement. CobiT contains an *Implementation Tool Set* that provides lessons learned from those organisations that quickly and successfully applied CobiT in their work environments. It includes an Executive Summary for senior management awareness and understanding

of CobiT's key concepts and principles. The implementation guide has two useful tools, Management Awareness Diagnostic and IT Control Diagnostic, to assist in analysing an organisation's IT control environment.

The management of the organisation needs generally applicable and accepted IT governance and control practices to benchmark their existing and planned IT environment. CobiT is a tool that allows managers to communicate and bridge the gap with respect to control requirements, technical issues and business risks. CobiT enables the development of clear policy and good practice for IT control throughout organisations, world-wide. It is CobiT's goal to provide these control objectives, within the defined framework, and obtain endorsement from commercial, governmental and professional organisations, world-at-large.

Thus, CobiT is intended to be *the* breakthrough IT governance tool that helps in understanding and managing the risks associated with information and related IT.

Table 6 below lists the full range of CobiT process and control objectives and the information criteria that they address.

**Table 6**

**Overview of CobiT objectives and the criteria that they address.**

CobiT Process and Control Objectives	Information Criteria <sup>1</sup> (P=primary, S=secondary)						
	Effectiveness	Efficiency	Confidentiality	Integrity	Availability	Compliance	Reliability
<b>Planning and organisation</b>							
P01 Define a strategic I&T plan	P	S					
P02 Define the information architecture	P	S	S	S			
P03 Determine the technological direction	P	S					
P04 Define the I&T organisation and relationships	P	S					
P05 Manage the I&T investment	P	P					S
P06 Communicate management aims and direction	P					S	
P07 Manage human resources	P	P					
P08 Ensure compliance with external requirements	P					P	S
P09 Assess risks	S	S	P	P	P	S	S
P10 Manage projects	P	P					
P11 Manage quality	P	P		P			S

## CobiT Process and Control Objectives

Effectiveness	Efficiency	Confidentiality	Integrity	Availability	Compliance	Reliability
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### Acquisition and implementation

AI1	Identify solutions	P	S				
AI2	Acquire and maintain application software	P	P		S		S
AI3	Acquire and maintain technology architecture	P	P		S		
AI4	Develop and maintain I&T procedures	P	P		S		S
AI5	Install and accredit systems	P			S	S	S
AI6	Manage changes	P	P		P	P	S

### Delivery and support

DS1	Define service levels	P	P	S	S	S	S	S
DS2	Manage third party service	P	P	S	S	S	S	S
DS3	Manage performance and capacity	P	P			S		
DS4	Ensure continuous service	P	S			P		
DS5	Ensure systems security			P	P	S	S	S
DS6	Identify and attribute costs		P					P
DS7	Educate and train users	P	S					
DS8	Assist and advise I&T customers	P						
DS9	Manage the configuration	P				S		S
DS10	Manage problems and incidents	P	P			S		
DS11	Manage data				P			P
DS12	Manage facilities				P	P		
DS13	Manage operations	P	P		S	S		

### Monitoring

M1	Monitor the process	P	S	S	S	S	S	S
M2	Assess internal control adequacy	P	P	S	S	S	S	S
M3	Obtain independent assurance	P	P	S	S	S	S	S
M4	Provide for independent audit	P	P	S	S	S	S	S

Note to table

1 A blank cell indicates the objective does not address the information criteria.

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