

The Auditor-General
Audit Report No.13 2008–09
Performance Audit

Government Agencies' Management of their Websites

Australian Bureau of Statistics
Department of Agriculture, Fisheries and Forestry
Department of Foreign Affairs and Trade

Australian National Audit Office

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Canberra ACT
16 December 2008

Dear Mr President
Dear Mr Speaker

The Australian National Audit Office has undertaken a performance audit in the *Australian Bureau of Statistics, Department of Agriculture, Fisheries and Forestry and the Department of Foreign Affairs and Trade* in accordance with the authority contained in the *Auditor-General Act 1997*. Pursuant to Senate Standing Order 166 relating to the presentation of documents when the Senate is not sitting, I present the report of this audit and the accompanying brochure. The report is titled *Government Agencies' Management of their Websites*.

Following its presentation and receipt, 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 and title.

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. 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 Government and the community. The aim is to improve Commonwealth public sector administration and accountability.

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Contents

Abbreviations and Glossary	6
Summary and Recommendations	9
Summary	11
Background	11
Audit approach	13
Overall audit conclusion	14
Key findings	16
Summary of agencies' responses	19
Recommendations	20
Audit Findings and Conclusions	21
1. Background and Context	23
Background	23
Context	28
Audit objective, rationale, and method	30
2. Website Management Framework	38
Introduction	38
Website purpose	38
Website risk management	41
Website management policy	47
Website content management procedures	49
3. Website Performance Information	58
Introduction	58
Monitoring website user activity and performance	59
Agency reporting on website performance	70
Appendices	75
Appendix 1: Agencies' responses	77
Appendix 2: Government information and communications technology policy	80
Appendix 3: ANAO's reports and publications on Internet use	81
Appendix 4: Agencies surveyed	82
Appendix 5: Chapter 2 survey results	83
Appendix 6: Features of sound content management	85
Index	86
Series Titles	87
Current Better Practice Guides	89

Abbreviations and Glossary

ABS	Australian Bureau of Statistics
AGIMO	Australian Government Information Management Office, a division of the Department of Finance and Deregulation.
ANAO	Australian National Audit Office
Australian Government Online Service Point	The Australian Government's principal online service point providing people with simple and convenient access to government information, messages and services.
CAC Act	<i>Commonwealth Authorities and Corporations Act 1997</i>
Channel	A mechanism used by both government and customers to interact. Examples include shops, media campaigns, call centres, and websites.
CIO	Chief Information Officer
DAFF	Department of Agriculture, Fisheries and Forestry
DFAT	Department of Foreign Affairs and Trade
Domain	A collection of network devices that are organised under a common network name. .au is the top level domain for Australia. Any site that ends with an .au is a site built specifically for website users with Internet Service Providers located in Australia. Within the .au domain there are a number of second level domains with specific purposes. Examples of these are .gov.au, .com.au and .org.au. A domain commonly includes a number of websites.
FMA Act	<i>Financial Management and Accountability Act 1997</i>
Home page	The main page of a website.
ICT	Information and Communication Technology

Main website	An Australian Government's agency's home site.
Server	A computer or a device that stores electronic data such as web pages.
User	Refers to any individual able to access agency websites.
Web content	Refers to text, graphics and photos, video or audio, and application code that interacts with the visitor to the website.
Web page	A web page is a document on the World Wide Web that is defined by a unique address.
Website	A set of interconnected web-pages, usually including a homepage, generally located on the same server, and prepared and maintained as a collection of information by a person, group, or organisation.
WWW	World Wide Web

Summary and Recommendations

Summary

Background

1. In 1997, the Australian Government 'committed to all appropriate services being deliverable on the Internet by 2001'.¹ Since then, government agencies have increased their use of websites, accessible via the Internet, to the point that, at the beginning of 2008, the Australian Government had more than 800 websites.²
2. Government agencies deliver a wide range of programs and services to the community through various means, such as agencies' shopfronts, call centres, educational material, and via the Internet.
3. The most common role of agencies' websites is to provide information about services to the public. However, recent technological improvements have allowed agencies to deliver through their websites a wider range of services. Examples include how the public can now access a wide range of statistics, lodge tax returns and apply for Medicare cards online. In addition, the Australian Government Online Service Point <www.australia.gov.au> assists the public by providing links to information and services on its websites as well as on selected state and territory resources. By accessing <www.australia.gov.au> users can search over three million government web pages. In addition the proportion of people who accessed a Government website for their most recent contact with government has grown significantly in recent times, from 19 per cent in 2004–05 to 29 per cent 2007.³
4. This increased reliance by agencies on websites to provide information and services, brings with it a greater need for agencies to have sound approaches to manage their sites. Poorly managed websites not only increase the risk that information and services are not provided to website users at reasonable cost to government, but can have adverse impacts on other service channels such as extra work loads for call centres and inquiry outlets.

¹ *Investing for Growth – The Howard Government's Plan for Australian Industry*, 1997. Available at <http://pandora.nla.gov.au/pan/32884/20080307-0000/backingaus.innovation.gov.au/docs/statement/invest_growth.pdf>. Last accessed 4 December 2008.

² AGIMO advice.

³ *Australians' Use of and Satisfaction with e-Government Services — 2007*, December 2007. Available at <http://www.finance.gov.au/publications/use-of-e-government-services-2007/docs/31576_AGIMO_Satisfaction-ALL.pdf>. Last accessed 4 December 2008.

5. An agency's website management approach should take into account the function of each site in service delivery and/ or the number of sites it manages. In general, agencies with large or multiple websites or websites with significant numbers of transactions, especially financial transactions, would be expected to have a more rigorous management regime in place than those agencies with single and small sites.

e-Government strategy

6. The Department of Finance and Deregulation, through its Australian Government Information Management Office (AGIMO), has overall coordination responsibility for the use of Information and Communications Technology (ICT) within government. AGIMO provides the Government and agencies with information and guidance on the procurement, infrastructure, management and use of ICT, including on agencies' use of websites.

7. The Government's ICT policy, *Responsive Government A New Service Agenda 2006 e-Government Strategy*⁴, has four ICT strategic priorities: meeting users' needs, establishing connected service delivery, achieving value for money, and enhancing public sector capability. One important policy objective of the policy is to improve government service delivery via websites. Therefore, addressing these four priorities in managing government websites is critical to the success of the Government's ICT policy.

8. In April 2008, the Government commenced a review of agencies' use and management of ICT. The review examined and reported on the 'efficiency and effectiveness of the Australian Government's current use and management of ICT to determine whether the Government was realising the greatest return from its ICT investments'.⁵ The review was also designed to consider ways in which ICT can be used to meet the Government's broader objectives and the means by which the financial returns to Government might be increased. This included the use of websites to deliver information and services. A report was prepared for the Minister for Finance and Deregulation in September 2008.

⁴ *Responsive Government A New Service Agenda 2006 e-Government Strategy*, AGIMO, March 2006. Available at <<http://www.finance.gov.au/publications/2006-e-government-strategy/index.html>>. Last accessed 4 December 2008.

⁵ *Review of the Australian Government's use of ICT*, 11 April 2008. Available at <http://www.financeminister.gov.au/media/2008/mr_112008.html>. Last accessed 4 December 2008.

Audit approach

Audit objective

9. The audit objective was to assess how well agencies manage their websites. Particular attention was given to the audited agencies' website purposes, risk management and planning, policies, content management procedures, and performance monitoring and reporting. These elements provide the framework for the design, implementation and operation of websites.

10. There are a range of other elements associated with website management, including specifications development and testing through to system management, technical support and security checks. These other elements were not examined in this audit.

Audit coverage and methodology

11. The audit approach was divided into two parts. The first part of the audit involved the ANAO surveying 40 agencies to obtain a broad appreciation of agencies' website management practices. All agencies provided a response to the survey.

12. The second part involved an examination of the management of five websites in three agencies. The sites were the Australian Bureau of Statistics website, the Department of Agriculture, Fisheries and Forestry website and its e-Permits website, and the Department of Foreign Affairs and Trade website and its Passports website.

13. To guide the assessments of agencies' website management documentation, the ANAO developed a 'decision tree' that categorises websites based on their function and associated risk level. The ANAO identified that agencies with critical or large sites have higher service delivery risks. In these circumstances, an agency's website management should be underpinned and informed by its broader risk management framework. In particular, management should be supported by specific consideration of website risks, planning, policies, procedures, and performance monitoring and reporting. In comparison, websites that are not critical or large would have lower risks, and therefore it would be sufficient that their website governance be incorporated within agency-wide ICT management documentation.

14. The ANAO assessed the level of the five websites' management documentation, having regard to its adequacy, scope, currency, and alignment.

15. Deciding on where a website fits within the assessment model is a decision for each agency to make. However, for the purposes of this audit, the ANAO classified one of the five audited websites as being of significant risk to agency service delivery, with the other four sites classified as moderate risk to agency service delivery. The three agencies managing the five audited websites had multiple websites.

Overall audit conclusion

16. Over the past decade Australian Government agencies' use of websites to provide information and services has grown significantly, to the point that, at the beginning of 2008, the Australian Government had more than 800 websites accessible via the Internet. Websites are now an integral part of program delivery for many agencies in contributing to program outcomes.

17. Effective website risk management, content management and monitoring provide a sound basis for the design, implementation and operation of websites, helping to ensure that appropriate and current information and services are delivered at planned levels. Sound website management will be underpinned by a clearly stated purpose developed in association with an agency's business goals and risk management. Such an approach allows the significance of a website to service delivery to be taken into account by agencies in making decisions on website management.

18. Overall, the ANAO concluded that, for the five websites examined in the three audited agencies, management processes and practices provided an adequate level of support for the delivery of information and services via those websites. However, given the increasing emphasis on the use of websites for service delivery, the audit identified scope to improve the three agencies' website management.

19. While the audited websites each had a purpose, for most it was not clearly stated and there was little documentation showing how the purpose guided decisions on website use. This made it difficult for the owner agencies to monitor the contribution and impact of each website to the relevant program and agency outcomes.

20. The survey data identified considerable diversity in the number, size, and type of websites and supported the importance of website management being tailored, taking into consideration risks. For example, one large agency had 96 websites, and the surveyed agencies' websites varied in size from 35 to 900 000 pages. Agencies with multiple or large websites faced increased risks

associated with opening and closing websites, and managing growth in website content. The level of supporting website risk management documentation could be improved given each website's risk profile, and that each of the agencies had multiple sites.

21. A majority of the website risk management documentation for the audited agencies was covered in ICT security documentation, but varied in both the scope and type of the risks covered. In addition, two of the audited websites had not reviewed their website risks for up to three years. In this time, one of these sites had changed from an information-only site to a transactional site, while another site's purpose also had changed. Periodic review and treatment of risks, specifically where the website has undergone significant change, reduces the likelihood or consequence of new or emerging weaknesses or threats to the achievement of program outcomes. This is particularly important for websites that are integral to service delivery given the key role of websites with customers and other stakeholders.

22. The audit also identified that government websites are growing in size, which by its nature influences the risks of websites containing inaccurate, superfluous and or outdated information. Four of the five websites examined had adequate processes to record changes to website content, archive these changes, and to record approvals. However, one of the websites, important to the provision of information to the public, had no documentation to specify content management processes. This increased the risk of the agency publishing misleading information.

23. Also, agencies with large or high risk websites can benefit by introducing automated content management systems. These systems provide assurance that website content will not be published without approval, and they store website content changes, and retain copies of documents prior to changes being made.

24. All of the audited agencies monitored website user activity and satisfaction. However, none of the audited agencies reported specifically on how their websites were meeting their respective purposes and how they were contributing to agency business goals. Also, most agencies had little information on the costs of operating and maintaining their websites. Agencies with websites that pose significant risks to service delivery or that have multiple websites would benefit from an improved understanding of their website user activity, performance, and cost information.

25. The ANAO has made four recommendations aimed at improving the management of websites which are integral to agencies' service delivery. In particular: the development of a clearly stated purpose for each website; strengthening agencies' decision making through improved risk management; reviewing content management processes and practices; and strengthening performance monitoring and reporting.

Key findings

Website Management Framework (Chapter two)

26. Four of the websites examined did not have a clearly stated purpose, and there was little documentation showing if the purpose for each of those websites had been met, and how the purpose aligned with each agency's business strategy. Clearly stating a website purpose assists each agency to manage its website risks, monitor, evaluate and report on website performance, and/ or its contribution to the program's outcomes.

27. The audited agencies would benefit from improving their website risk management and policies. For example:

- two of the sites categorised as being of moderate risk to service delivery had not reviewed their website risk documents for up to three years. In this time, one of these sites had changed from an information-only site to a transactional site, while the other site's purpose also had changed;
- four of the sites, three assessed by the ANAO as of moderate risk and one of significant risk to service delivery, had a variety of website management policy documents that were managed by different areas within the agency. This complicated website management; and
- three agencies did not have policy on opening and closing websites. Agencies with criteria for opening and closing websites are more likely to reduce the likelihood of an agency duplicating some of its services through multiple sites, and are more likely to control their website costs.

28. The three audited agencies had multiple websites, with only one having a website plan to manage its websites and a list of its websites. They had five, 52 and six sites respectively. The survey responses showed that — of the 40 agencies — 26 had multiple websites, of which 20 had not planned the future of their websites over the next three to five years. The extent of some agencies' reliance on websites is evident, for instance, in how one large agency

with multiple programs had 96 sites. The nature of an agency's website planning depends upon the number of sites, their complexity, changing technology, and costs. The findings from the three agencies and the survey responses showed a majority of agencies did not plan the future of their websites over the short to medium term.

29. The 40 surveyed agencies had 504 websites of which 99 agency sites had a domain name⁶ other than .gov.au, with sites varying in size from 35 to 900 000 web-pages. This shows that agencies are increasingly using websites to provide information and services, with some agencies relying more heavily than others on this channel to provide information and services. It also shows that the Government's website presence includes domain names other than .gov.au. There is very little information available about non .gov.au sites: for example, on whether non .gov.au sites are increasing and why they exist outside the .gov.au domain.

30. Four of the five websites had adequate documentation to support their content management, and had processes and procedures to approve changes to website information and to archive the latter. The fifth site, which was large and important to service delivery, changed its content while not having documented processes to approve those changes. This agency advised that it was reviewing its website management and investigating whether specialist software can improve its website content management.

31. The two agencies using well developed specialist software had an increased capacity to manage changes to web content and the approvals for that content. Agencies with large and/ or multiple websites that do not use specialist software to manage content are encouraged to examine the benefits and costs of introducing specialist software for that purpose.

Website Performance Information (Chapter three)

32. The three audited agencies monitored and prepared reports for management on website user activity and performance. However, the three agencies mainly used raw user activity data in their reports to their management, with little explanation as to what the data meant. This type of reporting provided minimal benefits. For example, one agency recorded

⁶ A domain name is an address used to clarify and locate computers and web pages on the Internet, and ends with, for example, .au. Any site that ends with an .au is a site built specifically for Internet users with Internet Service Providers located in Australia. Within the .au domain there are a number of second level domains with specific purposes. Examples of these are .gov.au, .com.au and .org.au. AGIMO is the delegated authority to assess individual domain name applications for the Commonwealth.

weekly the number of website hits, and provided this raw information to management. The data showed a steady increase in the number of hits on its website. This information was not accompanied by an explanation or analysis. Improved analysis and reporting of website performance is most useful when it informs management of how, over time, the website is meeting its purpose and contributing to program and agency outcomes. The information is also useful when it identifies operational and management areas for improvement.

33. Websites are now an integral component of program delivery for most agencies, particularly for agencies with significant or multiple websites. Therefore, it is advisable that agency executives understand how their websites are performing, and how they contribute to program and agency outcomes. The audit identified that several of the surveyed agencies that had significant or multiple websites did not report website performance to their Chief Information Office (CIO) or Executive. Performance reports for key agency staff, such as, the CIO, Executive and website owner, would benefit agencies by identifying roles and responsibilities, providing advice on user activity and identifying issues that required action to improve services.

34. It would be beneficial for the three agencies to further develop and document their website monitoring and evaluation methods, including the development of performance targets.

35. The survey results highlighted that only six of the 40 agencies maintained firm website cost data. Based on estimates provided, website costs across the 40 agencies ranged from \$10 000 for a small information-only website, to \$15 million per annum for an agency with one large site with significant transactions. The ANAO noted there are other costs involved in using websites, such as in the development and administration of content. This limited information on the total cost of websites pointed to how only a small number of agencies monitored their website costs, and compared them with the costs of other service delivery channels.

36. The amount spent by the Australian Government in managing its websites is significant. Survey cost data for 35 of the 40 agencies shows total expenditure on websites was \$51.5 million in 2005–06 and \$55 million in 2006–07. This represented an increase of approximately six per cent. In addition, the survey showed that website costs averaged about seven per cent of total ICT expenditure.

Summary of agencies' responses

37. Each of the audited agencies, together with AGIMO, agreed with the four recommendations. Where provided, agencies' additional responses to the recommendation are included in the body of the report, and agencies' general comments are included in Appendix 1.

Recommendations

The following recommendations are based on findings from fieldwork at the audited agencies and survey results, and are likely to be relevant to all APS agencies. Therefore, all APS agencies should assess the benefits of implementing the recommendations in light of their own circumstances, including the extent that each recommendation, or part thereof, is addressed by practices already in place.

Recommendation No.1
Para 2.15 The ANAO recommends that agencies develop a clearly stated purpose for each of their websites that aligns with the agency's business goals, and periodically review whether they have achieved the purpose.

Recommendation No.2
Para 2.29 The ANAO recommends that agencies with websites that are integral to service delivery, consider the risks to these websites in the preparation of organisational risk management plans.

Recommendation No.3
Para 2.86 To assist agencies manage the content on their websites, the ANAO recommends agencies:

- (a) periodically review, remove and archive website content that is inaccurate, superfluous or outdated;
- (b) document roles and responsibilities; and
- (c) develop and implement arrangements to approve and record changes, and subsequently archive them.

Recommendation No.4
Para 3.54 To assist agencies manage the costs of multiple or large websites that are integral to an agency's service delivery, the ANAO recommends agencies periodically monitor and report on website costs, and, in the context of program performance compare website costs against other service delivery channels.

Audit Findings and Conclusions

1. Background and Context

Background

1.1 In 1997, the Australian Government 'committed to all appropriate services being deliverable on the Internet by 2001'.⁷ Since then, government agencies have increased their use of websites, accessible via the Internet to the point that, at the beginning of 2008, the Australian Government had more than 800 websites.⁸

1.2 Government agencies deliver a wide range of programs and services to the community through various means, such as agencies' shopfronts, call centres, educational material, and via the Internet.

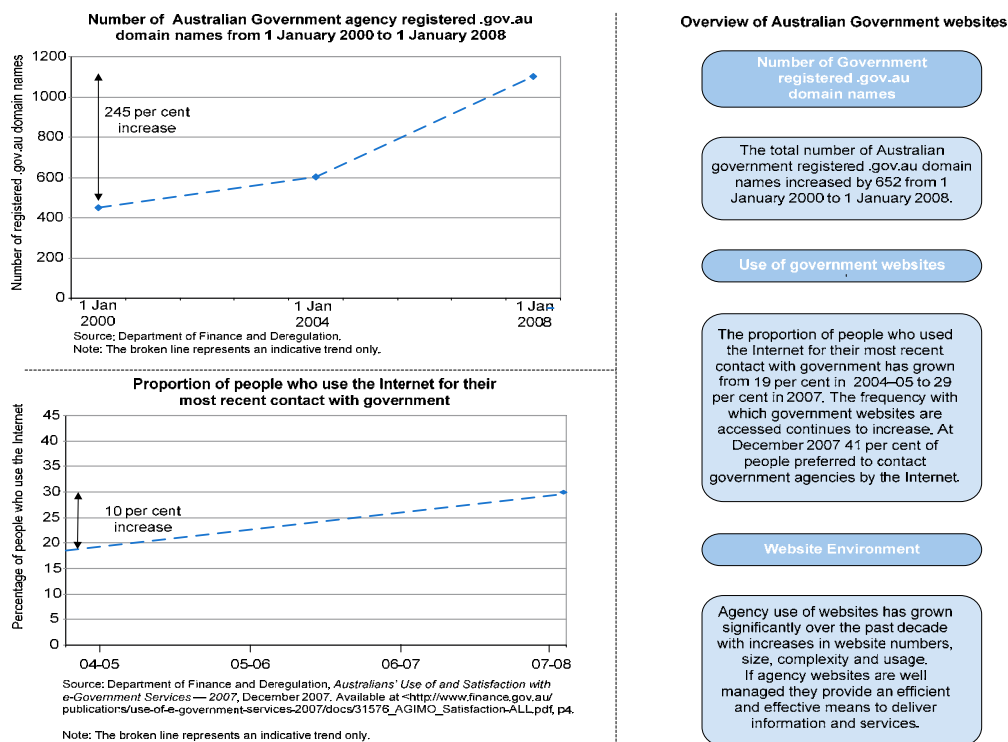
1.3 The most common role of agencies' websites is to provide information about services to the public. However, recent technological improvements have allowed agencies to deliver through their websites a wider range of services. Examples include how the public can now access a wide range of statistics, lodge tax returns and apply for Medicare cards online. In addition, the Australian Government Online Service Point <www.australia.gov.au> assists the public by providing links to information and services on its websites as well as on selected state and territory resources. By accessing <www.australia.gov.au> users can search over three million government web pages.

1.4 Agencies are using websites increasingly for their work because of its speed and widening acceptability. A more complete snapshot of the growing importance of websites in delivery of government information and services is shown in Figure 1.1.

⁷ *Investing for Growth – The Howard Government's Plan for Australian Industry*, 1997. Available at <http://pandora.nla.gov.au/pan/32884/20080307-0000/backingaus.innovation.gov.au/docs/statement/invest_growth.pdf>. Last accessed 4 December 2008.

⁸ AGIMO advice.

Figure 1.1
Snapshot of Australian Government Internet use⁹



Source: ANAO analysis of AGIMO information.

1.5 An agency's website management approach should take into account the significance of its sites to service delivery and/ or the number of sites it manages. In general, agencies with large or multiple websites or websites with significant numbers of transactions, especially financial transactions, would be expected to have a more rigorous management regime in place than those agencies with single and small sites.

1.6 With the increased investment and user reliance on government websites to obtain information and services, it is important for agencies to develop and implement sound approaches to manage their websites. Poorly managed websites not only increase the risk that information and services are

⁹ A domain name is an address used to clarify and locate computers and web pages on the Internet, and ends with, for example, .au. Any site that ends with an .au is a site built specifically for Internet users with Internet Service Providers located in Australia. Within the .au domain there are a number of second level domains with specific purposes. Examples of these are .gov.au, .com.au and .org.au. Domain names other than .gov.au were not included in the estimate of 1100 registered .gov.au. domain names, and some of the .gov.au domain names are redirects, mail servers and some are not operational, (AGIMO, April 2008). AGIMO is the delegated authority to assess individual domain name applications for the Commonwealth.

not provided to website users at reasonable cost to government, but also by their nature can have adverse impacts on other service channels such as extra work loads for call centres and inquiry outlets.

The benefits of delivering government information and services using websites

1.7 Agency websites, if managed properly, can be an effective, efficient and economical way of providing information and services to users. Well managed websites benefit both users¹⁰ and agencies by:

- **Delivering services that are responsive to user needs.** Improvements in Information and Communication Technology (ICT), including websites, allow agencies to provide services that better meet the requirements of individual users. For example, registrations allow users to 'personalise' their contact with agencies. In turn, this allows users to receive or request information on their entitlements and responsibilities, and other information of relevance to them.
- **Integrating related services.** Agencies can work cooperatively using websites to deliver services to users. Agencies are now able to use websites to 'bundle' their services and reduce the need for users to repeat the same, or similar, processes with different agencies. For example, the Department of Human Services allows citizens to use their accounts with either Centrelink, the Child Support Agency or Medicare Australia, to access the services of the other two agencies. This is done through a form of account linking.
- **Delivering information and services to users economically.** Well managed websites allow agencies to deliver information and services to users, at reduced cost. That is, agencies are able to supplement potentially more expensive service delivery methods, such as telephony and direct user contact, with potentially less expensive websites.
- **Ensuring convenient access to government services and information.** The availability of website information at any time makes accessing government services more convenient for users. This is particularly useful for rural communities; persons with certain disabilities; and persons who are not able to access government offices during business hours.

¹⁰ For the purposes of this Report, 'users' refers to any individual able to access agency websites.

- **Building user trust and confidence.** As website technology has improved, agencies are now able to provide an increased level of assurance to users that the information they provide and receive through their websites is secure, accurate and timely.
- **Enhancing user contact.** Some websites provide users with a convenient facility to interact with the government agency. This facility may improve agencies' information and services, as users are able to provide direct and immediate commentary on a range of issues including government policy and agencies' administrative practices.

1.8 If websites are not managed well, there is an increased risk that the benefits described above will not be realised.

The range of government services provided via websites

1.9 The range of services provided via Australian Government websites has changed significantly over the last decade. In 1997 the majority of government websites were predominantly for users to access information, and they did not have capabilities that allowed users to communicate with or send information to agencies.

1.10 Since that time, developments in technology have allowed agencies to deliver a wider range of government services online. The following are some examples of the types of services government agencies provide now to the public using websites:

- **Providing information on the Pharmaceutical Benefits Scheme (PBS)** (informational). The Department of Health and Ageing provides a monthly online version of the PBS schedule to deliver faster listings of PBS medicines and to provide reliable, timely and affordable access to a wide range of medicines, <<http://www.pbs.gov.au>>.
- **Lodging tax returns** (informational/ transactional). The Australian Tax Office website enables users to load software onto their computers, which allows them to complete and lodge their tax returns electronically, <<http://www.ato.gov.au/individuals/>>.
- **Transferring payments** (transactional). The Child Support Agency's CSAonline website allows parents and employers to view information and make transactions, <www.csa.gov.au/>.
- **Government statistics** (informational/ transactional). The Australian Bureau of Statistics (ABS) provides statistical information on the

economy, environment and energy, industry, people, and regions, <www.abs.gov.au>.

- **Australian Government Online Service Point** (informational). Is the Australian Government's principal online service point providing people with simple and convenient access to government information, messages and services. It links to information and services on around 800 Australian Government websites as well as on selected state and territory websites and can search over three million government web pages, <www.australia.gov.au>.

1.11 With the introduction of new website technology and services, the management of websites has become increasingly complex. Agencies that review and adapt their website management processes and practices to take account of these changes will be better placed to use their websites more efficiently and effectively.

The amount of information provided on agency websites

1.12 Although the Government collects some aggregated statistics on the amount of information its agencies make available to users, the amount of information provided to users through government websites is large and is increasing.¹¹

1.13 To obtain a broader appreciation of agencies' website management practices the ANAO surveyed 40 agencies as part of the audit. The results of that survey show that some agencies provide large amounts of information to users through their websites, as shown in Table 1.1.

¹¹ As shown in Figure 1.1, the number of Australian Government registered .gov.au domain names increased by 245 per cent from 1 January 2000 to 1 January 2008. Also, the number and range of services delivered by agencies has increased during this period. On this basis, the amount of information provided on Australian Government websites has also increased.

Table 1.1**Number of websites and web–pages for four agencies, December 2007**

Agency	Number of websites	Estimated number of web-pages on the agency's main website
Australian Bureau of Statistics	5	900 000
Department of Families, Housing, Community Services and Indigenous Affairs	21	35 000
Department of Foreign Affairs and Trade	6	30 000
Department of Veterans' Affairs	13	16 500

Source: ANAO survey of 40 agencies.

1.14 The ABS's main website has grown considerably over the last two years, from 365 000 web-pages in June 2006 to an estimated 900 000 web-pages in December 2007. This represents an increase of approximately 250 per cent.

1.15 The large and growing amounts of information contained on some sites need to be managed well on a day-to-day basis, reviewed regularly, and consolidated to ensure that it is up-to-date and timely. Superfluous and outdated information on government websites can confuse, frustrate, and mislead users, potentially undermining program delivery. Poorly managed websites can not only increase the risk that information and services are not provided to website users at reasonable cost to government, but also by their nature can have adverse impacts on other service delivery channels, such as additional extra work loads for call centres and inquiry outlets.

Context

Definition of a website

1.16 For the purposes of this audit, a website is defined as a set of interconnected web-pages¹², usually including a homepage¹³, generally located on the same server¹⁴, and prepared and maintained as a collection of information by a person, group, or organisation.

¹² A web page is a document on the World Wide Web that is defined by a unique address.

¹³ A homepage is the main page of a website.

¹⁴ A server is a computer or a device that stores electronic data such as web pages.

The importance of websites in the delivery of policy objectives

1.17 The Department of Finance and Deregulation, through the Australian Government Information Management Office (AGIMO), has overall coordination responsibility for the use of ICT within government. AGIMO provides the Government and agencies with information and guidance on the procurement, infrastructure, management and use of ICT, including use of websites.

1.18 Since 1997, AGIMO (and its predecessor agency)¹⁵ has assisted the Government with the development of ICT policy for agencies. Policy documentation relevant to the management of agency websites is listed in Appendix 2.

1.19 The Government's most recent ICT policy document *Responsive Government A New Service Agenda 2006 e-Government Strategy*¹⁶, has four ICT strategic priorities:

- **Meeting users' needs.** To improve people's satisfaction in communicating with government and accessing government services: for example, through improved security and privacy and better measurement of user needs and preferences.
- **Establishing connected service delivery.** To use the opportunities presented by technology to drive reform of business processes, and to plan and implement connected government: for example, reforming poorly designed and redundant business processes, and reducing duplication by combining similar processes across agencies.
- **Achieving value for money.** To improve ICT investments to gain better value for money: for example, greater use of online, electronic and voice-based service delivery to reduce costs.
- **Enhancing public sector capability.** To review ICT service capability and skill levels, develop procurement plans at the agency and whole of government levels, and identify, review and remove barriers to 'connected government'.

¹⁵ AGIMO's predecessor was the National Office of the Information Economy.

¹⁶ *Responsive Government A New Service Agenda 2006 e-Government Strategy*, AGIMO, March 2006. Available at <<http://www.finance.gov.au/publications/2006-e-government-strategy/index.html>>. Last accessed 4 December 2008.

1.20 Although websites are only one means of service delivery, their use and management is critical to the success of the Government's ICT policy. In particular, well designed and managed websites have the potential to allow agencies to deliver information and services to users collaboratively.

1.21 Of relevance is that the Government has conducted an independent review of the Australian Government's use of ICT. In April 2008, the Minister for Finance and Deregulation asked Sir Peter Gershon to conduct an independent review of the Government's use and management of ICT.¹⁷ The review was established to:

'..... examine and report on the effectiveness and efficiency of the Australian Government's current use of information and communications technology (ICT) to determine whether the Government is realising the greatest return from its investment in ICT, including ways in which ICT can be used to meet the Government's broader objectives, as well as a narrower financial return. The review will determine whether we have the right institutional arrangements in place to maximise the return, and the means by which the return might be increased.'

1.22 The review also examined agencies use of the websites to deliver information and services. A report was prepared for the Minister for Finance and Deregulation in September 2008.

Audit objective, rationale, and method

Audit objective

1.23 The audit objective was to assess how well agencies managed their websites. Particular attention was given to the audited agencies' website purposes, risk management and planning, policies, content management procedures, and performance monitoring and reporting.

Rationale for examining agency website management

1.24 Websites play an important role in delivering government information and services. Agencies that manage and assess the performance of their websites to determine how well their websites are working are better placed to assess the impact websites have on contributing to the achievement of program and agency outcomes.

¹⁷ *Review of the Australian Government's use of ICT*, 11 April 2008. Available at <http://www.financeminister.gov.au/media/2008/mr_112008.html>. Last Accessed 4 December 2008.

1.25 All websites need to be supported by a clearly stated purpose developed in association with the agency's business goals. Key elements of an effective website management approach — for agencies with websites that are significant to service delivery or that have multiple websites — include ensuring consideration of those websites in the agency's organisational risk management framework. Further, this addresses:

- specific consideration of website risks;
- planning;
- policies and procedures including for managing content; and
- mechanisms to monitor and report on website performance in the context of program outcomes.

1.26 These elements provide a sound basis for the design, implementation and operation of websites. There are a range of other elements associated with website management, including specifications development and testing through to system management, technical support and security checks. Those elements were not examined in this audit.

Recent government reports on website management

1.27 Reviews conducted by the Government of Western Australia¹⁸ and the United Kingdom's National Audit Office¹⁹ identified the following weaknesses in website management:

- a number of agencies had no website strategy, and little information on website user activity data and costs. This indicated that these agencies were unlikely to be maximising the value of their websites;
- the content on websites could be managed more effectively. Sub-optimal content management practices increased the risk that agencies published incorrect information on their websites; and
- website governance and management practices were inconsistent and fragmented. Specifically, there was a lack of ownership and

¹⁸ *Review of Western Australian Government Websites for the Western Australian Public Service*, December 2005. Available at <http://www.egov.dpc.wa.gov.au/documents/WebsiteReviewReportfinal.pdf>. Last accessed 4 December 2008.

¹⁹ *Government on the internet: progress in delivering information and services online*, July 2007. Available at http://www.nao.org.uk/publications/nao_reports/06-07/0607529.pdf. Last accessed 4 December 2008.

accountability at senior management level, suggesting limited awareness of the utility of websites.

1.28 Also, the United Kingdom's House of Commons Committee of Public Accounts report²⁰, in March 2008 advised that:

After 10 years of uncoordinated growth, the Government does not know exactly how many websites it operates... Over a quarter of Government organisations still do not know the costs of their websites, making it impossible to assess whether they are value for money. 16% of government organisations have no data about how their websites are being used, inhibiting website improvements.

1.29 The ANAO's audits and other publications about Internet related activity are listed in Appendix 3.

Audit methodology

1.30 The audit approach was divided into two parts. The first part of the audit involved the ANAO surveying 40 agencies to obtain a broader appreciation of agencies' website management practices. All agencies provided a response to the survey. A list of the 40 agencies that responded to the questionnaire is in Appendix 4.

1.31 The second part of the audit involved an examination of the management of five websites in three agencies. The five sites are described in Table 1.2.

²⁰ *Government on the internet: Progress in delivering information and services online*, Sixteenth Report of Session 2007–08, 31 March 2008. Available at <www.publications.parliament.uk/pa/cm/cmpublicacc.htm>. Last accessed 8 December 2008.

Table 1.2

Agency websites selected for review

Agency	Website name and address	Website description
Australian Bureau of Statistics	ABS < www.abs.gov.au >	A site important to the provision of information and services to the public. An informational and transactional website ²¹ that provides statistical information on the economy, environment and energy, industry, and people. Data is available in different formats online. Classified as the principal channel for data communication to the public.
Department of Agriculture, Fisheries and Forestry	DAFF < www.daff.gov.au >	A site important to the provision of information to the public. An informational website that contains details of policies and programs to assist agricultural, fisheries, food and forestry industries to remain competitive, profitable and sustainable.
	e-Permits < https://www.agis.gov.au/epermits/ >	A small transactional website, that DAFF considers is not critical to service delivery. Allows users to apply electronically for an Import Permit, and pay for the permit over the site.
Department of Foreign Affairs and Trade	DFAT < www.dfat.gov.au >	A site important to the provision of information to the public. The site contains departmental objectives, media releases, annual reports, government policy, and links to other agency websites that are of interest to the public such as Smart Traveller and Passports. Classified as business–critical to operations.
	Passports < www.passports.gov.au >	A site important to program delivery. An informational and transactional website that allows users to electronically complete and print an application form for lodgement at an enrolment centre, and pay for a passport over the site. A website that supports its long-term business operations. DFAT is considering improvements to facilitate electronic enrolment and/ or capture of applicant details.

²¹ A transactional website allows users to interact with the agency's public databases and authenticate their identities when exchanging confidential information with the agency (e.g. for the payment of benefits, registration and submission of tax returns).

1.32 The ANAO assessed agency documentation applicable to each of these websites, and interviewed agency officers.

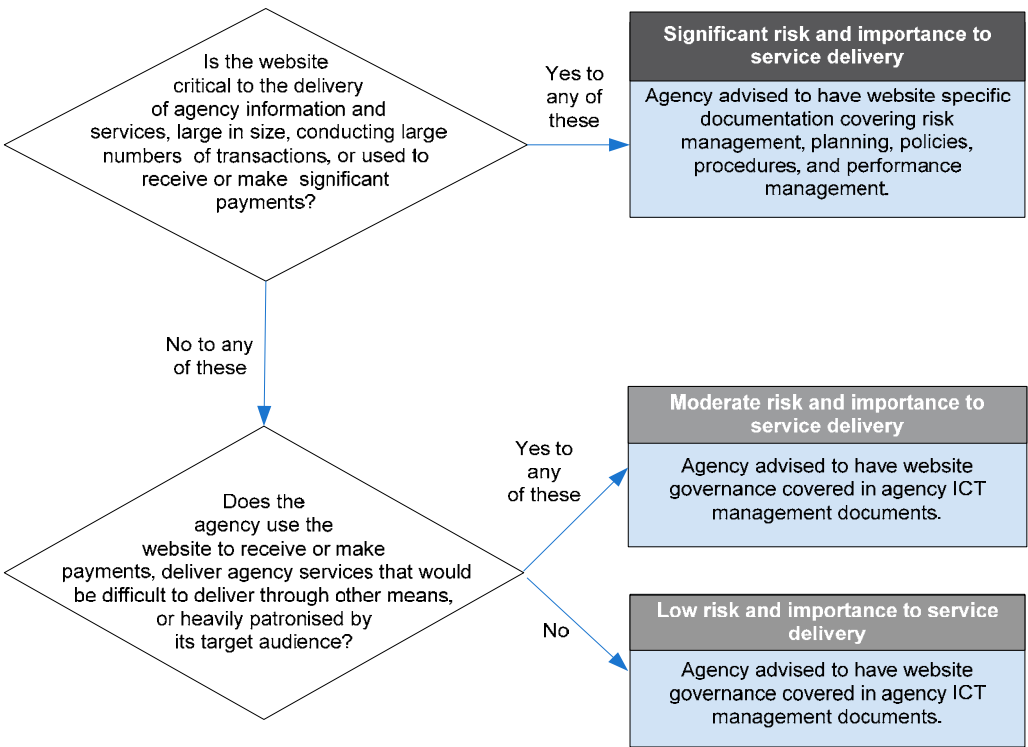
Assessment of the five audited websites management approaches

1.33 An agency’s website management will vary depending upon the significance of each of its websites to the delivery of agency information and services.

1.34 To guide the assessments of agencies’ website management documentation, the ANAO developed a ‘decision tree’ that categorises websites based on their function and associated risk level. Figure 1.2 illustrates an approach to determine whether a website is of significant, moderate or low risk to an agency’s service delivery.

Figure 1.2

Decision tree for categorising agency websites



Note: Agencies with multiple websites comprising sites categorised as moderate to high risk to service delivery are advised to have specific website documentation that covers all of their websites.

1.35 The ANAO identified that agencies with critical or large sites pose higher risks to service delivery. In these circumstances, agencies’ website management should be underpinned and informed by their broader risk

management framework. In particular, management should be supported by specific consideration of website risks, planning, policies, procedures, and performance monitoring and reporting. In comparison, websites that are not critical or large would generally have lower risks, and therefore it would be sufficient that their website governance be incorporated within agency-wide ICT management documentation.

1.36 The ranking of an individual website as having a high, moderate or low risk to service delivery is often different to the risk when the website is one of several or many that the agency has. Where an agency has several or many websites, then it is encouraged to assess the business risks in relying on the larger number of sites. In general, agencies with multiple websites are likely to have significant risks to service delivery that it must control.

1.37 Deciding on where a website fits within the ANAO assessment model is a decision for each agency to make. However, for the purposes of this audit, the ANAO classified one of the five audited websites as being of significant service delivery risks, with the other four sites categorised as having moderate to low service delivery risks. The three agencies managing the five websites had multiple websites.

Assessing the agencies' supporting website management documentation

1.38 The ANAO assessed the level of the five websites management documentation, having regard to its adequacy, scope, currency, and alignment as defined in Table 1.3. This assessment is expressed throughout the Report using the matrix shown in Figure 1.3.

Table 1.3

Criteria for assessing website management documentation

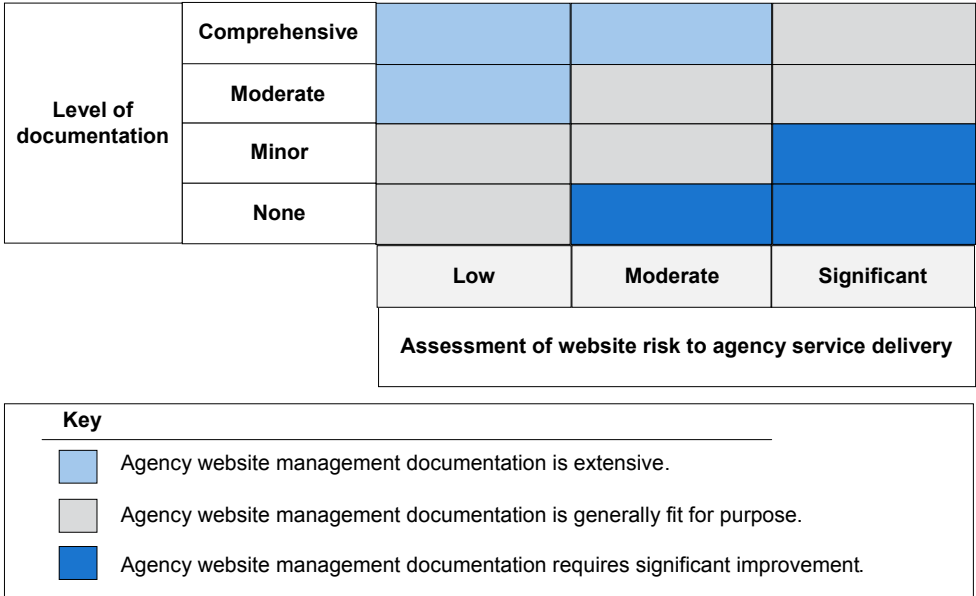
Criteria	Meaning
Comprehensive	The documentation covers key aspects and is specific to the website management practice, is centrally managed, is periodically reviewed and has controls over documentation review.
Moderate	The documentation covers some aspects of website management, is not necessarily specific to the website, is not centrally managed, and has some controls over documentation review.
Minor	Indirect coverage of website management in other agency documents, not specific to the website, is managed across parts of the agency, not periodically reviewed, and no controls over documentation review.
None	No supporting website documentation.

Assessing agency website management documentation

1.39 The assessment of each website’s management is expressed throughout the Report using the matrix shown in Figure 1.3.

Figure 1.3

Matrix used to assess website management



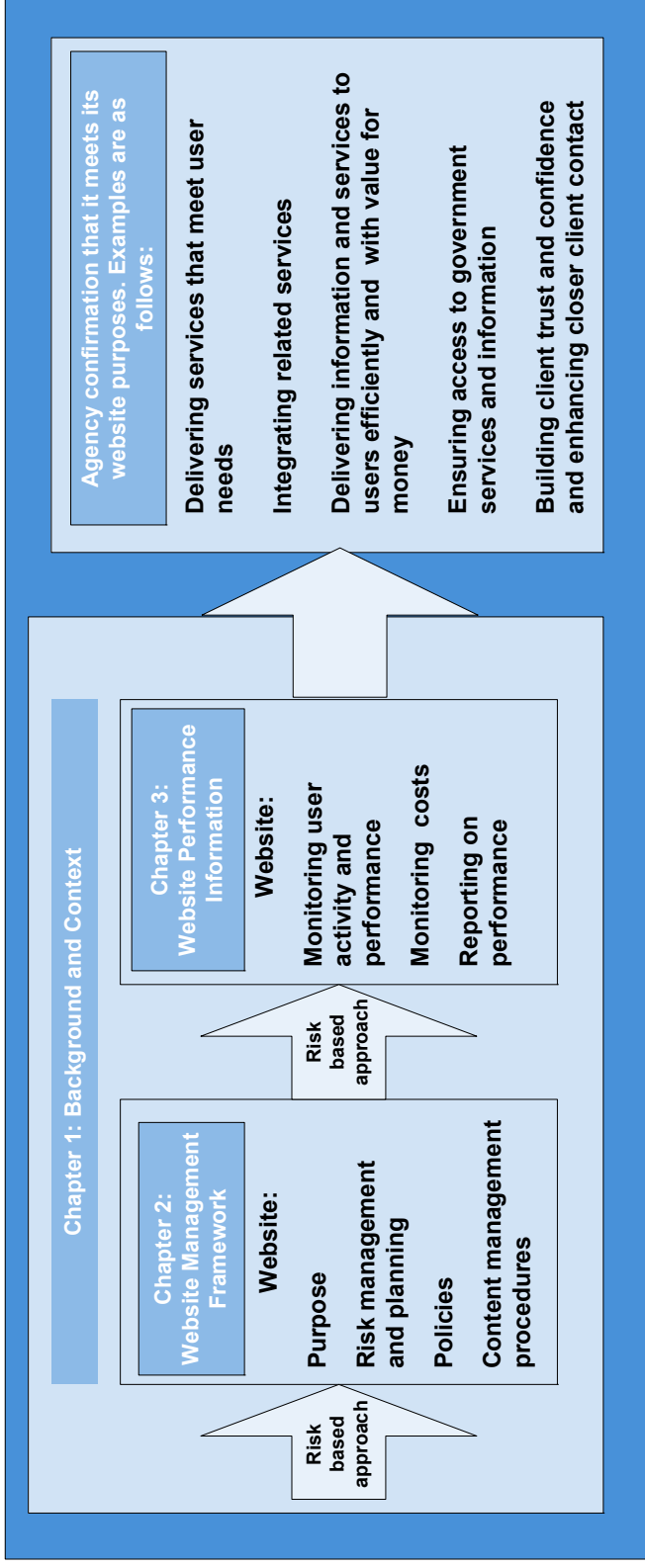
1.40 Figure 1.3 shows that website management documentation in the grey zone generally provides an adequate level of assurance that the website is being satisfactorily managed. Website documentation in the dark blue zone can be significantly improved, while documents categorised in the light blue zone are extensive but would benefit from streamlining given the risk.

1.41 Fieldwork was conducted between November 2007 and March 2008. The ANAO contracted the services of McGrathNicol Corporate Advisory to assist with the audit. The audit was conducted in accordance with Auditing Standards at a cost of \$445 000.

1.42 Figure 1.4 shows the structure of the report.

Figure 1.4

Structure of the Report



2. Website Management Framework

This chapter examines agencies approach to website management. In particular, the ANAO examines agencies' website purpose, risk management and planning, policies, and content management procedures.

Introduction

2.1 As described in Chapter One, the use of websites by Australian government organisations to provide information and services to users has increased significantly over the past 10 years. This increased reliance on websites has brought with it a need for improved management, incorporating better identification and management of risks and the implementation of stronger controls achieved through additional guidance to staff.

2.2 An effective website management approach will be underpinned by a clearly stated website purpose. It will be supported by an approach that incorporates risk management and planning, policies and content management procedures that match the website's significance to service delivery.

2.3 The audit examined five websites in detail, of which one was categorised by the ANAO as being of significant risk to service delivery, while the other four were categorised as being of moderate risk to service delivery. As outlined in Chapter One, websites categorised as being of significant risk to service delivery should have website specific documentation covering processes and practices, while sites categorised as being of moderate or low risk should, as a minimum, have the management of their sites covered in agency ICT documents. The ANAO also sought advice from agencies on website risk management and planning, policies and content management procedures from a survey on website management which it distributed to 40 FMA Act agencies.

Website purpose

2.4 A website purpose establishes what the site is meant to achieve. It assists agencies develop supporting policies, procedures and performance measures to manage website processes and practices.

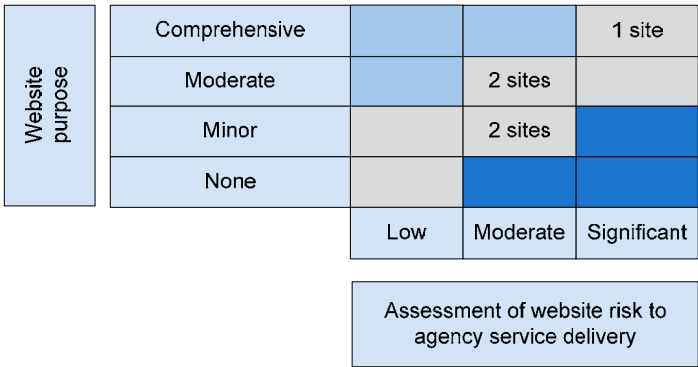
2.5 A sound website management approach will be underpinned by a clearly stated purpose developed in association with an agency's business goals and risk management. Such an approach allows the significance of a

website to service delivery to be taken into account by agencies in making decisions on website management.

2.6 The ANAO examined the purposes of each of the five websites.

Figure 2.1

Assessment of agency website purposes



Source: ANAO.

2.7 Figure 2.1 shows that the three agencies had to various degrees developed a website purpose for each of their websites. Two examples of website purposes are to:

- promote an understanding of the agency’s policies through the provision of accurate and up-to-date information, about the agency’s goals and activities; and
- a central reference site for anyone wishing to obtain up-to-date and reliable information relating to their field of interest.

2.8 The agency responsible for the site categorised as being of significant risk to service delivery had a website purpose that was clearly stated in its website management documents and was linked to the agency’s business goals. This site’s purpose was multi faceted encompassing increasing the users and uses of agency information for informed decision making, increased user understanding of website content, and improved cost effectiveness.

2.9 The other four sites did not have a clearly stated purpose, and there was little documentation showing if the purpose for each of the websites examined informed decisions on content and use, how the purpose aligned with each agency’s business strategy, and if it had been met. One of these site’s purposes was stated in website meeting minutes, while the other site’s purpose was stated in a consultant’s report reviewing the website’s management. The

implication of an agency not having a clearly stated website purpose is that it limits the ability to:

- assess website risks;
- make decisions the how the site is to be used including what content is placed on the site;
- identify adequate supporting policies and procedures; and
- determine whether the site assists citizens, businesses, community groups and other users, and whether it is operating efficiently and functioning at a reasonable cost.

2.10 Clearly stating a website purpose assists each agency to monitor, evaluate and report on website performance, and/ or its contribution to the agency's activities.

2.11 It would be beneficial for the two agencies managing the four websites, categorised as being of moderate risk to service delivery, to review and more clearly document each website's purpose.

Survey results

2.12 The audit survey sought advice from agencies on whether there was a document setting out the purpose of their main website, and whether the purpose had been achieved.

2.13 Each of the respondent agencies indicated that they had a website purpose. However, 10 of the 40 agencies indicated they did not have a document setting out the purpose of their main website.²²

2.14 A clear understanding of a website's purpose can reduce the risk that decisions on changes to a website's use and content are inconsistent with the site's purpose. This can adversely affect the program(s) relying on the websites. Also, understanding how agencies websites are contributing to the achievement of their purpose will assist in their management. In this context, collecting and analysing useful website user activity and satisfaction data, which takes account of AGIMO's Better Practice Checklist, *11 Website Usage Monitoring and Evaluation*²³, will assist in understanding how agencies' websites are contributing to the achievement of their purposes.

²² Additional survey responses on website purpose information is shown in Appendix 5.

²³ Available at <<http://www.finance.gov.au/e-government/better-practice-and-collaboration/better-practice-checklists/website-monitoring.html>>. Last accessed 4 December 2008.

Recommendation No.1

2.15 The ANAO recommends that agencies develop a clearly stated purpose for each of their websites that aligns with the agency's business goals, and periodically review whether they have achieved the purpose.

Agencies' responses

2.16 Each of the audited agencies and AGIMO agreed with the recommendation.

Australian Bureau of Statistics

2.17 During a recent update of website documentation the ABS has reviewed and updated information for ABS websites to ensure that the purpose of each website is clearly articulated and consistent with ABS strategic direction.

Department of Foreign Affairs and Trade

2.18 DFAT is updating its website policies, which will be formally articulated in the new DFAT Website Strategic Plan.

Australian Government Information Management Office

2.19 Finance supports this recommendation. In respect to reviewing websites to assess whether they have achieved their purpose, Finance considers that website usage metrics and statistics by agencies should form part of any assessment criteria to be employed in periodic reviews.

Website risk management

2.20 Given agencies' increased use of websites to provide information and services, agency identification and management of website risks assists in minimising the potential impact of disruptions to service delivery. Identification of website risks also assists in the development of mitigation strategies incorporating specific website policies and procedures, or introduction of systems to manage risks, such as a content management system.

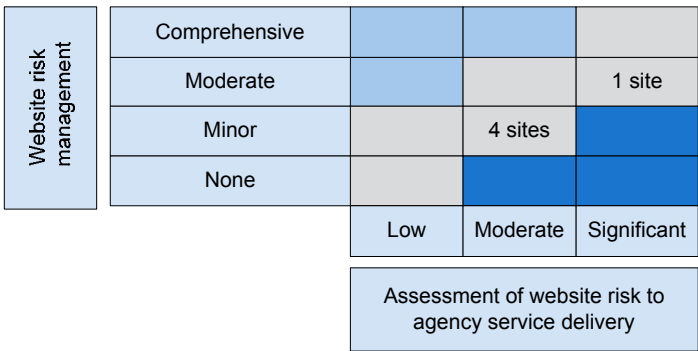
2.21 Sound risk management encourages a more outward looking examination of the role of an agency's website/s, including greater emphasis on website performance than would otherwise be the case. Good risk management practices reduce the likelihood and/ or consequence of new or emerging weaknesses or threats to the achievement of the programs'

outcomes. Good practice also helps agencies better understand and manage not only risks to websites, but also risks to the agency and to government.

2.22 The ANAO examined the risk management of each of the five websites.

Figure 2.2

Assessment of website risk management



2.23 As shown in Figure 2.2, the ANAO assessed the risk management documents relating to four of the websites as minor. For these four websites, most risks were covered in information and communications technology security documentation and varied in both the scope and type of the risks covered. The fifth site, a large transactional site, had a variety of risk management documents that were managed by different areas. Given the significance of this site, the agency would benefit from maintaining a risk management plan that covered the website’s key risks which are currently managed across the organisation. A plan of this nature would assist the executive by providing it with a comprehensive understanding of the significant risks to the operations of the website, and how they are being managed.

2.24 Similarly, two of the sites categorised as being of moderate risk to service delivery had not reviewed their website risk documents for up to three years. In this time, one of these sites had changed from an information-only site to a transactional site, while another site’s purpose also had changed. Periodic review of the risks, specifically where the website has undergone significant change, can reduce the likelihood or consequence of new or emerging weaknesses or threats to the achievement of the program’s outcomes.

2.25 The consequence of not periodically reviewing and updating an agency's website risks that are significant to service delivery, or risks associated with managing multiple websites, are:

- significant risks to service delivery may not be identified;
- mitigation strategies such as policies, procedures and/ or systems not adequately developed to manage identified risks; and
- the impact from risks that eventuate will be more severe and costly to remedy.

2.26 There would be benefit in the three agencies further assessing their websites' risks, and periodically reviewing and revising their risk management approaches. Assessments of website risk would assist each agency to reduce, for example, the risk of inaccurate content by targeting improvements in website policies and procedures.

Survey results

2.27 The survey sought advice from agencies on whether they had conducted a risk assessment of their main website. The results of the survey showed that 16 agencies had not conducted a risk assessment for their main website.

2.28 Overall, agency management of websites that are integral to service delivery and/ or that have multiple websites can be further improved by:

- ensuring that risk management decisions relating to critical communication channels are more strongly embedded into the agency's organisational risk management framework; and
- consolidating risk management documentation so that management has a centralised view of all key risks. This will provide agency management with a comprehensive understanding of an agency's websites risk environment, and enhance decision making.

Recommendation No.2

2.29 The ANAO recommends that agencies with websites that are integral to service delivery, consider the risks to these websites in the preparation of organisational risk management plans.

Agencies' responses

2.30 Each of the audited agencies and AGIMO agreed with the recommendation.

Australian Bureau of Statistics

2.31 Risk assessment is a standard element of planning within the ABS. Risks relating to security aspects of the ABS websites and other infrastructure systems were reviewed and updated during September and October 2008.

Department of Agriculture, Fisheries and Forestry

2.32 The department has already taken into consideration websites that are integral to service delivery in its organisational risk management plan.

Department of Foreign Affairs and Trade

2.33 The department has two websites which are integral to service delivery – namely for passports and consular services (Smartraveller). Both the Australian Passports Office and CPD factor website risks into their broader risk management plans.

Australian Government Information Management Office

2.34 Finance supports this recommendation and proposes that the risk assessment should acknowledge and assess risks to the agency or to the government that may arise from inadequate development and management of agency websites, not only the risks to the websites themselves.

2.35 Finance also encourages agencies to consider the significant risks associated with websites that may be unrelated to service delivery. For example, the associated risks of providing misleading, incomplete or incorrect information on information based websites (as opposed to service delivery websites). Furthermore, the risk that government websites may be inaccessible to people with disabilities applies to all government websites.

Website planning

2.36 Agencies with significant and/ or multiple websites face additional management risks, which would benefit from a sound planning approach: for example, risks relating to opening and closing websites, and managing a wider range of content with the potential for duplication or inaccuracies. Also, sound planning will assist agencies in managing their websites over the short to medium term to address such risks. The planning structure and detail will be dependent upon the number of sites and their complexity.

2.37 The ANAO reviewed the website planning of the three audited agencies. Only one agency, which had five websites, had a website plan that covered its websites. This plan set out the agency's:

- governance including the purpose for the websites;
- roles and responsibilities;
- supporting documents;
- guiding principles; and
- examples of services.

2.38 This was a sound planning approach.

2.39 The other two agencies which had six and 52 sites respectively, did not have a plan to manage their websites, and did not maintain a list of their sites.

2.40 The consequence of having insufficient planning for agencies with significant and/ or multiple websites include:

- management not fully informed on its current website status and future requirements;
- implementation of sites not aligned with agency business goals;
- the potential for duplication of information and/ or services; and
- increased costs as new sites are opened and obsolete sites are maintained.

2.41 Effective website planning is often necessary to manage the risks associated with managing multiple websites. Some agencies will open and close websites over time. By considering the total number of its sites, an agency can develop a more complete picture of its reliance on websites, and make decisions based on that picture. The absence of a website plan increases the likelihood of an agency opening new sites without adequate consideration, incurring unnecessary costs and duplicating some web-services through its multiple sites.

Survey results

2.42 The survey sought advice from agencies on whether their website management documentation included planning for the next three to five years. The survey responses showed only six of the 26 agencies with multiple websites had planned their website management over the next three to five

years. The extent of some agencies reliance on websites is evident, for instance, in how one large agency with multiple programs to deliver had 96 sites.

2.43 The survey results identified considerable diversity in the number, size, and cost of websites. For example, six agencies had over 30 sites, the sites varied in size from 35 to 900 000 web-pages, and had costs from \$10 000 to \$15 million per annum. Agencies with multiple or large websites faced increased risks associated with opening and closing websites, and managing growth in website content. These increased risks often required more active consideration of risks and a stronger emphasis on planning to help the sites achieve their purpose.

2.44 The survey results also identified that the 40 surveyed agencies had 504 websites of which 99 agency sites had a domain name other than gov.au.²⁴ Information on these other sites is limited, including on whether their number is increasing, and why they exist outside the gov.au domain. As mentioned earlier, in this audit the ANAO focused on websites with a gov.au domain name.

2.45 The gov.au domain name applies to all tiers of Australian government. The gov.au domain administrator for the Australian Government is AGIMO. AGIMO assesses domain name applications against the *Government Domain Names Eligibility and Allocation Policy*.²⁵

2.46 Guidance is also provided on the use of non gov.au domain names, advising that government agencies should only register outside of the gov.au domain if:²⁶

There is a compelling commercial business reason to do so. For example: international tourism sites - atc.net.au; organisations that may not be readily recognised as government bodies.

In order to protect against the use of government 'brands' in other domain spaces. For example: to stop someone else from using a high profile government brand such as 'centrelink', 'smartraveller' or 'multimediovictoria' for commercial gain. Note that this would only be necessary for high profile or commercially valuable brands.

²⁴ Additional survey responses on website planning are shown in Appendix 5.

²⁵ This policy is stated within the *Government Domain Name Eligibility and Allocation Policy* (which also apply to state and territory government websites). Available at http://www.domainname.gov.au/Eligibility_and_Allocation_Policy. Last accessed 4 December 2008.

²⁶ This policy is stated within the *Government Domain Names Choosing a Domain Name* guidelines (which also apply to state and territory government websites). Available at http://www.domainname.gov.au/Choosing_a_Domain_Name. Last accessed 4 December 2008.

If agencies do register outside of the gov.au domain, they should also register the gov.au equivalent.

Government agencies should contact auDA²⁷ for advice before purchasing domain names from the secondary domain name market.

2.47 In the light of the findings of this audit, the ANAO would support the further development and clarification by AGIMO of policies and guidelines on the gov.au domain for Australian Government websites.

Website management policy

2.48 A key means to address website risks is through the development and implementation of website management policy.

2.49 Website management policy describes how an agency will oversee the management of its website/s on a day-to-day basis. It will take into account a website's purpose, planning requirements, and strategies to deal with significant risks to service delivery.

2.50 Well developed website management policy:

- assists agencies to make informed decisions on the management of their websites;
- provides a basis for agencies to administer their website/s. For example, agencies creating websites would benefit by having clearly stated policy, advising on:
 - the requirements to create a new website, such as through reliance on a business case;
 - approval and other processes to be followed;
 - risk assessment and other documentation to be developed;
 - technical considerations, such as ownership of information or standards for performance and maintenance;
- sets out what is required to achieve the website's purpose, which assists in understanding how a website contributes to an agency's work; and
- assists in the development of website management procedures.

²⁷ .au Domain Administration (auDA), the industry self-regulatory body, for management of the gov.au domain.

2.51 The ANAO examined website management policy for the five websites.

Figure 2.3

Assessment of website management policy

Website management policy	Comprehensive			
	Moderate		1 site	1 site
	Minor		3 sites	
	None			
		Low	Moderate	Significant
Assessment of website risk to agency service delivery				

2.52 Figure 2.3 shows that two of the websites, one with significant risk to service delivery, had moderate website management policies. The website management policies for these two sites mainly covered website publishing and content management processes. The other three sites, of which two provide large amounts of information to the public, had minor supporting website policies. The agencies managing these three sites would benefit from reviewing their website policies in the context of growing usage.

2.53 In addition, there was little evidence that the website policies covering the five sites aligned with or were informed by each agency’s risk management and planning approaches. Also, the three agencies did not have website policy for opening and closing websites. Agencies with policy for opening and closing websites are more likely to reduce the likelihood of an agency duplicating some of its services through multiple sites, and are more likely to control their website costs.

2.54 A consequence of not having adequate website policy, that is periodically reviewed and amended as website purposes and risks change, is that staff will not have a clear understanding of what is required to manage websites, or key policy and processes do not address emerging risks. This has the potential to lead to ineffective processes and increased management costs.

Survey results

2.55 The survey asked agencies whether they had a documented website management policy. The survey responses showed that most agencies had policies to support their websites.

2.56 The survey results also showed that there is very little policy, documented explanation or data available on why agencies open or close websites.²⁸ This supported the findings from the five audited sites.

2.57 The audit concluded it would be beneficial for agencies to review and revise their coverage of website policies following significant change to an agency's business goals, website purpose and/ or risks. Also, it would be beneficial for agencies managing multiple websites to develop policy to provide advice on opening and closing large websites or websites with significant numbers of transactions. Clear advice on opening or closing a website can assist agencies in administering programs where electronic service delivery is required.

Website content management procedures

2.58 A key website management risk for most agencies is the effective management of their website content, including changes to content over time. To assist agencies manage their website content, AGIMO provides guidance in its Better Practice Checklists. Specific AGIMO Better Practice Checklists on content management include: *7 Archiving Web Resources*, *8 Managing Online Content*, *9 Content Management System*, and *10 Implementing a Content Management System*.²⁹ The approach used by agencies to manage their website content³⁰ is a critical element of sound website management.

2.59 Where website content is not managed well, there is an increased risk that agencies will publish incorrect, unclear, confusing, or out-of-date information on their websites. The case study below illustrates the potential consequences for an agency not having a sound approach to managing website information.

²⁸ Additional survey responses on website policy are in Appendix 5.

²⁹ Available at <<http://www.finance.gov.au/e-government/better-practice-and-collaboration/better-practice-checklists>>. Last accessed 4 December 2008.

³⁰ For the purposes of this audit, web content refers to text, graphics and photos, video or audio, and application code that visitors access through the website.

Poor content management practices.

A large agency prepared to publish on its website a response to a review of a particular intergovernmental agreement. A copy of this review document was held in the agency website's 'staging area', which allowed information to be stored prior to it being published on the agency website.

Due to the sensitive and complex nature of the review, the review's findings and the Government's response to the review were not finalised by a certain date. Neither the review document itself nor the Government's response to the review were approved by the Minister and senior agency staff at that time. Subsequently, an officer undertaking routine maintenance of the website assumed that, given the length of time the document had been in the 'staging area', it had already received approval to be published on the website. The staff member then published the unapproved draft government response to the review on the agency's website.

Agency officials discovered that the document had been published in error on the agency's website. The next day, the media reported on the unapproved draft government response.

The publication of the review document and the unapproved government response caused ministerial and agency embarrassment. The agency investigated the incident and found that the publication of the review and the unapproved government response:

- was the result of an inadequate system of controls associated with the website publishing process. In particular, the process for authorisation of publishing material on the agency's website required significant improvement;
- the process for publishing information on the website did not record complete historic information including records of authorisations; and
- information in the agency's staging area was not secure, with access not restricted to approved staff.

Following this investigation, the agency improved its content management, investing significant resources in developing specialised software.

2.60 This case study underlines the benefits to agencies of having adequate processes and procedures to ensure that only accurate, timely and approved content is published on their websites. It also illustrates that website content

must be secure, and that agencies should maintain records of current and past content.

Audited agencies' approaches to manage the content of their website/s

2.61 To obtain assurance that the content management approaches³¹ used by an agency are appropriate, it is important that an agency periodically reviews them. Periodic reviews allow an agency to identify opportunities to simplify their management and reduce and refine the content already published on their sites.

2.62 The approach taken by agencies to manage the content of their websites is dependent on factors including:

- the size of the website operations;
- the types of sites supported by each agency;
- agency structure;
- staff delegations;
- the use of service providers; and
- the ICT systems and software used to support the website.

2.63 The five audited websites all used different approaches to manage their website content. Of note was that one of the agencies responsible for two of the audited websites reviewed its website content management approaches in 2007. Following that review, the agency:

- reduced the number of approaches to manage its multiple websites;
- improved processes for approving content;
- consolidated information on its websites, and ensured logical linkages between its websites;
- improved the security of its website content; and
- lowered future costs of publishing content.

2.64 The other agency managing two of the sites would benefit from a similar review of its content management approaches. Based on the

³¹ For the purposes of this audit, a website content management approach refers to an agency's end-to-end approach to place website content on its website. That is, from the time website content is conceived through to that content being published on an agency's website.

experiences of the agency that reviewed its content management approaches, reducing the number of approaches used to manage website content can:

- reduce costs by eliminating duplication of processes and procedures;
- improve staff understanding of the processes and procedures to publish information on websites; and
- reduce the risk that incorrect, superfluous or outdated content remains on agency websites.

2.65 Although the above factors are particularly relevant for agencies using more than one approach to manage website content, they are also applicable to agencies that have not planned carefully, or have not recently revised, their content management approaches.

Processes and procedures used by agencies to create, revise and publish website content

2.66 The ANAO examined the processes and procedures that the three agencies used to:

- **Create, revise and publish website content.** These included:
 - specifying and documenting the roles and responsibilities of, units and staff responsible for developing, amending, approving and publishing website content; and
 - documenting the functions of ICT systems and systems software used to process website content.³²
- **Approve, retrieve and archive.** These included the steps to record the:
 - changes that have been made to website content, and when those changes were made (that is, archiving website content changes); and
 - staff, or ICT systems responsible for approving changes to website content.

³² Although it is preferable (and represents better practice) for agencies to document all aspects of their approach to manage website content prior to publication, it may not always be necessary to specify the roles and responsibilities of staff if the website is small and controlled by a single person. However, Australian Standard 3876–1991, *Information Processing – Guidelines for the documentation of computer-based application systems*, p. 5 specifies that all ICT systems should include ‘an up to date description of all aspects of the system including hardware, software and data’.

2.67 The results of the ANAO’s assessment of the five agency websites are shown in Figure 2.4.

Figure 2.4

Assessment of processes and procedures documentation to create, revise and publish website content

Agency documentation to create, revise and publish website content	Comprehensive			1 site
	Moderate		3 sites	
	Minor			
	None		1 site	
		Low	Moderate	Significant
Assessment of website risk to agency service delivery				

2.68 Figure 2.4 shows that the agency responsible for managing the website categorised as significant to service delivery had comprehensive documents covering its content management procedures. This included documentation of staff roles and responsibilities in managing website content.

2.69 The content changes to one of the websites were conducted by an external service provider, with changes developed by the agency. The result of this arrangement is that the agency did not create and maintain procedures outlining how content changes were made to the website, as the latter was created and maintained by the contractor. However, the agency did retain information on the roles and responsibilities of the service provider and its staff.

2.70 One website had no documentation to specify content management processes, including of the responsibilities of staff responsible for daily content management. Although content change approval processes for this website were not documented, the responsible agency had a tightly controlled content management approach. This approach relied on the website manager understanding all relevant processes and procedures for releasing all content. This approach has some risks that can lead to incorrect information being published. The agency responsible for this website recognises the risks of its approach, and is currently reviewing its management.

2.71 Better practice features of the five websites' content management are shown in Appendix 6.

2.72 As discussed in the case study, a specialist ICT system is one mechanism that can be used by agencies to control content management.

Survey results

2.73 Twenty one of the 40 agencies indicated that they documented their processes to create and change the content on their websites.³³

Agencies' processes and procedures to archive, retrieve and hold staff to account for website content

2.74 If content is placed on an agency's website in error, the agency needs to identify how the error was made and which staff or ICT systems were responsible for that error. By quickly identifying how the incorrect content was placed on the website, the agency can change its processes and procedures to reduce the risk of similar mistakes.

2.75 Consequently, it would be beneficial for agencies to archive and retrieve old content, and record which staff are responsible for approving website content. The benefits of agencies establishing processes and procedures are that:

- **old website content can be retrieved quickly if incorrect website content is detected, or if a malfunction in the website occurs.** By archiving old website content, and changes to website content, agencies are able to recover quickly from a malfunctioning website. Agencies are also able to replace incorrect content quickly with correct older content if required;
- **misinformed or incorrect content is less likely to be published.** Establishing processes and procedures that require staff to authorise content reduces the risk that content is not reviewed before it is published; and
- **agency staff or ICT systems can be held to account for the publication of embarrassing or incorrect material published on websites.** By establishing content authorisation processes and procedures, the

³³ The results of the survey showed that processes and procedures applicable to website content workflow were the most documented areas of website management.

agency can identify staff and ICT systems responsible for the publication of incorrect information.

2.76 The ANAO examined whether each of the three agencies in its sample:

- systematically recorded website content changes;
- had a sound approach to archive and recover changes to website content; and
- had a comprehensive approach to record which staff member approved website changes, preventing unauthorised content from being published.

2.77 The results of the ANAO’s assessment of the five agency websites are shown in Figure 2.5.

Figure 2.5

Assessment of processes and procedures to approve, retrieve and archive website content

Agency documentation to approve, retrieve and archive website content	Comprehensive		1 site	1 site
	Moderate		2 sites	
	Minor		1 site	
	None			
		Low	Moderate	Significant
Assessment of website risk to agency service delivery				

2.78 Figure 2.5 shows that four of the five websites had moderate or comprehensive processes for approving changes to agency website content, and processes for archiving that material.

2.79 The agencies responsible for the two sites with comprehensive content management documentation used automated systems to manage website content. Importantly these automated systems:

- prevented content from being published without electronic approval from relevant staff;

- stored all website content changes (and edits to the unapproved changes) as well as identifying staff responsible for content changes and edits to unapproved changes; and
- retained copies of the website prior to changes being made. This allowed the agency to revert to earlier versions quickly if they identified mistakes in content.

2.80 Although these systems provided agencies with significant benefits, they are not suitable for all websites because of costs.

2.81 One agency used a manual system to approve and archive changes to website content. This approach included a committee of senior staff to approve all website content. All changes were documented, archived, and were readily accessible.

2.82 As discussed earlier, a single officer approved all content changes for one website. The agency did not keep adequate records of content changes, and the approvals for those changes. As discussed above, the agency responsible for this website is currently reviewing its management, and is investigating whether additional specialist software could improve its content management.

2.83 The elements of better practice identified in the ANAO's examination of five agency websites are shown in Appendix 6.

2.84 Overall, four websites had adequate processes to record changes to website content, archive these changes, and to record approvals. The agency responsible for the website that had no documentation to create, revise and publish website content will benefit from improving its administrative practice in this area, and could look at the processes and procedures it uses for its other websites. This agency advised that it has commenced improvements to these processes and procedures.

2.85 The agencies using well developed specialist software had an increased capacity to manage changes to web content and the approvals for that content. Given the continued growth of websites and their usage, each agency is encouraged to examine the benefits and costs of introducing specialist software.

Recommendation No.3

2.86 To assist agencies manage the content on their websites, the ANAO recommends agencies:

- (a) periodically review, remove and archive website content that is inaccurate, superfluous or outdated;
- (b) document roles and responsibilities; and
- (c) develop and implement arrangements to approve and record changes, and subsequently archive them.

Agencies' responses

2.87 Each of the audited agencies and AGIMO agreed with the recommendation.

Australian Bureau of Statistics

2.88 ABS has a regular program of reviewing website content to ensure that it remains relevant and supports ABS strategic dissemination goals. ABS continues to invest in improving the website and enhancing existing content management systems to improve usability, efficiency and effectiveness.

Department of Foreign Affairs and Trade

2.89 The regular review of website content to ensure it is accurate and up-to-date is a fundamental requirement of sound website management.

2.90 To address this recommendation we propose to: undertake an audit and review of website content; better define roles and responsibilities within the department for improved website governance and operations; develop policies and procedures for improved website management and publishing; and develop a Website Publishing Style Guide.

Australian Government Information Management Office

2.91 Finance supports this recommendation and notes it should apply equally to all government websites. The Web Publishing Guide on the Finance website, provides advice to agencies on maintaining online content; specifically of interest to this recommendation are the pages under "Archiving and Preservation". The Finance publications - *Better Practice Checklist – 8, Managing Online Content* and *Better Practice Checklist – 9, Selecting a Content Management System* also provide specific and specialised advice in respect to content management and archiving of content.

3. Website Performance Information

This chapter examines how agencies monitor website user activity and performance, and report on website performance.

Introduction

3.1 The approach used by an agency to monitor and report on its websites' user activity and performance is an important element of a sound website management approach. An effective monitoring approach will inform agency staff and executives of how its websites are performing, and how they can be improved to assist in achieving program outcomes.

3.2 An effective website monitoring and reporting approach should be underpinned by a clearly stated purpose for each website developed in association with an agency's business goals and risk management approach. Further, it will involve the collection, analyses and reporting of user activity and operational performance information to agency staff and executives. These data should be understandable and useful taking into account the significance of the site to service delivery. This assists agency staff and executives to make informed decisions regarding website management.

3.3 Agency website performance monitoring and reporting broadly falls into three categories. Firstly, it reports on user activity providing management with information on website measures such as number of visits, hits, page views, and most downloaded documents. Secondly, it enables a view to be formed on user satisfaction such as ease of access and ability to find information and/or transact with the site. Finally, it informs management how agency websites are contributing to program and agency outcomes: for example, a reduction in costs due to users accessing information via their website rather than directly visiting an agency. This chapter examines the first two categories outlined above, recognising improvements in understanding user activity and performance, and reporting on website performance has potential benefits for the quality of website reporting in the context program delivery (third category).

3.4 In this Chapter, the ANAO examined how agencies:

- monitored and evaluated website user activity, satisfaction, and costs; and
- reported on website performance.

Monitoring website user activity and performance

3.5 Website monitoring involves the collection and analysis of website user activity and performance information. It allows agencies to determine if their websites meet their business and user needs.

3.6 The level and nature of website performance monitoring are most useful when aligned with the significance of the website to service delivery. For example, a large site managing high levels of transactions will require a more comprehensive monitoring regime than a small information-only site.

Collecting website user activity and performance information

3.7 Agencies can collect a variety of website user activity and performance information to assist in managing their sites. For example, agencies can collect information on who is accessing their websites, how users are accessing their websites, and what information is being viewed and downloaded by users. Agencies may also collect data on the costs of their websites.

3.8 AGIMO's Website Usage Monitoring and Evaluation Better Practice Checklist³⁴ advises on ways to monitor website user activity and satisfaction. Examples include:

- for information websites – website user activity indicators, for example, website hits, page views, visits and unique visitors, referring websites, top entry pages, and path analysis; and
- website user satisfaction methods, for example, surveys and user testing.

3.9 Also, agencies with transactional websites may consider additional indicators to monitor performance. Examples include: top ten transactional categories relating to volume or dollar value, completed versus aborted or failed transactions, and time taken to respond to user applications, such as for, permits or licences.

3.10 Agencies are encouraged to have performance measures to monitor the performance of their websites in meeting their purposes and contributing to program outcomes.

3.11 The ANAO examined the type and level of website user activity data collected for each of the five websites.

³⁴ AGIMO, Better Practice Checklist, *11 Website Usage Monitoring and Evaluation*, Canberra, 2004. Available at <<http://www.finance.gov.au/e-government/better-practice-and-collaboration/better-practice-checklists/website-monitoring.html>>. Last accessed 4 December 2008.

Figure 3.1

Assessment of website user activity data

Website monitoring	Comprehensive			1 site
	Moderate		2 sites	
	Minor		2 sites	
	None			
		Low	Moderate	Significant
Assessment of website risk to agency service delivery				

3.12 Figure 3.1 shows that the three audited agencies collected website user activity and satisfaction data on their five sites. The agency managing the website with significant risk to service delivery collected a wide range of such data. This information showed how the site was being accessed and used, and user satisfaction with aspects of the site. For example, it provided information on website hits, page views, visitors, most downloaded files, most active organisations, and users’ satisfaction with the website’s content. It also identified areas for improvement, such as ease of findings topics on the site.

3.13 Two of the sites, rated as moderate risk to service delivery, collected little data on user activity and satisfaction, making it difficult for those agencies to understand user requirements and identify website practices that require improvement.

3.14 Three sites had transaction capabilities allowing users to pay for services online. Little transactional information was collected on these three sites. Establishing performance indicators and collecting transactional information against these indicators would assist to better understand how these sites are performing, and to identify areas for adjustment or improvement.

3.15 Common website performance indicators used across three sites to monitor user activity included hits, page views, visits, top pages, downloads, and online user comment forms. Less regularly used indicators included surveys, user requirement studies, and accessibility testing.

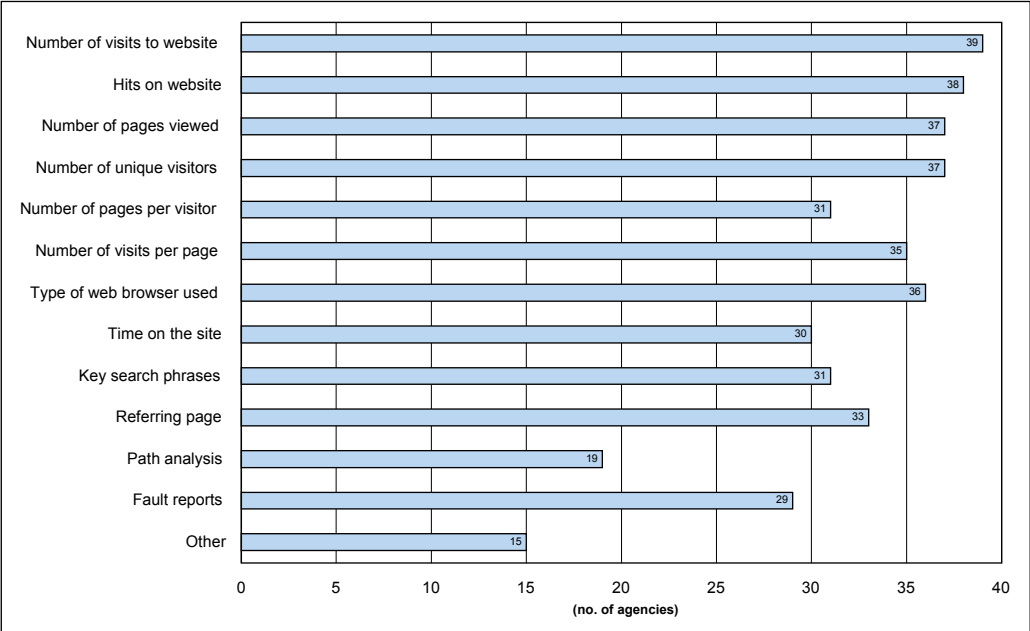
3.16 Overall, the five websites all had a common purpose to increase the awareness of their services to users, which for four of the sites was similar to the agencies’ business goals: for example, to promote public understanding of

the agency through the provision of accurate and up-to-date information. The user activity and satisfaction data collected by the three agencies assisted each agency in identifying aspects of how their websites were meeting their purposes. For example, surveying website users provided information on users understanding of website services.

Survey results

Figure 3.2

Website user activity indicators used by agencies



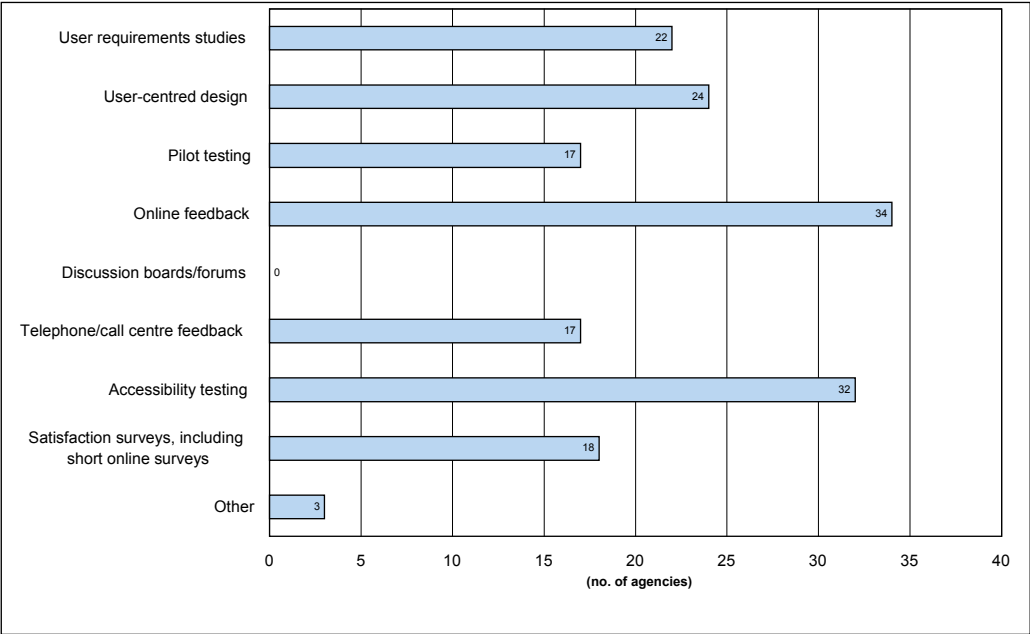
Note: Other activity indicators used by agencies include, for example, document downloads, and country breakdowns.

3.17 As shown in Figure 3.2:

- a majority of agencies indicated that they collect website user activity data;
- the most used activity indicators are: Number of visits to website; Hits on website; Number of pages viewed; Number of unique visitors, and Type of web browser used; and
- website indicators not used by a number of agencies included fault reports and path analysis. Collection of data on these indicators would assist agencies to identify weaknesses in website performance.

Figure 3.3

Website user satisfaction measures applied



Note: Other satisfaction measures used by agencies include, for example, external evaluation review, feedback at external events, and reduction in negative feedback emails sent by the site.

3.18 As shown in Figure 3.3:

- a majority of agencies indicated that they provided the facility for users to provide comments via online feedback forms;
- less than fifty per cent of the respondent agencies conduct website satisfaction surveys, pilot testing, or telephone/call centre feedback; and
- none of the respondent agencies used discussion boards/forums.

Evaluating website user activity and performance information

3.19 AGIMO defines website evaluation as the analysis of collected website user activity data to assess the success of websites in fulfilling or meeting website objectives. It advises that the:³⁵

³⁵ AGIMO Better Practice Checklist, 11 *Website Usage Monitoring and Evaluation*, version 1, Canberra, 2004. Available at <<http://www.finance.gov.au/e-government/better-practice-and-collaboration/better-practice-checklists/website-monitoring.html>>. Last accessed 4 December 2008.

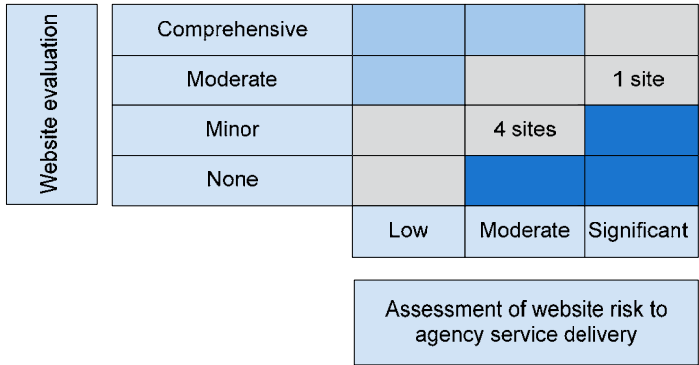
Results of evaluation are meaningful only if the evaluation has focused on the right things and if the results have been considered in the context of the original goals and objectives of the site or service that has been evaluated.

3.20 To implement this advice, agencies will require measures, targets or key performance indicators to monitor and analyse performance, whether it be over time or against set targets. For example, severe downtime does not exceed a predetermined percentage of time per month, or target audience transaction participation is maintained at a certain percentage of registered users.

3.21 The ANAO examined how the three audited agencies evaluated their websites user activity and satisfaction data.

Figure 3.4

Assessment of agency website evaluation



3.22 Figure 3.4 shows that the agency managing the site categorised as being of significant risk to service delivery had moderate documents supporting the analysing of the site’s user activity and satisfaction data. The other two agencies managing the four sites categorised as being of moderate risk to service delivery had conducted minor analysis of the user activity and satisfaction information collected. Analyses conducted by these two agencies included:

- tracking website activity level by day of the week, weekly, monthly and/or yearly; and
- comparing website user activity data over time, monthly and/or yearly: for example, most popular pages with average length of time the page was viewed, and number of hits for the website against how many were successful and how many failed.

3.23 Tracking and comparing performance data over time is useful in gaining a better understanding of how an agency's websites are performing. However, these two agencies mainly presented the user activity data and performance information in its raw form, with little explanation as to what the data meant and factors influencing any changes over time.

3.24 These two agencies would benefit from reviewing their evaluation processes and practices, and implementing an approach that will provide their executives with additional information to assist them in making informed decisions on how best to meet user requirements.

3.25 There was little evidence that the three agencies had developed performance measures or targets to evaluate performance. Without performance measures or targets agencies will not be able to adequately analyse the user activity and satisfaction data.

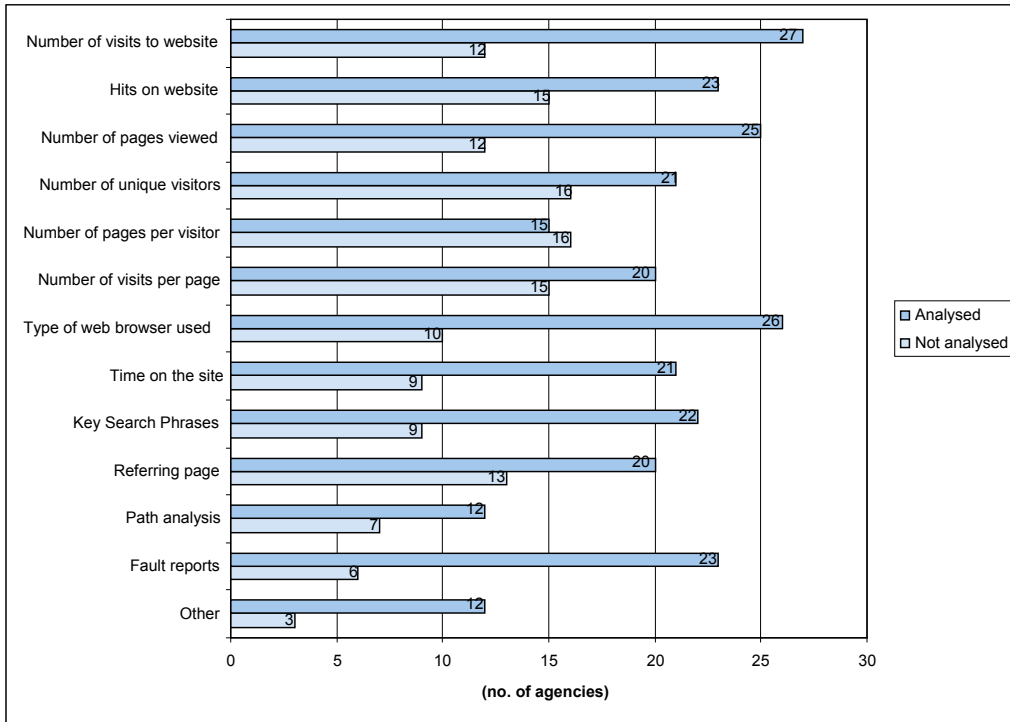
3.26 The consequence of not adequately analysing website performance information is that it inhibits the agency's ability to understand how its websites are functioning, and to identify strengths and weaknesses in service provision. For example, agencies that do not adequately analyse data collected on the number of documents downloaded from their websites will not know which documents are in highest demand. Data on downloaded documents assists agencies to improve website navigation, thereby improving access to frequently used documents and forms.

3.27 The ANAO concluded that the three agencies with multiple websites would benefit by improving and documenting their approaches to analysing website user activity and performance data. Benefits include improved information to make decisions on, identification of risks to service delivery, and the identification of weaknesses and/ or strengths in website functionality. Improved analysis will also provide additional information that identifies how the website is meeting its purposes, and how it contributes to program outcomes.

Survey results

Figure 3.5

Analysis of website user activity and performance data



Note: Other user activity data analysed by agencies include, for example, page per country, broken links report, website ranking, top 10 pages accessed, most visited web pages on site, and top page views.

3.28 Figure 3.5 shows that:

- with the exception of data on the number of pages per visitor, a majority of the respondent agencies indicated that they analysed the various types of activity data they collected; and
- the most analysed website user activity data was: Number of visits to the website; Type of web browser used; Number of pages viewed; Hits on website; and Fault reports.

3.29 AGIMO's Better Practice Checklist on Website Usage Monitoring and Evaluation provides guidance on these measures.³⁶ It would also be beneficial

³⁶ AGIMO Better Practice Checklist, *11 Website Usage Monitoring and Evaluation*, version 1, Canberra, 2004. Available at <<http://www.finance.gov.au/e-government/better-practice-and-collaboration/better-practice-checklists/website-monitoring.html>>. Last accessed 4 December 2008.

for agencies to further develop and document their website evaluation methods, including the development of performance targets.

3.30 The ANAO concluded that agencies with websites that are significant to service delivery and/ or that have multiple websites would benefit from having a systematic approach to the analysis of website user activity and performance data. Such an approach would provide agency staff and executives with improved information to manage website risks and make informed decisions on the use this communication channel in comparison to others.

Monitoring website costs

3.31 Administration of websites for most agencies is not a major cost in an agency's ICT budget. However, given the increased level of information and services they provide, and increases in the number of sites and their complexity, costs are increasing. For example, the United Kingdom's National Audit Office advised that 'a large number of organisations reported substantial increases in web spending than reported on increased ICT expenditure generally' from 2002 to 2007.³⁷

3.32 Three relatively recent reports on the use of ICT have focused on better understanding the costs of administering online services. For example:

- A review of Western Australian Government websites advised:

There is potential for the Western Australian Government to achieve a greater return on its annual investment in websites by adopting a more strategic approach to this key service delivery channel.³⁸
- A report published by the United Kingdom's National Audit Office, *Government on the internet: progress in delivering information and services online*, advised:

Some departments and agencies have poor data on the cost of their websites and along with poor data on usage, they are unlikely to be maximising value for money.

³⁷ *Government on the internet: progress in delivering information and services online*, July 2007, Figure 13. Available at <http://www.nao.org.uk/publications/nao_reports/06-07/0607529.pdf>. Last accessed 4 December 2008.

³⁸ Review of Western Australian Government Websites for the Western Australian Public Service, December 2005. Available at <<http://www.egov.dpc.wa.gov.au/documents/WebsiteReviewReportfinal.pdf>>. Last accessed 4 December 2008.

To obtain good value for money, government organisations should be able to closely relate cost and usage information.³⁹

- An ANAO report, *Measuring the Efficiency and effectiveness of E-Government*⁴⁰, recommended that agencies develop indicators, including data on costs, for the performance of their online service delivery.

3.33 Agencies with multiple or large websites or with websites used for financial transactions, will benefit from improved understanding of their website costs. Sound website costing information will assist agencies by enabling them to monitor website performance against cost, monitor actual against budgeted costs, and in estimating value for money in comparison to other service delivery channels.

3.34 The ANAO examined the three agencies' website costs, and found that:

- total website costs varied from \$1 million per annum for the agency with six websites to \$5 million for the agency with five websites;
- website costs had increased slightly from 2005–06 to 2006–07;
- all three included website costs in their ICT budgetary processes. None of the agencies examined separately understood their website costs independently of other ICT costs. This made it difficult for them to determine total website costs and compare website costs over time or with other agency communication channels; and
- none of the websites had clearly documented costing methodologies.

3.35 The three audited agencies, all with important and multiple websites, would benefit from an improved understanding of their website cost information. Improved website cost information would assist agencies to estimate the return on their websites investments, and whether their websites are achieving value for money. It would also assist agencies in comparing costs between service delivery channels.

³⁹ *Government on the internet: progress in delivering information and services online*, July 2007. Available at <http://www.nao.org.uk/publications/nao_reports/06-07/0607529.pdf>. Last accessed 4 December 2008.

⁴⁰ ANAO Audit Report *Efficiency and effectiveness of E-Government* No.26 2004–2005. Available at <http://www.anao.gov.au/uploads/documents/2004-05_Audit_Report_26.pdf>. Last accessed 4 December 2008.

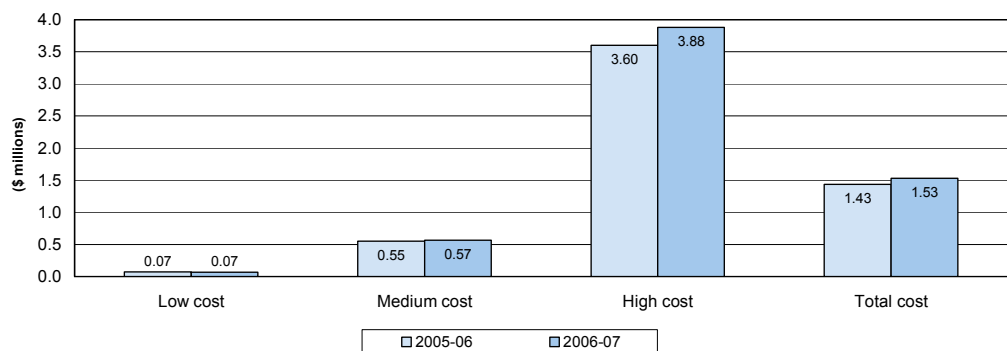
3.36 Understanding the costs of providing information and services in different ways enables agencies to make informed decisions about the best ways to deliver services. It also assists in identifying and reducing risks.

3.37 It would be beneficial for the three agencies to develop and implement a methodology for determining website costs. Implementation of such a methodology would enable each of the agencies to better monitor their website costs, and allow them to compare their website costs with those of similar agencies or with agencies with similar sites.

Survey results

Figure 3.6

Average cost of websites by agency group for 2005–06 and 2006–07⁴¹



3.38 Figure 3.6 shows for the 35 agencies that responded:

- the average cost of managing websites across the respondent agencies was \$1.4 million in 2005–06, rising slightly to \$1.5 million in 2006–07:
 - low cost agencies spent an average of \$70 000 in both years;
 - medium cost agencies spent an average of \$550 000 in 2005–06 and \$570 000 in 2006–07; and
 - high cost agencies spent an average of \$3.6 million in 2005–06 and \$3.9 million in 2006–07.

3.39 Also, the audit collected some data from the 40 surveyed agencies on the cost of their websites. It found that only six of the 40 agencies maintained

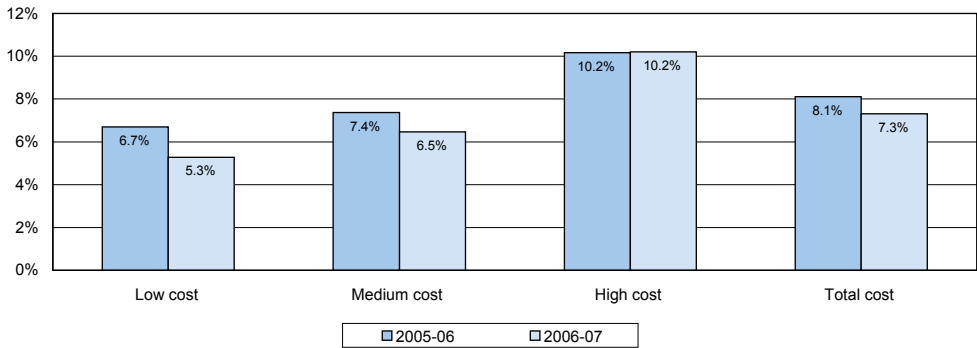
⁴¹ A low cost agency is defined as an agency that reported its total annual website management cost as less than \$300 000. A medium cost agency is defined as an agency that reported its total annual website management cost as between \$300 000 and \$1 million. A high cost agency is defined as an agency that reported its total annual website management cost was at least \$1 million.

firm website cost data.⁴² Based on estimates provided website costs across the 40 agencies ranged from \$10 000 for a small information-only website, to \$15 million per annum for an agency with one large site with significant transactions, while several other agencies had management costs in excess of \$1 million per annum. The ANAO noted there are other costs involved in using websites, such as in the development and administration of content.

3.40 This limited information on the total cost of websites pointed to how only a small number of agencies monitored their website costs, and compared them with the costs of other service delivery channels.

Figure 3.7

Average of total website costs as a percentage of total ICT costs by agency group for 2005–06 and 2006–07



3.41 Figure 3.7 shows:

- the average of website costs as a share of total ICT costs for each agency group that provided sufficient information:⁴³
 - website costs averaged 8.1 per cent of total ICT costs in 2005–06, falling slightly to 7.3 per cent in 2006–07;
 - for low cost agencies, website costs averaged 6.7 per cent of total ICT costs in 2005–06, falling to 5.3 per cent in 2006–07;
 - for medium cost agencies, website costs averaged 7.4 per cent of total ICT costs in 2005–06, declining to 6.5 per cent in 2006–07; and

⁴² Website costs include all hardware, software and staff costs for website development, operation, maintenance, gateway, and decommissioning.

⁴³ 28 agencies provided sufficient information for this calculation for 2005–06 and 29 agencies for 2006–07.

- for high cost agencies, websites costs as a share of total ICT costs averaged 10.2 per cent in both 2005–06 and 2006–07.

3.42 Survey data for the 35 agencies that provided the information showed total expenditure on websites was \$51.5 million in 2005–06 and \$55 million in 2006–07. This represents an increase of approximately six per cent. In addition, the survey results for these agencies showed that website costs averaged over seven per cent of total ICT expenditure.

Agency reporting on website performance

3.43 Effective reporting of website performance allows agency staff and executives to make informed decisions regarding website management even if they are not experts in the operations of the websites. It also allows agencies to effectively assess the performance of the channel.

3.44 The ANAO examined website reporting to management for the five sites.

Figure 3.8

Assessment of agency website performance reporting

Website reporting	Comprehensive			1 site
	Moderate		2 sites	
	Minor		2 sites	
	None			
		Low	Moderate	Significant
Assessment of website risk to agency service delivery				

3.45 Figure 3.8 shows that the performance reports prepared on the five websites varied in quality and content. The agency managing the website categorised as being of significant risk to service delivery prepared detailed reports on website performance. One such report, prepared on a quarterly basis, covered:

- key satisfaction measures such as content, visual presentation, structure, search functionality, and navigation;
- summary of the quarter including changes from the previous quarter, product releases, and media coverage;

- other key measures such as top query topics and top google search terms;
- customer feedback from completing the online comment form; and
- other research conducted by an external organisation relating to availability and quality of the website.

3.46 The three agencies reported on website performance to their executive using raw user activity data, with little explanation as to what the data meant. Also, none of the audited agencies reported specifically on how their websites were meeting their respective purposes and how they were contributing to agency business goals. Also, one agency, managing a website that provides large amounts of information for public use, reported only on page views and most downloaded pages to the executive with little explanation of what it meant. The case study below illustrates this agency's use of raw website user activity data with little explanation of the user activity data.

Use of website hits as a performance measure

An agency which relied heavily on its website to provide information to users had three key performance measures to assess website performance. One of its key performance measures was website hits.

Website hits refer to the number of times all website files (including images) have been viewed, and each hit is a single entry on a server log file. A single web page could include 50 files (1 html file, 49 graphic files) and generate 50 hits.⁴⁴

The agency recorded the number of website hits it receives each week and provided this information to the secretary of the agency on a monthly basis. Over two years the data showed a steady increase in the number of hits on its website. This website hit information was not accompanied by an explanation or analysis. Did an increase in the number of website hits mean an improvement in the success of the website as a mechanism to provide information to users?

If website hits are used as a measure of website performance, statistics should be accompanied by an explanation of potential causes for increases and decreases in hits. The reason for this is that increases in website hits may:

- not represent an increase in the number of visitors to the website. For example, if an agency increased the amount of graphics or other files on its website homepage it would receive more hits, even if the number of users visiting the site remained the same over time; and
- be an indication of a poorly functioning website. If it is difficult to find

⁴⁴ AGIMO Better Practice Checklist, 11 *Website Usage Monitoring and Evaluation*, version 1, p. 8, Canberra, 2004. Available at <<http://www.finance.gov.au/e-government/better-practice-and-collaboration/better-practice-checklists/website-monitoring.html>>. Last accessed 4 December 2008.

information on a website, users may access several pages that are not relevant to their information search. This increases the number of website hits.

For the website hit data provided to the agency's staff and executives to be meaningful, ideally the agency would investigate the reasons behind variations in the data. Without this analysis, the raw website hit data is not a useful measure of the effectiveness of the website, and can be potentially misleading.

Consequently, agency staff and executives were not advised on whether the increase in hits was an improvement in the success of the website as a mechanism to provide information to users, or a measure of an ill-designed site.

3.47 This case study shows that collecting website user activity data and reporting it as collected provides limited benefits. It would be more beneficial to analyse data to understand what factors influenced users.

3.48 The other website, a small transactional site, important to its target audience, reported information on manual versus electronic lodgement of applications, on a weekly and annual basis. It would be beneficial for these two agencies to better analyse the website information they collect and present it in a way that will assist management to identify weaknesses or risks, make decisions, and improve service delivery.

3.49 In addition, one of the agencies had developed a website performance measurement framework, although it was in draft format and not complete at the time of the audit. This framework outlined measures to be used, their objectives, sources, and key performance indicators. Also, one of the agency's reporting of website performance contained mainly raw user activity data encompassing numbers of hits, website pages viewed, top pages viewed, and file downloads, with little interpretation of the results.

3.50 The consequence of poor performance reporting for websites that are significant to service delivery or agencies with multiple websites is that agencies will not fully understand how their sites are meeting their purposes, achieving their program outcomes, and meeting user needs.

Survey results

3.51 The survey identified that several of the surveyed agencies that had significant or multiple websites did not report website performance to their Chief Information Officer or Executive.

3.52 As websites are now an integral component of program delivery for most agencies, particularly for agencies with significant or multiple websites, it

is advisable that agency executives understand how their websites are performing, and how they contribute agency outcomes.

3.53 In complete reporting of website user activity and satisfaction data increases the risk that where changes are required to improve website service delivery they are neither made nor implemented in an effective manner. This could lead to unsatisfied users seeking services through another means, such as counter service, or ignoring the agency's services.

Recommendation No.4

3.54 To assist agencies manage the costs of multiple or large websites that are integral to an agency's service delivery, the ANAO recommends agencies periodically monitor and report on website costs, and, in the context of program performance compare website costs against other service delivery channels.

Agencies' responses

3.55 Each of the audited agencies and AGIMO agreed with the recommendation.

Australian Bureau of Statistics

3.56 As a strategic information asset ABS ensures that website costs are monitored and reported and that investment plans are aligned with ABS strategic directions in relation to dissemination. ABS has recently invested in enhanced website analytic software which when implemented will provide a greater level of detail on who is using the website, how customers navigate the site and how the site is being used. This information will be used to refine investment decisions and shape future developments for the ABS website.

Department of Foreign Affairs and Trade

3.57 The department has two websites which are integral to service delivery – namely for passports and consular services (Smartraveller). Both the Australian Passports Office and CPD will assess and report on website costs against costs of other service delivery modes.

3.58 Finance supports this recommendation, but considers that it should apply to all agency websites, not only those that are deemed to be large or integral to service delivery. It is also noted that the recent Gershon Review of ICT Expenditure within FMA agencies found a wide variation in the reported cost of websites across agencies.



Ian McPhee
Auditor-General

Canberra ACT
16 December 2008

Appendices

Appendix 1: Agencies' responses

This Appendix contains general comments received on the audit report that are not shown in the body of the report.

Each of the agencies selected for the audit and AGIMO were provided with the opportunity to comment on the proposed audit report in accordance with the provisions of section 19 of the *Auditor General Act 1997*.

Agencies' responses to the recommendation have been included in the main body of the report under the subheading 'Agencies' responses' directly following the recommendation.

General responses are reproduced below.

ABS advised as follows:

The ABS agrees with the findings of the ANAO report into Management of Government Agencies websites. As the primary dissemination channel for ABS publications, continued development of the website is integral to the ABS's mission to support informed decisions through the provision of high quality statistical outputs. The ANAO audit findings provide a solid governance framework for managing agency websites and the ABS has undertaken a review of existing governance strategies to ensure that best practices outlined in the ANAO report are captured and implemented.

DAFF advised as follows:

The Department of Agriculture, Fisheries and Forestry welcomed the opportunity to participate in the audit into *Government Agencies' Management of the Websites*. The department notes the views formed by the ANAO and agrees with its recommendations.

DFAT advised as follows:

The Department of Foreign Affairs and Trade (DFAT) welcomes the ANAO's report of its performance audit into *Government Agencies' Management of their Websites*. DFAT agrees with the main conclusions of the report. An important challenge for DFAT is to manage the risks associated with the substantial growth in website content in recent years – including the need to ensure that material is accurate and up-to-date. DFAT hosts some websites which are important to service delivery and note that some of the report's recommendations are targeted at such websites.

DFAT accepts each of the ANAO's recommendations.

The department is currently in the process of reviewing its website goals and practices, and is developing a DFAT Website Strategic Plan to provide a comprehensive framework for their management and operation.

The management of website content to ensure it is accurate and up-to-date is a fundamental requirement of sound website management. DFAT proposes to formalise improved management and control of website content through the adoption of a Website Publishing Style Guide and supporting policies and procedures. The department will encourage greater responsibility by line areas in reviewing their web content.

DFAT will attach greater importance to the monitoring and reporting of website costs. It considers that the internet represents a cost-effective means of contributing to its goals, particularly given its websites are mostly devoted to the provision of information.

In implementing the ANAO's recommendations DFAT proposes to complement the proposed DFAT Website Strategic Plan and Website Publishing Style Guide with other website policy and administrative initiatives, including an audit and review of website content, and better defining roles and responsibilities within the department for improved website governance and operations.

AGIMO advised as follows:

Finance notes the two previous ANAO audit reports (No. 26, 2004-2005 Performance Audit - Measuring the Efficiency and Effectiveness of E-Government and No 30, 2003-2004 Quality Internet Services for Government Clients – Monitoring and Evaluation by Government Agencies) made findings and recommendations similar to those in this audit report in respect to website evaluation, monitoring and the use of website metrics, website objectives and planning. This suggests that these issues have not been addressed appropriately by many agencies and that they remain problematic.

While Finance, through AGIMO, has endeavoured to promote best practice, in the management of agency websites, with the Web Publishing Guide and Better Practice Checklists, it appears that a concerted whole of government effort is required to resolve these problems. Such an approach may depend on stronger governance arrangements for website management best practice and guidance. The Gershon Review has proposed a stronger "opt-out" governance

approach for whole of government approaches, which could be applied to the management of government websites.

Appendix 2: Government information and communications technology policy

The Australian Government has been developing and revising ICT policy relevant to agencies' website management since 1997. This policy documentation includes:

- *Investing for Growth, the Howard Government's Plan for Australian Industry*, 1997,
<http://pandora.nla.gov.au/pan/32884/20080307-0000/backingaus.innovation.gov.au/docs/statement/invest_growth.pdf>;
- *Government Online – The Commonwealth Government's Strategy*, AGIMO, April 2000, Federal Government,
<<http://pandora.nla.gov.au/pan/30556/20020831-0000/govonlin/projects/strategy/GovOnlin.htm>>;
- *Better Services, Better Government – The Federal Government's E-government Strategy*, National Office for the Information Economy, November 2002,
<http://pandora.nla.gov.au/pan/32511/20021216-0000/www.noie.gov.au/publications/NOIE/better_services-better_gov/index.htm>;
- *Australia's Strategic Framework for the Information Economy 2004-06 – Opportunities and Challenges for the Information Age*, Department of Communications, Information Technology and the Arts, July 2004.
<http://www.dbcde.gov.au/data/assets/pdf_file/0018/20457/New_SFI_E_July_2004_final.pdf>;
- *Responsive Government A New Service Agenda 2006 e-Government Strategy*, AGIMO, March 2006,
<<http://www.finance.gov.au/publications/2006-e-government-strategy/index.html>>; and
- Defence Signals Directorate – *Australian Government Information and Communications Technology Security Manual – ACSI33*, Department of Defence – Intelligence, Security, and International Policy, September 2007, <<http://www.dsd.gov.au/library/infosec/acsi33.html>>.

Appendix 3: ANAO's reports and publications on Internet use

This audit is one of a series of audits and other ANAO publications into Internet related activity commencing from 2001. These audits and other publications are:

- ANAO Audit Report No. 39, 2007–2008, *Managing e-Business Applications – A Follow-up Audit*;
- ANAO Audit Report No. 45, 2005–2006, *Internet Security in Australian Government Agencies*;
- ANAO Audit Report No. 23, 2005–2006, *ICT Security Management*;
- ANAO Audit report No. 26, 2004–2005, *Measuring the Efficiency and Effectiveness of E-Government*;
- ANAO Audit Report No. 30, 2003–2004, *Quality Internet Services for Government Clients – Monitoring and Evaluation by Government Agencies*;
- ANAO Audit Report No. 33, 2002–03, *Management of e-business in the Department of Education, Science and Training*;
- ANAO Audit Report No. 13, 2001–2002, *Internet Security within Commonwealth Government Agencies*; and
- ANAO Better Practice Guide, April 2001, *Internet Delivery Decisions: A Government Program Manager's Guide*.

Appendix 4: Agencies surveyed⁴⁵

Agency Name	Agency Name
Department of Agriculture, Fisheries and Forestry	Australian Centre for International Agricultural Research
Department of Communications, Information Technology and the Arts	Australian Communications and Media Authority
Department of Defence	Australian Crime Commission
Department of Education, Science and Training	Australian Prudential Regulation Authority
Department of Employment and Workplace Relations	Australian Taxation Office
Department of Environment and Water Resources	Australian Trade Commission
Department of Families, Community Services and Indigenous Affairs	Centrelink
Department of Finance and Administration	Comsuper
Department of Foreign Affairs and Trade	Crimtrac
Department of Health and Ageing	Family Court of Australia
Department of Human Services	Federal Court of Australia
Department of Immigration and Citizenship	Geoscience Australia
Department of the Prime Minister and Cabinet	National Blood Authority
Department of Transport and Regional Services	National Competition Council
Department of the Treasury	National Offshore Petroleum Safety Authority
Department of Veterans' Affairs	Office of the Commonwealth Ombudsman
Administrative Appeals Tribunal	Productivity Commission
Attorney-General's Department	Refugee Review Tribunal
Australian Bureau of Meteorology	Royal Australian Mint
Australian Bureau of Statistics	Therapeutic Goods Administration

⁴⁵ The survey was sent to agencies in November 2007 before the Federal Government Election. The agency names listed are prior to the November 2007 election.

Appendix 5: Chapter 2 survey results

Website purpose

The survey sought advice from the agencies on two matters for each agency's main website:

- to indicate if there was a document setting out the purpose of the website and whether the purpose had been achieved; and if so,
- to identify an purpose from the following options:
 - reduced operating costs;
 - increased awareness of the agency's services;
 - increased service levels for customers; and/or
 - increased access to agency services.

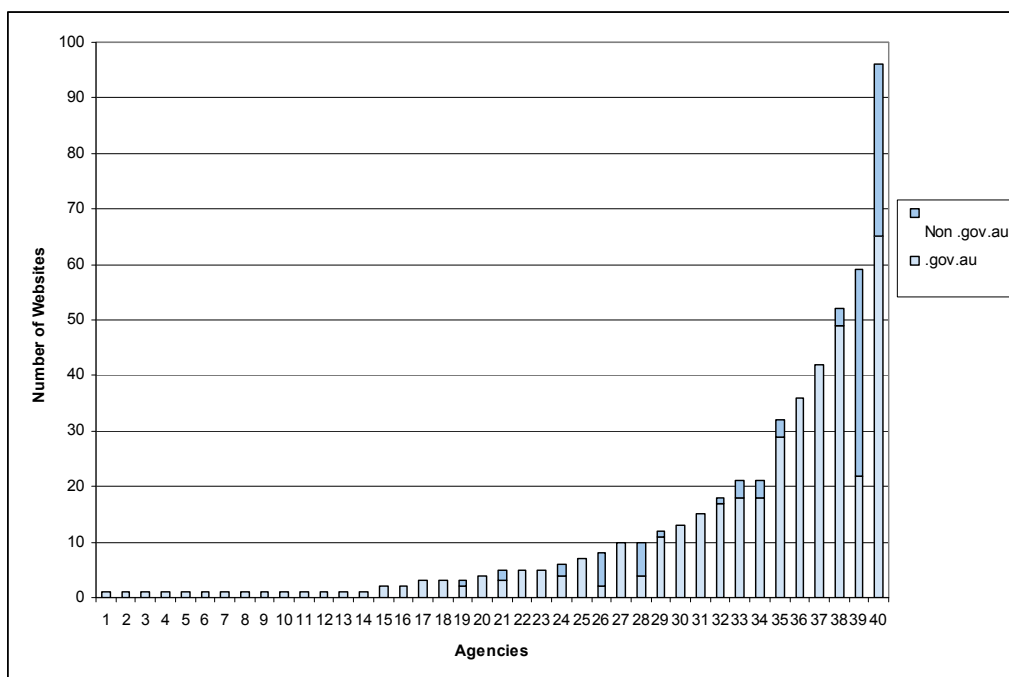
The results for the main websites of the agencies surveyed showed that:

- 10 of the 40 agencies indicated they did not document their purpose;
- 27 of the 40 agencies advised they had achieved their website purpose; and
- 27 of the 40 agencies advised that their main website purpose was to increase awareness of agency services. One agency reported that the main purpose of its website was to reduce operating costs.

Website planning

The survey also sought advice from the agencies on how many websites they had, how many had a .gov.au and non .gov.au domain names. The following figure shows the spread of websites across the 40 agencies from least to most.

Agency .gov.au and non .gov.au websites



Website policy

The survey sought information from the agencies on whether their documented website management policy aligned with the Government's four ICT policy priorities, meeting users' needs, establishing connected service delivery, achieving value for money, and enhancing public sector capability.

Only 21 of the forty agencies responded to the question on aligning their website policy with the Government's four ICT policy priorities. The results of the survey showed:

- 18 agencies reported their website policy aligned with the activity 'Meeting users' needs';
- 10 agencies reported their website policy aligned with the activity 'Establishing connected service delivery';
- 16 agencies reported their website policy aligned with the activity 'Achieving value for money'; and
- 15 agencies reported their website policy aligned with the activity 'Enhancing public sector capability'.

Appendix 6: Features of sound content management

Better practice features of website content management identified during the examination of agency websites are shown below:

Reference	Description
High quality process documentation	<p>Descriptions and diagrams of website content management processes that identify:</p> <ul style="list-style-type: none"> • roles and responsibilities of agency areas and staff; • system software for processing content; • approvals and delegations; and • connections between the steps above.
Detailed and comprehensive procedures documentation	Detailed procedures documentation for each agency area, person, and system/software. This should link to the process documentation descriptions discussed above.
Processes and procedures for staff who use that documentation	Documentation for relevant staff. For example, where content is drafted by a non-ICT technical staff member, documentation will be in lay-person's terms, while documentation for ICT staff can be technical and detailed.
Sound documentation management practices	A logical approach to managing and storing website change management documentation that allows staff to access this documentation easily.
The use of specialist software to manage website content	<p>Specialist software provides agencies with greater control over managing website content. This includes:</p> <ul style="list-style-type: none"> • content approval processes that prevent unapproved material from being published; • the ability to identify the staff member responsible for changes and amendments to content; and • archiving that allows agencies to 'restore' earlier versions of the website if required.
Well documented website content changes and approvals process	<p>Where it is not cost effective to introduce a specialist system, archiving processes that document all changes to content and approvals processes provide assurance that inaccurate or untimely information is not released.</p> <p>A sound process generally contains:</p> <ul style="list-style-type: none"> • a standardised content change request form; • a comprehensive description of the content change; • signatures of authorising officers; and • a system that stores approvals documentation.

Index

A

ABS, 6, 26, 28, 33, 41, 44, 57, 73, 77
AGIMO, 6, 11–12, 23–24, 29, 40, 46,
47, 49, 59, 62, 65, 71, 77–78, 80

C

Channel, 6
CIO, 6, 18
content management, 13–17, 30–31,
38, 41, 48–49, 51–57, 85
cost, 11, 15, 18, 25, 28, 36, 39–40, 46,
66–70, 85

D

DAFF, 6, 33
DFAT, 6, 33, 77
Domain, 6, 24, 46–47

E

Evaluating, 62

G

grants, 89

H

Home page, 6

I

ICT, 6, 12–13, 15, 18, 25, 29–30, 35,
38, 51–52, 54, 66–67, 69–70,
80–81, 84–85

M

Main website, 7
Monitoring, 40, 59, 62, 65–66, 71, 81

P

planning, 13, 17, 30–31, 35, 38, 44–48,
83
policy, 12, 16, 26, 29–30, 33, 46–49,
80, 84

R

reporting, 12–13, 16–17, 30, 35, 58,
70, 72–73
review, 12, 15, 20, 27, 29–30, 33, 35,
40–42, 49, 51, 57, 62, 66, 77
risk management, 13–16, 20, 30–31,
35, 38, 41–44, 48, 58

S

Server, 7
survey, 13–14, 16, 18, 20, 27–28, 32,
38, 40, 43, 45–46, 48–49, 54, 70,
72, 82–84

U

User, 7

W

Web content, 7
Web page, 7
Website, 7, 16–17, 33, 36, 38, 40–41,
44, 47, 49, 58–59, 61–62, 65, 69,
71, 83–84

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