

# **Auditor-General's Report**

**Performance Audit**

**e-government**

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**User-friendliness of Websites**

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# **Executive Summary**

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**Why examine website user-friendliness?**

Electronic Service Delivery (ESD) is a major priority in the NSW Government's e-government strategy. ESD is about delivering better, faster, more accurate, up-to-date and cheaper services to the community through the use of electronic technologies, mostly through websites.

Citizens and business will only be encouraged to use websites if they are easy to access; information on them is current, accurate and reliable; and they are easy to navigate. The potential benefits of ESD will not be realised if government websites are not 'user-friendly'.

**The Audit**

This audit used experts in communication and website design from the University of Technology Sydney (UTS) to assess the 'user-friendliness' of nine NSW Government websites.

The audit did not assess in detail what subject content or services should be provided by the sites. Sites were selected by UTS, in consultation with the Audit Office, to provide a cross-section of agency types and sizes, range of services, and user groups.

The UTS assessment is reproduced in its entirety as Part 2 of this report, including the 'Evaluation Work Sheet' which sets out a detailed set of criteria by which website user-friendliness can be assessed. This methodology is now available for others to use.

**Audit Opinion**

**The content of the websites evaluated in this audit was generally relevant and suitable, but their user-friendliness varied greatly. The audit's criteria were intended to represent minimum standards only, not best practice. So the extent to which any general deficiencies were apparent in this sample should be examined for Government websites generally.**

**Of the sites examined, users would find that some offered a pleasant and productive experience. Using others would be onerous and frustrating. Some users would not be able in practice to access features on some sites. All sites, even the best, had aspects warranting better attention to users' needs. The failure of some sites to provide important information about privacy, security and legal matters was of particular concern.**

**For the sites evaluated there was little use of the web to foster two-way communication between the public and agencies on issues of concern or as part of the policy process. And it seems that consultation with users on site design is not always sufficiently undertaken. A website is more likely to be user-friendly if design is based on thorough consultation with users.**

## Key Findings

Better aspects of the sites evaluated included:

- relevance of site content
- currency and accuracy of the information provided
- transactions (where provided)
- accessibility to sites at most times, using main search tools and with acceptable response speeds
- organisation of content logically and around user needs
- links to help users find information on the site and elsewhere.

Aspects generally requiring attention included:

- helping users to establish quickly website purpose and how to use the site effectively
- providing legal information necessary for users to understand the consequences of using the site
- facilitating two-way communication between the public and government agencies
- catering for people with a disability, from a non-English speaking background or with access to less advanced technologies
- using metadata and metatags to increase the likelihood that users of search engines can readily find the information they seek
- providing good on-site search engines and help to use them.

While the evaluation results should not be extrapolated to all NSW Government websites, they point to areas where improvement may be required.

The Office of Information Technology (OIT) is running a *Website Quality Program* with a particular focus on supporting agencies in meeting quality standards for Internet service delivery. The Program will:

- review the NSW Government Internet guideline
- establish performance indicators
- review selected agency websites
- provide support and training to agencies as appropriate.

**Comments from  
the agencies tested**

Results of website tests were provided to the responsible agencies. Agencies were given the opportunity to provide feedback and to correct any errors which they could substantiate.

A number of agencies indicated that their website had been modified since the time it was tested by the audit, which would address some of the site-specific findings cited in this report. Others indicated that they were in the process of modifying their website.

Several agencies indicated they would consider the audit findings in reviewing the usability and accessibility of their website.



## **Recommendation**

**The Department of Information Technology and Management (DITM) and the Chief Executive Officers' e-Government Committee should further promote the adoption of better practices in developing and designing websites to effectively meet the needs of users.**

Emphasis should be placed on:

- thorough and systematic consultation with current and potential users
- assisting agencies to assess the 'user-friendliness' of their websites
- effectively communicating to users important legal information about privacy, copyright, conditions of site use and security.



# 1. Introduction

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**The Audit Office has targeted e-government for ongoing examination.**

The Audit Office has targeted e-government as a theme area for ongoing examination, with a series of performance audits.

The Office has produced a major performance audit report on e-government in NSW,<sup>1</sup> and a companion better practice guide.<sup>2</sup>

A number of other audits have also examined technology related issues such as:

- the NSW Government Property Register database
- intellectual property
- sharing of data between agencies in land tax administration
- use of computers in schools for teaching and learning
- implementation of computer aided dispatch systems for Police and ambulance response
- communication systems integration in bushfire fighting operations.

**This is the latest audit in the series.**

This audit of the *User-friendliness of Websites* is our latest audit on e-government in NSW. Further topic or agency-specific audits will inquire into particular applications of e-government, including a major audit on e-procurement in NSW Health.

The Audit Office's ongoing work on e-government can be viewed on our web site at [www.audit.nsw.gov.au](http://www.audit.nsw.gov.au).

**Acknowledgements**

The audit acknowledges the contributions of:

- Jan Houghton, Sue Burgess and staff from the University of Technology, Sydney, in conducting the evaluation of selected NSW Government websites
- ICAC for assistance with the case study
- the Department of Information Technology and Management and the nine individual agencies in providing prompt and constructive feedback.

**Staff**

The team comprised Rod Longford (project manager) and Stephen Horne (Director).

**Cost**

The estimated cost of this audit was \$83,237, including an allowance of \$5,000 for printing.

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<sup>1</sup> E-government – Use of the Internet and related technologies to improve public sector performance, September 2001, available at [www.audit.nsw.gov.au](http://www.audit.nsw.gov.au).

<sup>2</sup> e-ready, e-steady, e-government – a readiness assessment guide for government agencies, September 2001, available at [www.audit.nsw.gov.au](http://www.audit.nsw.gov.au).

## **2. What makes a good website?**

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## 2.1 ESD and the need for user-focus

### **Electronic Service Delivery (ESD) is a Government priority.**

Electronic Service Delivery (ESD) is about delivering better, faster, more accurate, up-to-date and cheaper services to the community through the use of electronic technologies. ESD is a priority for the NSW Government.

Websites are the point of access for most ESD initiatives.

### **Websites are important to ESD ...**

The effectiveness of ESD as a means of delivering services to the community depends on what websites offer in terms of information, interaction and transactions. But it also depends on how 'user-friendly' websites are. The potential benefits of ESD will not be realised if users do not want to use government websites. As put by the UK National Audit Office's Director of Modern Government Work:

Citizens and business will only be encouraged to use departments' and agencies' websites if they find them easy to access, information provided is up to date, accurate and reliable and if websites are easy to navigate.<sup>3</sup>

### **... and there is consensus on the importance of focusing on the needs of users.**

The NSW OIT's *Providing Information and Services Using the Internet: A Guideline for NSW Government Agencies* stresses the importance of focusing on the needs of users:

Users' needs have to be identified and defined from *their* point of view. Getting this perspective right, and incorporating the users' perspective at the beginning of the web development process, is one of the most important aspects of making your information and services accessible and useful.<sup>4</sup>

The UK Government's guideline for government websites states that:

... public sector websites must be designed with the end-user in mind, in a style that is readable to as wide a section of users as possible. The aim is to be inclusive bearing in mind the wide range of users' circumstances and technical knowledge.

It is essential that websites are designed to be open and not to disenfranchise sectors of the population.<sup>5</sup>

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<sup>3</sup> UK National Audit Office, *Focus*, Issue 9, November 2000, p18.

<sup>4</sup> NSW Office of Information Technology, *Providing Information and Services Using the Internet: A Guideline for NSW Government Agencies*, p6.

<sup>5</sup> UK Government, Central Information Technology Unit, *Framework for Information Age Government: Websites*, p32.

The web-based *e-government bulletin*, in its *Tips for a successful website*, stresses a user focus – not an organisational focus:

Bear in mind exactly who the different types of people will be using the site, what their main purposes are and what types of information they will find the most useful. Then structure the site around them.

It is NOT generally advisable to group information in sections corresponding merely to the different sections or departments in your organisation – such a ‘corporate focus’ is of little use to members of the public who should not be expected to know how your organisation is structured in order to find information of use to them.<sup>6</sup>

## 2.2 Evaluation of selected NSW Government websites

**A range of sites was examined by experts in communication and website design ...**

To assist with this audit, the Audit Office of NSW used the services of Ms Jan Houghton and Ms Sue Burgess of the Information Program, Faculty of Humanities and Social Sciences, University of Technology, Sydney. Both have substantial academic standing in the field of website design and evaluation from a user perspective, and have published on the subject.

Ms Houghton and Ms Burgess developed the evaluation methodology based on leading research and NSW and Commonwealth government guidelines. They then used the methodology to assess the ‘user-friendliness’ of nine NSW Government websites. The sites examined were:

- the Australian Museum
- the Audit Office
- Births, Deaths and Marriages
- CityRail
- the Department of Education and Training
- the Department of Planning
- the Department of Public Works and Services
- Small Business, NSW
- Sydney Water.

These websites were selected to give an interesting cross-section of agency types and sizes, range of services, and of user groups.

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<sup>6</sup> [www.headstar.com/egb/tips.html](http://www.headstar.com/egb/tips.html)

**... but from the perspective of typical users.**

The researchers tested the sites from their own computers. The idea was to simulate the situation users experienced. This even extended to anonymously e-mailing enquiries and purchasing from sites.

Quality control mechanisms were applied to ensure accuracy and consistency in the application of the methodology. These included cross-comparisons between reviewers and application of the methodology to three interstate government websites.

The website examination considered each site as a stand-alone, and it did not extend to consideration of the NSW Government portal, [www.nsw.gov.au](http://www.nsw.gov.au).

**The methodology for assessing website user-friendliness is available for general use.**

The UTS assessment is reproduced in its entirety as Part 2 of this report, including the 'Evaluation Work Sheet' which sets out a detailed set of criteria by which website user-friendliness can be assessed. This methodology is now available for others to use.

Part 2 also includes a detailed description of how the methodology was developed, tested and applied.

## **2.3 Summary of key findings**

The key findings of the audit are summarised below.

### **2.3.1 Openness**

Openness refers to the extent to which a website provides comprehensive and reliable information and opportunities for interaction between agencies and their users.

**Orienting the user to the site was generally not well done.**

#### *Orientation*

Three of the nine sites:

- clearly conveyed their purpose and target audience
- provided initial help and instructional facilities.

Without such information, a site user would have difficulties in quickly establishing the site's purpose, intended audience and how information and services can be best accessed.

Some necessary information about privacy, copyright/conditions of use or security was missing in five of the nine sites.



**Coverage was reasonable ...**

*Coverage*

The content of eight of the nine sites was generally suitable for their (assumed) purpose and users.

Most sites had much of the content recommended by the Office of Information Technology. Some sites had considerably more information and services. Provision of full text information was good for eight of the nine sites.

Two of the nine sites provided information in community languages. Failure to provide information in community languages creates barriers to people from non-English speaking backgrounds accessing ESD.

Generally, coverage of current and controversial matters of interest was limited.

The choice of alternative formats to aid accessibility was also limited. This may create difficulties for people with older or basic computing equipment.

**... as was currency and accuracy ...**

*Currency and accuracy*

Performance was generally poor in indicating responsibility for particular pages of content and when content was last reviewed. These are important for users trying to assess the 'reliability' of information. Only one site noted review dates consistently on its pages.

However, content was assessed as being up-to-date and relevant for all sites.

All sites performed well on lack of spelling mistakes. All sites provided a link to the web manager for feedback.

**... and interactivity.**

*Interactivity*

All provided some form of email enquiry service. Generally, however, there was very little indication about turnaround times or limitations of the service. This is particularly important for users requiring information urgently or by a specific date. Four sites provided communication services beyond email.

No site provided opportunities for public discussion (either real time or message board) of policies or issues.

Transactions were provided on seven of the nine selected sites. The sites offered a broad range of transactions. Four of the sites allowed products to be ordered or bills paid. Many sites enabled submission of forms and registering for update services. Eight of the nine provided searchable databases.

### 2.3.2 Accessibility

Accessibility refers to the extent to which the site and its contents are available to a wide range of users with varying levels of skill and technology.

**Accessibility to sites was one of the high points ...**

#### *Accessibility to sites*

Speed of access to sites was satisfactory for eight of the nine sites, and all sites were available most of the time. Generally, sites could be easily found using the main search tools, including *Service NSW* (the NSW Government's website).

Three of the nine sites did not have any backlink to *Service NSW*. Three more only had a backlink through their parent agency. This reduces the ability of users to find relevant government information across different government agencies.

**... but accessibility to site content was not.**

#### *Accessibility to site contents*

Seven of the nine sites were compatible with mainstream web-browsers.

Seven of the nine sites could not be used properly with the graphics turned off. Three of the five sites which used higher-level technology did not provide adequate alternatives. Six of the nine sites would provide printing problems for some users. One site met the evaluation's criterion (level 1 'Bobby' approval – see part two for explanation) for accessibility to people with disabilities.

Users with less advanced technologies and people with disabilities may find accessing ESD difficult on several of the sites tested. Some users could not access the content on some sites.

### 2.3.3 Usability

Usability refers to the ease with which users can navigate their way around the site and find information or services.

#### *Links*

**The provision of links was satisfactory overall, but highly variable.**

Seven of the nine sites provided a link from the home page to new information, and six provided shortcut links for frequent users. This makes it easier for users to access services and information.

Descriptive information to enable users to decide whether to follow a link or not was satisfactory overall, but highly variable between sites. Without good descriptive information, users may go to irrelevant areas, which can be time-consuming especially for those with older or basic computing equipment.

All sites provided relevant external links. Some were a great deal more extensive than others.

**Design and architecture was very good.**

#### *Design and architecture*

Content was generally organised around users' needs. There were some outstanding examples of organisation around user needs. Format and graphic design were generally appropriate and consistent. Pages were generally appropriate in length and clearly laid out.

**Most sites did not adequately provide the information needed for efficient and effective searches.**

#### *Metadata*

Metatags and metadata provide the information needed for search engines to locate websites and web pages that match search criteria. They provide information about the information in websites and web pages and help people to find an information source.

Only three of the nine sites were rated as satisfactory or better in providing appropriate metatags and metadata. This means that people using search engines may have difficulty in finding information on six of the nine sites.

**Navigability was reasonable overall, but variable.**

#### *Navigability*

Navigation performance was variable. Six sites were satisfactory or better in keeping users aware of their location on the site. Two were very good. Three used few of the conventional navigation models. Essential navigation features were missing in some pages on many sites.

**Browsing was satisfactory on most sites, but search engines were a low point.**

Facilitation of browsing was satisfactory in six of the nine sites. Four of the nine sites did not provide search engines. Two of the five search engines performed adequately. Search engine help was not satisfactory on any of the sites.

**Users need to be consulted, usage monitored, and sites modified in response.**

## **2.4 Developing your website from a user's perspective**

The NSW OIT's *Providing Information and Services Using the Internet: A Guideline for NSW Government Agencies* highlights the importance of involving users in developing the website:

To identify your users' needs, you need to involve the full range of people who will use your website.

The key to working out how to structure your information and services is customer focus – envisaging your customer's requirements from their point of view, and structuring information according to their needs and enquiries.

Designing your website information architecture should be informed by your users' information requirements and by the way they use the information or services.

Monitoring your website and the Internet is a key aspect of ongoing website management. A major difference that distinguishes successful websites from others is the degree to which they are monitored and modified to meet changing customer needs.

Similarly, the UK Government's guideline for government websites lists among the key strategic tasks for an agency:

- identification of the audience for the website, where possible on the basis of market research or dialogue with client groups
- understanding and responding to users' satisfaction with the site.<sup>7</sup>

The UK guideline also states that:

Department's and agencies should be aware of who the core and non-core audiences are for their sites. It is very likely that the audience for different parts of the site, or for different sites within a department's estate, will vary considerably. It is very desirable that, in planning sites, departments should carry out market research or other consultation with core and non-core audiences and that this should be repeated subsequently. It is especially desirable that designers and site managers should view sites alongside members of their core audience and be responsive to their comments.<sup>8</sup>

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<sup>7</sup> UK Government, Central Information Technology Unit, *Framework for Information Age Government: Websites*, p8.

<sup>8</sup> UK Government, Central Information Technology Unit, *Framework for Information Age Government: Websites*, p13.

The guideline also highlights the need to regularly monitor the use and performance of the website:

This information should be used to identify the most popular content, to review the navigation system (eg identifying orphaned pages), to review referring sites, to audit responses to web-inspired email and electronic forms and to assess the effectiveness of marketing/pr campaigns. The information is also likely to be useful as a source of information on server performance, the quantity of documents requested, visitors' electronic distribution, the number of visitors and the platforms which visitors use, including browsers and screen resolution.<sup>9</sup>

## 2.5 User-consultation – a case study

### **ICAC adopted a better practice process for user consultation.**

A good example of user consultation is the process recently adopted by ICAC to consult users in the upgrade of its website.

This is not a comment on the ICAC website itself, which was not tested in this audit. It is provided as an example of good practice in process design.

ICAC adopted a systematic and structured process for consulting users in the upgrade of its website. Key features included:

- the use of focus groups
- consultation on a prototype, and then on the site once upgraded, to assess how well user views had been captured
- obtaining both user comment and their performance on 'scenario-based' tasks.

This represents good practice in consulting users in the design of websites.

In late 1999, ICAC developed a prototype *Preventing Corruption* section of its Website.

In 2000, it engaged an external contractor to test the prototype with a range of public officials. Some had used the ICAC website, some had not. Focus groups were used to obtain comment.

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<sup>9</sup> UK Government, Central Information Technology Unit, *Framework for Information Age Government: Websites*, p10.

The focus groups indicated that some of the basic assumptions made about potential users' understanding of ICAC's role were incorrect. The prototype, while sound, was structured more from the perspective of ICAC than of potential users.

The feedback from the focus groups led to a redesign of the prototype.

When the *Preventing Corruption* section of the site was operational, ICAC embarked on a further round of user consultation (2001). ICAC sought an understanding of how well the needs of users identified in the first round had been met. Focus groups were used again. Comments were sought and participants were set information retrieval 'tasks' to test the site.

This 'real life' testing showed that users were impressed by the depth and breadth of the information on the site, but still had difficulties in finding information and relating it to their daily activities.

Management recently endorsed a number of further changes to the site to:

- improve navigability
- make case studies and examples more prominent
- simplify language
- remove redundant information
- replace and improve the search engine
- create a more integrated and professional design.

ICAC considers that the site will be far more user-friendly than it would have been without direct consultation with users and potential users. It believes this will assist greatly in promoting corruption prevention.

## 2.6 OIT Website Quality Program

**OIT is running a website quality program.**

The Office of Information Technology is running a *Website Quality Program* with a particular focus on supporting agencies in meeting quality standards for Internet service delivery. The Program will:

- review the NSW Government Internet guideline
- establish performance indicators
- review selected agency websites
- provide support and training to agencies as appropriate.

A series of training workshops were delivered by a web specialist throughout May 2002. Documentation, giving examples of best practice and advice on how to achieve best practice, was distributed to training participants and will also be made available on the OIT website. A guide to web usability and accessibility entitled *Improving Website Performance* has been developed to complement the OIT Internet Guideline, as a practical aid to support agencies in their website development.

## 2.7 Audit observations

**User-friendly websites are important to ESD.**

ESD is a priority for Government. The success of ESD will be strongly influenced by the user-friendliness of agency web-sites. NSW OIT and UK guidelines acknowledge this.

**The user-friendliness of the sites evaluated varied, and all could be improved.**

The user-friendliness of the websites evaluated for this audit varied greatly. Some were very good. But all had areas where greater attention to the needs of users would be beneficial.

**There were some common areas in need of attention.**

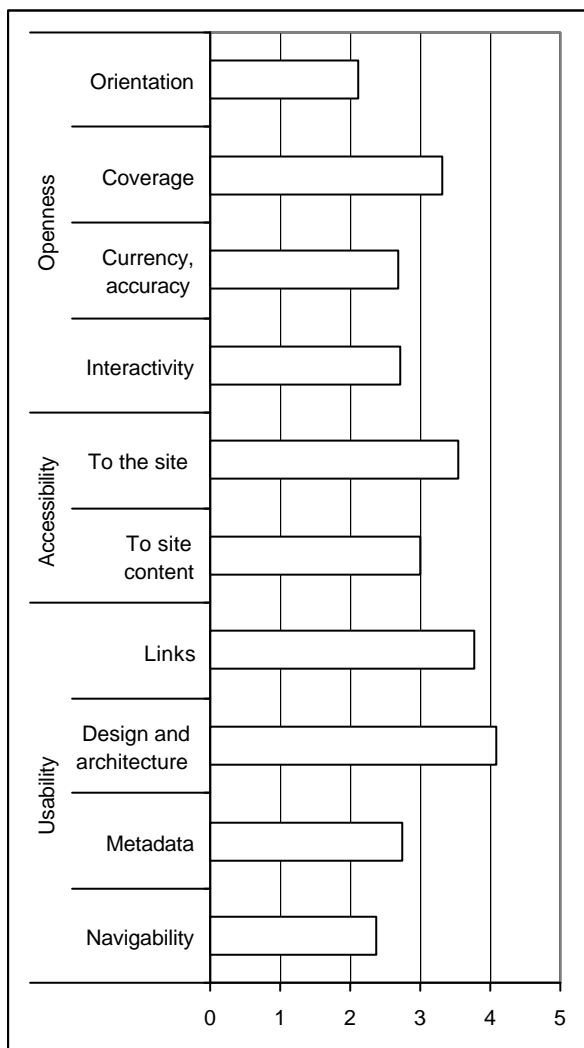
Users of the nine sites examined would find that content on the sites was generally relevant and suitable. However, they would find that using some sites was difficult, time consuming, potentially costly, and frustrating. Some users would not, in practice, be able to access the content and services of some of the sites.

Factors include:

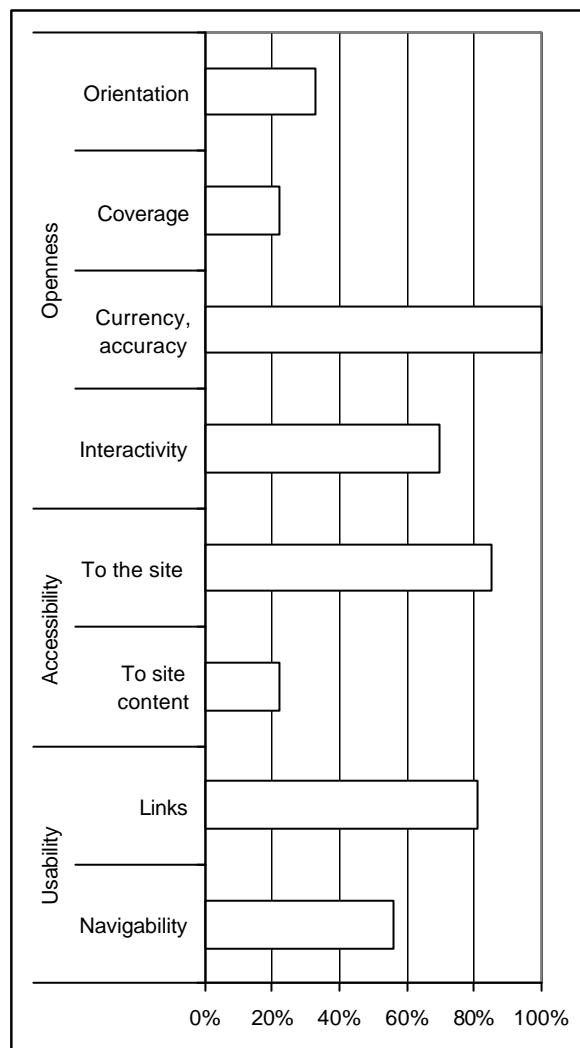
- failure of some sites to convey their purpose and target audience
- inadequacy of the help provided to users when accessing a site
- failure of some sites to cater adequately for people with a disability, from a non-English speaking background or with access to less advanced technologies
- failure to provide adequately the information needed for web search engines to locate sites and web pages
- failure to provide good search engines on sites and the inadequacy of help to use them.

### Summary assessment of website user-friendliness by criteria

Mean of those aspects rated on a scale of 0-5



Percentage 'yes' of those aspects rated as yes/no



**Note:** The above tables are derived from the UTS assessment in part 2 of this report. They are not offered as a statistical analysis, but as a simple visual indicator of the performance of the group as a whole in each of the broad criterion.



**Poor communication of the consequences of site usage was a particular concern.**

The Audit Office was also concerned at shortcomings of sites in providing information about privacy, security and other legal matters.

The audit's criteria were intended to represent minimum standards only, so the extent to which these are generally not met should be a matter for sector-wide improvement.

**Consultation with users is vital, but not always well done ...**

Consultation with users is vital, but not always sufficiently undertaken. A website is more likely to be user-friendly if design is informed by a systematic process of user consultation. Research and the ICAC case study support this.

**... and this should be a focus for OIT's Website Quality Program.**

The findings of this audit justify the OIT's *Website Quality Program* initiative. It is hoped that this Program will draw attention to the importance of developing websites with the needs of users in mind, and the value of consulting users to identify their needs.

## **Recommendation**

**The Department of Information Technology and Management (DITM) and the Chief Executive Officers' eGovernment Committee should further promote the adoption of better practices in developing and designing websites to effectively meet the needs of users.**

Emphasis should be placed on:

- thorough and systematic consultation with current and potential users
- assisting agencies to assess the 'user-friendliness' of their websites
- effectively communicating to users important legal information about privacy, copyright, conditions of site use and security.

The Audit Office also endorses the recommendations of the evaluation study conducted by UTS, and commends them to individual agencies and the Department of Information Technology and Management for incorporation in website improvement programs. The methodology developed to assess website user-friendliness may also be of assistance to agencies.



# Part 2

## **Evaluation of selected NSW Government Websites: A User Perspective**

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# **Evaluation of Selected NSW Government Web Sites: A User Perspective**

**Sue Burgess and Jan Houghton**

**Information Program  
Faculty of Humanities and Social Sciences  
University of Technology Sydney  
May, 2002**

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## **Acknowledgements**

The authors of this report would like to acknowledge the valuable contribution made to this project by the web site evaluators, Susan Edwards and Vivienne Caldwell. Susan is an Honorary Research Associate in the Faculty of Humanities and Social Sciences at the University of Technology, Sydney and Vivienne is a graduate of the Graduate Diploma in Electronic Information Management program at UTS.

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## 1.0 INTRODUCTION

### 1.1 Background to the project

The development of e-government in New South Wales is a major policy initiative involving a range of strategies including the use of government web sites for informational and transactional services. The New South Wales Government's *Information Management and Technology Blueprint* released in 1997 set out the government's vision for using online technology for more efficient and effective service delivery. The strategy which followed, espoused in the report entitled *An internet strategy for NSW: connect.nsw*, was aimed at exploiting the potential of the Internet to benefit business, government and the broader community. A whole-of-government approach to electronic service delivery was a key objective. Now, some five years later, most government agencies have a web site accessible either directly or through the NSW Government portal and many are offering online services through these sites.

As with any other method of information and service delivery, it is essential that the performance of these sites is evaluated to ensure that electronic service delivery is developing in a way that not only meets government targets for the volume of such services but also for their effectiveness in meeting the needs of business and the general public. The Audit Office of NSW has targeted e-government as a theme area for ongoing examination. As part of this work, the authors were commissioned to undertake an evaluation of a select number of NSW government agency web sites. The project was intended to also develop a methodology for government web site evaluation which could be applied broadly across all government agencies. It was also hoped that the findings would be an indication to all agencies of good practice in web site development and design to promote effective electronic service delivery.

Goals of the project were therefore to:

- conduct an evaluation of selected government web sites using criteria developed for the project based on research and accepted best practice.
- provide recommendations about the suitability of individual evaluation criteria for measuring the performance of web sites.

The evaluations were to be conducted from a user perspective and involve evaluation of site content and access to this content. It was not intended to evaluate whether actual site content reflects the mission, goals and work of the agency or the privacy and security implications of site use.

Although this study is an evaluation of specific selected sites, it is hoped that the methodology developed and tested here will be used by other agencies to evaluate their own sites from a user perspective. Seeing a web site from the point of view of a user is likely to focus agencies' attention on features of content and usability which may not have been given sufficient consideration in the design, development or ongoing maintenance phase. Obtaining a range of viewpoints about an agency website will strengthen the base on which to make improvements.

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This report outlines the research literature available on evaluating government web sites, the development of the evaluation methodology and the selection of appropriate criteria, the results of the evaluation of the selected web sites, general findings on problems and examples of better practice, and recommendations for improvements related to the major criteria.

## 1.2 Research on government web sites

Research on the design of web sites is now well established and there is a general body of research literature on effective design and navigation aspects and on criteria for usability. In some of these studies there has been an attempt to identify, from user surveys, the criteria which users of web sites consider important (see for example, Abels, White and Hahn, 1997) and others which have involved users in the evaluation process (see for example, Cullen and Houghton, 2000).

In relation to government web sites, there have also been design and usability studies and some user studies which have looked at how people access these sites, the reasons for accessing these sites and the difficulties encountered. In addition, there is now a small body of literature on the evaluation of government web sites looking specifically at their effectiveness in achieving the objectives articulated in the broad visions of governments particularly those related to access to government information and electronic service delivery (see for example, Stowers, 1999; Chandler, 1998; Cullen and Houghton, 2000; Smith, 2001). This latter material has been of particular use in the development of the evaluation methodology used in this study.

As well as the empirical research available, there are various government evaluation reports, guidelines on e-government and best practice guides now available which have provided useful background material as well as an indication of standards expected. For example:

Audit Office of New South Wales (2001) *Performance Audit Report, e-government: Use of the Internet and related technologies to improve public sector performance.*

Australian National Audit Office (1999) *Electronic service delivery, including Internet use by Commonwealth government agencies*

NSW Office of Information Technology. (2001) *Providing information and services using the Internet: a guideline for NSW government agencies. Issue 3.0.*

WC3 (1999) *Web content accessibility guidelines 1.0.* Available at: <http://www.W3.org/TR/WAI-WEBCONTENT/> (accessed 10/2/02)

A full bibliography is provided at the end of this report.



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## 2.0 METHODOLOGY

There were three steps in developing and applying the methodology:

- identifying the criteria for evaluation
- testing the criteria and research procedures
- evaluating the sites and reporting on performance

### 2.1 Stage 1: Identifying the criteria

This involved determining:

- the features to be assessed (for example, time for a page to load, format)
- a method of measurement for each criterion (for example, on a rating scale or on a 'yes' 'no' basis)
- the level that needed to be achieved before performance on an attribute was judged 'acceptable' or 'satisfactory'.

#### *Features to assess*

The fundamental assumption that guided the study was the belief that the evaluation of any service/information delivery system should take a user perspective, that is, the criteria should reflect those features of the system that the intended users consider important.

As a result of the literature search and after consultation with the Audit Office, it was decided that most criteria would be based on those used by Smith (2001) and Cullen and Houghton (2000) to assess New Zealand government web sites. These criteria were supplemented by criteria from government guidelines on specific aspects such as standards for content and access, design and navigation, security and other legal requirements.

Three levels of criteria were included in the hierarchy of criteria developed: from a broad conceptual categorisation to specific types then specific measures (see Appendix 1). At the top level, the criteria represent three key concepts about high performing government web sites: they should be open, accessible and usable.

- *Openness* refers to the extent to which a web site provides comprehensive and reliable information and opportunities for interaction between agencies and their users. This was measured by: providing a helpful orientation to the site, relevant content coverage, current and accurate information and interactivity between agencies and users. Twenty two criteria were developed to assess these features.
- *Accessibility* refers to the extent to which the site and its contents are available to a wide range of users with varying levels of skill and technology. This was measured by: access to the site and access to the content on site. Twelve criteria were used to assess these features.
- *Usability* refers to the ease with which users can navigate their way around the site and find needed information or services. This was measured by: quality of links, design and architecture, metadata, and navigability. Twenty two criteria were used to assess these features.

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### *Measurement of criteria*

Most (40) criteria were measured on a six point rating scale where 0 indicated that the criterion was not met on any level, eg absent/unacceptable, 1 indicated poor performance on the criterion, 2 indicated performance that was not quite satisfactory, 3 indicated that overall, the criterion was met at a satisfactory level, 4 indicated that performance was more than satisfactory and 5 indicated that the criterion was met at a high level. Other criteria (16) were measured by 'yes'/'no' depending on whether the feature was present and absent. The decision on whether a particular aspect was to be measured on a scale or on presence or absence was determined by the feasibility of reliably making gradations or fine differences on the criteria amongst the sites being evaluated.

In addition to the quantitative assessment, the assessors provided explanatory comments on site performance for many of the criteria.

### *Measurement of 'satisfactory'*

Remembering that this evaluation is being undertaken from a user perspective, the most difficult task faced was answering, for each of the criterion, the question: *what would a user of this site consider was a satisfactory performance?*

The research literature referred to in section 1.2 provides an indication of the information and services users expect to access from government web sites and the level of usability users consider necessary for ease of access. The researchers used this research and their expertise in evaluating a range of public information services to develop an understanding of what users might find satisfactory on each criterion. In most cases this 'user' was a member of the general public, or in some instances, a member of a specific user group.

The list of criteria developed was then discussed with the project managers at the Audit Office and agreement reached on the criteria to be used in the pilot and the evaluation methodology.

## **2.2 Stage 2: Testing the criteria and research procedures**

The pilot test was conducted on two sites, the Audit Office of NSW site and a site from another Australian state. The two research assistants who would be evaluating the sites were briefed on the meaning and intent of each of the criteria. Each evaluator then applied the criteria to both sites independently and made notes of any concerns about interpretation of the criteria. The results from each evaluator were compared by the researchers and, where there was divergence between the evaluators, the reasons for this divergence were explored.

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Based on the pilot test and the comments from the Audit Office, several changes were made to the criteria:

- several criteria were reworded in order to make the meaning clearer
- overlap between some criteria was eliminated
- criteria which were "double-barrelled", (covered more than one site feature or attribute) were split into two or more criteria.
- concrete descriptions of what was to constitute a 'satisfactory' performance were added to some criteria where necessary

These changes were designed to maximise reliability, that is, to maximise confidence that each evaluator would be using the same standards to judge each site. A copy of the evaluation work sheet is attached (Appendix 1).

### **2.3 Stage 3: Evaluating the sites**

#### *Selection of the sites*

As agreed in the project brief, nine NSW Government web sites were to be evaluated for this performance evaluation and three sites from other state jurisdictions for comparative purposes. The sites were selected 'judgmentally' rather than randomly on the criteria listed below:

- size and complexity of an agency and its site
- range of functions on the web site (e.g. commercial transactions, databases, submission of documents, questions)
- variety of users (e.g. activists, students, people for whom English is not the first language, consumers)
- variety of uses (e.g. personal, business)

This means that the sites selected should not be viewed as a 'sample' in any statistical sense. However, other agencies may want to consider the findings in relation to the performance of their own web sites.

A list of possible sites was developed in discussion with the Audit Office and the final selection was based on providing a varied selection of sites across all of these criteria.

#### New South Wales sites

- Audit Office of New South Wales <http://www.audit.nsw.gov.au/>
- Australian Museum <http://www.amonline.net.au>
- Births, Deaths and Marriages <http://www.bdm.nsw.gov.au/index.html>
- CityRail <http://www.cityrail.nsw.gov.au/>
- Education and Training <http://www.det.nsw.edu.au/>
- Planning NSW <http://www.planning.nsw.gov.au/>
- Public Works <http://www.dpws.nsw.gov.au/DPWS/>
- Small Business (a sub site of the Department of State and Regional Development) <http://www.smallbiz.nsw.gov.au>
- Sydney Water <http://www.sydneywater.com.au/>

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Three comparable interstate sites were also chosen: two from Queensland and one from Victoria.

Before the evaluation was carried out, each selected NSW Government agency was notified that their site was going to be evaluated and was sent the criteria for evaluation. They were also informed that selective tests of the services provided from the site would be carried out. It should be noted that the results for the NSW Audit Office reported in the main findings are those from the pilot and the site was not re-evaluated.

As sites change constantly, 'copies' of the sites at the time of evaluation were stored as part of the data collection process.

### ***Application of the criteria***

The criteria were applied to individual sites only and there was no attempt to assess or test the performance of the NSW government gateway site. For the purposes of this study, it was assumed that users would start with the individual agency home page, that is, they would not begin their use of the site from a more specific page within it.

Generally, the evaluators approached each site as a user. They followed links, used everyday language when doing searches, attempted to purchase products, used the information services, registered for services and so on. Although the study did not attempt to evaluate internal working or design of the website, eg server logs, some features were assessed using web site design and evaluation tools. We believe these tools enhanced the reliability of the assessment. Specifically the tools used were:

- for loading time - the evaluators' actual experience with the site and *Web Site Garage* (<http://www.websitegarage.netscape.com>)
- for browser compatibility - *Web Site Garage*
- for accessibility - *Web Site Garage*, by viewing the 'source page', evaluators' actual experience and 'Bobby' ([www.cast.org/bobby](http://www.cast.org/bobby))
- for spelling - the evaluators' actual experience with the site and *Netscape Composer*
- for links - the evaluators' actual experience with the site and *Validator* (<http://validator.w3.org/>)

### ***Reliability checks***

One of the major challenges of the study was to establish consistency between the two evaluators and consistency in each evaluator over time. A number of methods and checks were established in order to increase and measure this consistency or reliability. Some of these methods, e.g. providing concrete descriptions, are mentioned above. In addition:

- to ensure that each evaluator continued to apply the criteria consistently, each evaluator re-evaluated one site after a period of time and compared the results.
- to ensure that both evaluators were applying the criteria in the same way, three sites were evaluated by both evaluators and the results compared.

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## *Revisiting the criteria*

In future evaluations using this methodology, some minor revision of the criteria to eliminate overlap noted on some criteria will be needed. This has been noted in bold on the Evaluation worksheet provided at Appendix 1. Some of the criteria which were rated on a yes/no basis were found to have had sufficient variability to warrant using the grading scale. These are 'initial help and instruction', 'site can be used without graphics' and 'printing problems minimised'. These have also been noted in bold at Appendix 1. Also, for some items, further development of explanations of what constitutes 'satisfactory' from a user perspective may be useful, but are not essential, for agencies applying the criteria to their web sites.

## **3.0 KEY FINDINGS**

### **3.1 Introduction**

The overall performance of the nine NSW Government sites evaluated in this study is discussed below in Sections 3.2, 3.3 and 3.4. This is followed by analysis and discussion of findings in relation to specific evaluation criteria (Section 3.5), some examples of better practice (Section 3.6) and recommendations for on-going development of government agency web sites (Section 3.7).

Readers are reminded that these findings relate only to the web sites evaluated for this project and should not be taken as indicative of the performance of all NSW sites. These findings also relate to the web sites as they were at the time of the evaluation. Web sites undergo constant minor change and development and, in some cases, major changes to both design and content.

### **3.2 Overview of results**

Of the 56 features of the nine NSW government web sites selected for evaluation from a user perspective, 40 were rated on a six point scale and 16 were rated on a yes/no basis. Mean scores were calculated for each of the criteria rated on the 0-5 scale over all the nine sites and are included in Appendix 2a. Appendix 2b contains the results over all the nine sites on the criteria assessed on a yes/no basis only. The results on the individual criteria have been aggregated to provide a picture of the performance across all nine sites on the major groupings of criteria (Table 1). The results on the criteria measured on the 0-5 scale and the results on the criteria assessed as yes/no have been presented separately. The number of criteria measured on the 0-5 scale relative to the number of yes/no criteria in each group has also been provided to aid interpretation.

From the results provided in Table 1, the overall performance of the nine NSW State Government web sites evaluated was deemed to be satisfactory from a user perspective in three areas: accessibility to the site, links, and design and architecture. The areas assessed as having the greatest performance concern from a user perspective were: orientation to the site and navigability, with concerns in the areas of accessibility to site content, currency and accuracy of the information, and provision of metadata.

**Table 1: Results for major groupings of criteria**

<b>Criteria</b>	<b>Mean (0-5)<sup>1</sup></b>	<b>% Yes/No<sup>2</sup></b>	<b>Number of criteria rated 0-5, Yes/No</b>
<b>Openness</b>			
Orientation	2.11	33.33%	2,1
Coverage	3.31	22.22%	6,1
Currency, accuracy	2.69	100%	4,1
Interactivity	2.71	70.37%	4,3
<b>Accessibility</b>			
To the site	3.55	85.19%	2,3
To site content	3.01	22.22%	4,3
<b>Usability</b>			
Links	3.78	81.48%	2,3
Design and architecture	4.08	-	4,0
Metadata	2.74	-	3,0
Navigability	2.39	55.56%	9,1

### 3.3 High and low points of performance

Means calculated for each criterion over all the sites provide a picture of which criteria were best handled and least well handled from a user perspective by the web sites evaluated. The range of means for criteria rated on the six point scale was a low 0.67 ('responsibility for substantive page content stated/link to page maintainer given on each page') to a high of 5 ('typing and grammatical errors absent'). For the criteria rated either yes or no, the range was from one yes ('site is 'Bobby' approved at level 1') to 9 yeses ('site can be reached a high percentage of time' and 'external links are relevant').

Table 2 below indicates levels of performance that are high or low for individual criteria when assessed from a user perspective.

<sup>1</sup> 40 items assessed on 0-5 scale; 3=satisfactory

<sup>2</sup> 16 items assessed as yes/no

**Table 2: High and low points of performance**

<b>Criteria</b>	<b>High Points<sup>3</sup></b>	<b>Low Points<sup>4</sup></b>
<b>Openness</b>	<p>Provision of direct information resources rather than indirect', i.e. full text of sources of information.</p> <p>Content is written in a clear and consistent language that matches the expected audience.</p> <p>Typing, spelling and grammatical errors and other inconsistencies are absent.</p> <p>Link to web manager is provided for feedback, questions about the operation of the site.</p> <p>Information services are available, eg retrieve sorted/classified information on demand.</p> <p>Transactions fully operational (where provided).</p>	<p>Clear statement of scope and aim of site provided, including audience.</p> <p>Content is in relevant languages.</p> <p>Content is downloadable and available in alternative formats, eg html, pdf.</p> <p>Pages have been documented as updated.</p> <p>Responsibility for pages of substantive content/link to page maintainer is given for content on each page.</p> <p>Clear statement about security (where relevant).</p> <p>Clear, comprehensive policy on limitations of email inquiry service are stated.</p>
<b>Accessibility</b>	<p>Speed of response is adequate (for users at 28.8Kbps).</p> <p>Site can be reached a high proportion of the time.</p> <p>Existence of site is made known through search tools, eg government web directories, search engines.</p>	<p>Provision of alternatives to higher level technology (where necessary).</p> <p>Site can be used without graphics.</p> <p>Site is 'Bobby' approved at level 1.</p>
<b>Usability</b>	<p>There are no dead end links.</p> <p>External links are relevant to the agency and its users.</p> <p>Consistent format and layout.</p> <p>Pages are an appropriate length, clearly laid out and readable.</p>	<p>Search engine explicitly states what it searches.</p> <p>Help is provided with search commands.</p>

<sup>3</sup> High points: mean scores of 4.0 or more, 8 or 9 yeses

<sup>4</sup> Low points: mean scores of 2.0 or less, 1 or 2 yeses

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### 3.4 Overall site performance

Results for each web site, including the interstate sites are shown in Table 3 below.

In terms of overall performance from a user perspective, two sites stood out: the Australian Museum site and the Registry of Births, Deaths and Marriages site. This demonstrates that it is possible for NSW Government agencies to provide sites which users will find open, accessible and usable. Both of these sites are clearly organised around specific user groups or specific user needs and scored highly on the provision of suitable and relevant content for users.

The variation in the mean scores across the agencies may reflect the fact that the sites chosen are at different stages of development depending where an agency is in its cycle of continuous improvement. A website which has recently been refined should, other things being equal, take more account of user needs and be more user-friendly.

The variation may also in part reflect the priority given so far to web sites as a means of communication by the selected agencies. For example, agencies which have the potential for real and significant savings from electronic service delivery may give high priority to web site improvement.

**Table 3: Results across all criteria for each site**

<b>NSW Sites</b>	<b>Mean (0-5)<sup>5</sup></b>	<b>Number of Yeses<sup>6</sup></b>
Audit Office	2.69	6/16
Australian Museum	3.85	12/16
Births, Deaths and Marriages	3.97	14/16
CityRail	2.29	6/16
Education	2.91	11/16
Planning	2.88	10/16
Public Works	2.94	8/16
Small Business	2.81	12/16
Sydney Water	2.82	10/16
<b>Interstate Sites</b>		
AQ	3.35	11/16
BQ	2.42	7/16
CV	2.60	8/16

More detailed comments on the performance of individual sites can be found in Appendix 3: Summary of site performance on the criteria.

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<sup>5</sup> 40 items assessed on 0-5 scale, 3 = satisfactory

<sup>6</sup> 16 items assessed as yes/no



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### 3.5 Findings on specific criteria across all sites

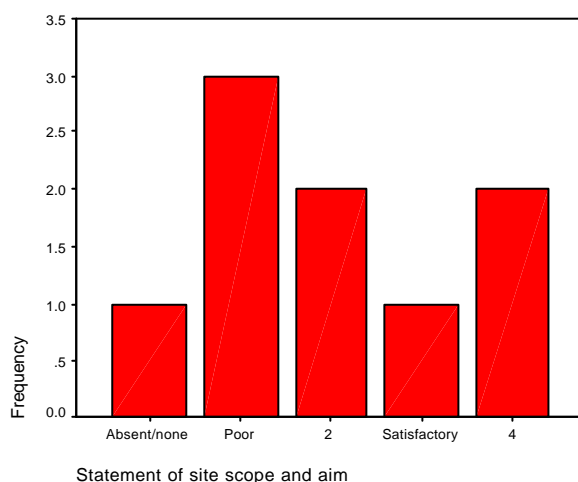
This section provides an analysis and discussion of the performance of the web sites across all criteria evaluated under the major groupings of criteria for openness, accessibility and usability. Data is also presented in the form of bar charts to show the range of variability where this was particularly noteworthy. Readers are reminded that for items rated on the six point scale, 0 indicated that the criterion was not met on any level, eg absent/unacceptable, 1 indicated poor performance on the criterion, 2 indicated performance that was not quite satisfactory, 3 indicated that overall, the criterion was met at a satisfactory level, 4 indicated that performance was more than satisfactory and 5 indicated that the criterion was met at a high level.

#### 3.5.1 Openness

##### *Orientation*

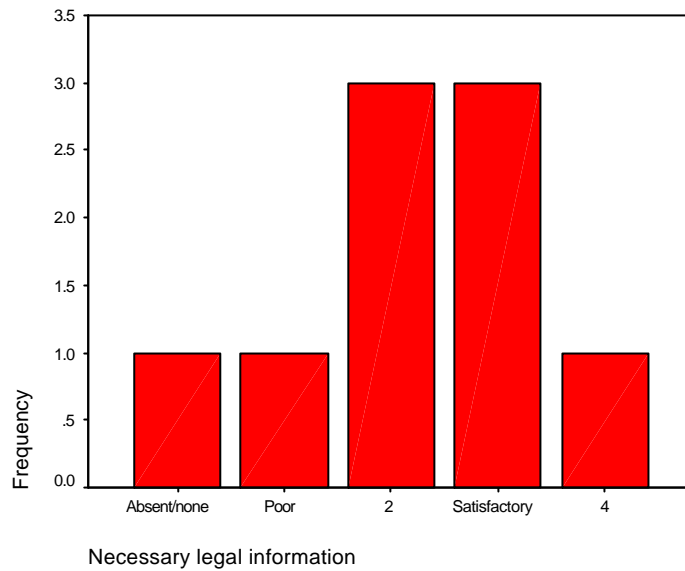
On the majority of sites, the performance on the provision of information to allow a user entering a new website to quickly establish its purpose, receive orienting help and essential legal information was not satisfactory. In addition, this lack of information about who or which groups the site was intended for made evaluation of site content and design from a user perspective difficult (see under coverage below). Specifically, there was little indication of the purpose of the site or who it was designed for and initial help and instructional facilities were not always provided.

**Figure 1: Statement of site scope and aim**



Necessary legal information, such as privacy and security statements, copyright/ conditions of use and disclaimers, was not always provided or in sufficient detail.

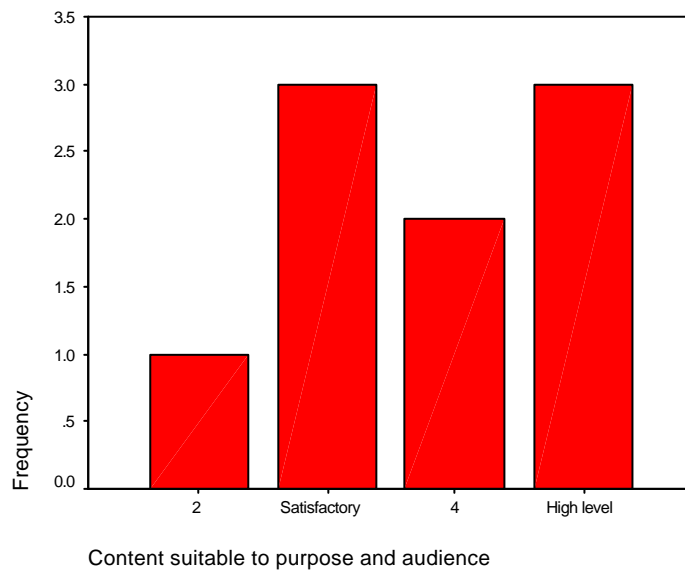
**Figure 2: Necessary legal information provided**



**Coverage**

The web sites are clearly being used to disseminate an increasingly large amount of government information to those who have web access, although only two sites had any information in community languages. In a number of instances, the evaluators had to make assumptions about site purpose and users in order to determine the relevance of the content. Most sites had content which appeared suitable to the assumed purpose and users although there were gaps in content, particularly covering current and controversial matters of interest to the public generally, or to particular groups.

**Figure 3: Content suitable to purpose and audience**



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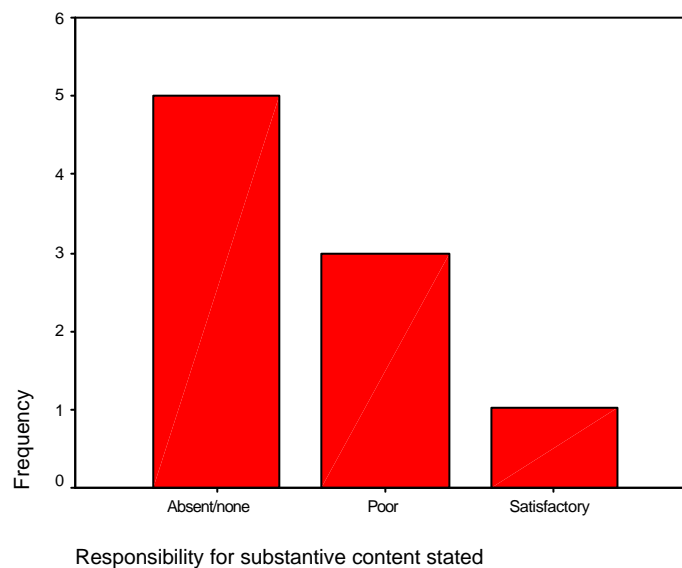
The sites also provided many of the elements of content required under the NSW Office of Information Technology guidelines, eg annual reports, press releases. Some sites had considerably more information and services provided than was required under these guidelines.

Overall, the sites performed well on the provision of direct information resources to users, as opposed to providing a summary only, although this information was not always in alternative formats to aid wide accessibility. Full contact details for functions within agencies were not always provided.

### ***Currency and accuracy***

In order for users to assess whether they can trust the information on government web sites, it is essential that the responsibility for each page of substantive content is stated, with brief contact details provided for further information and that the date of last review of the content of each page be stated. Generally this was not well done, that is, the responsibility for the content of substantive pages was not indicated and few pages provided the date of last update/review. However, the content generally was assessed as being up-to-date and consistent, and very few typing, spelling or grammatical errors were detected. A link was provided to the web manager for feedback on all sites.

**Figure 4: Responsibility for substantive content stated**



### ***Interactivity***

Transaction services were provided on most sites. These ranged from fully operational transactions for ordering products or paying bills on four of the sites and examples of submission of forms and registering for update services on many sites. However, clear statements about the security of personal data were not always provided at the point of use. Privacy and security were not tested as part of this evaluation.

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Most sites also provided information services in the form of searchable databases and all provided some form of email enquiry service, although the extent to which this was seen as a regular part of the agency services is uncertain. There was very little indication provided about turnaround times or limitations on the service. There was little evidence of web sites being used for two-way communication between the agency and the general public or specific user groups and there was no evidence of sites providing an opportunity for discussion of issues or for policy development.

### 3.5.2 Accessibility

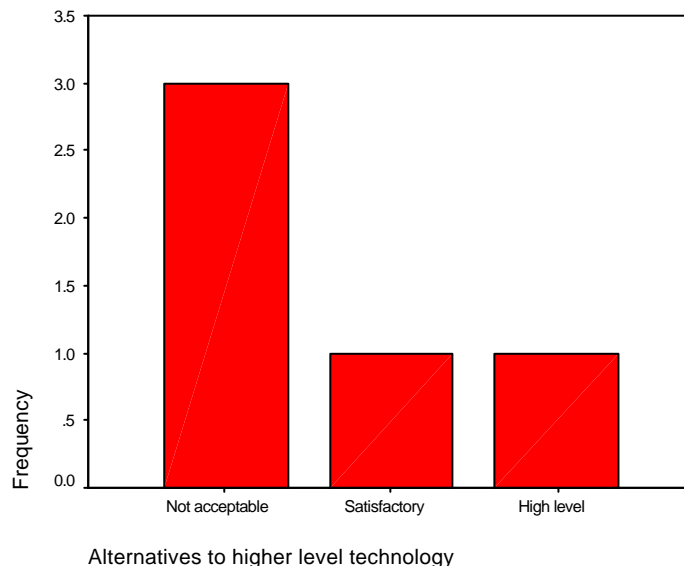
#### *Accessibility to the site*

Sites were available most of the time and response speeds were generally satisfactory for most users. Most sites could be found using the main search tools, eg government web directories and search engines. Not all sites had a link to Service NSW, although three sites provided the link indirectly through the parent agency. This reduces the ability of users to find relevant government information across different government agencies. The lack of use of agency names in metadata on most sites also reduces the visibility of government information.

#### *Accessibility to content*

Most sites used standard HTML and were compatible with the main browsers likely to be used. Few sites could be used properly with the graphics turned off which means that site content is not available to users with screen readers and some sites which used higher level technology, such as frames or java script, did not necessarily provide alternatives.

**Figure 5: Alternatives to higher level technology**



All sites using special software made it available for downloading from the site, although some users may have difficulty following downloading instructions. Some users, particularly those accessing government information from home will encounter problems printing from some sites, due to for example, the use of shading, colour and frames.

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Only one site met the stringent requirements for accessibility to people with disabilities set by the level 1 ‘Bobby’ criteria ([www.cast.org/bobby/](http://www.cast.org/bobby/)) on any of its pages.

The performance on a number of the content access criteria has the effect of providing problems for all users with less advanced technologies and skills and for users with disabilities.

### 3.5.3 Usability

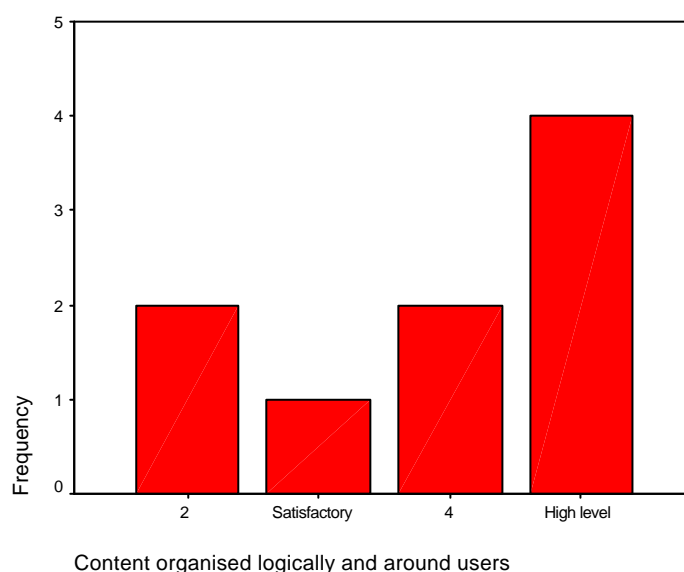
#### *Links*

Not all sites provided links to new information or short cuts for frequent users. Web managers should be able to establish high traffic areas, and provide links to these from the home page. Descriptive information about links to enable users to decide whether to follow a link or not was satisfactory overall, but the practice was highly variable. Link text is particularly important for those users who have limited access to the web.

#### *Design and architecture*

Once again, the evaluators needed to make assumptions about site users and their needs, in order to determine whether the content was organised appropriately. There were some outstanding examples of organisation around user needs.

**Figure 6: Content organised logically and around users**



There was great variation in format and graphic design, but this is not necessarily a problem provided that the design reflects the purpose of the site and the needs of the users.

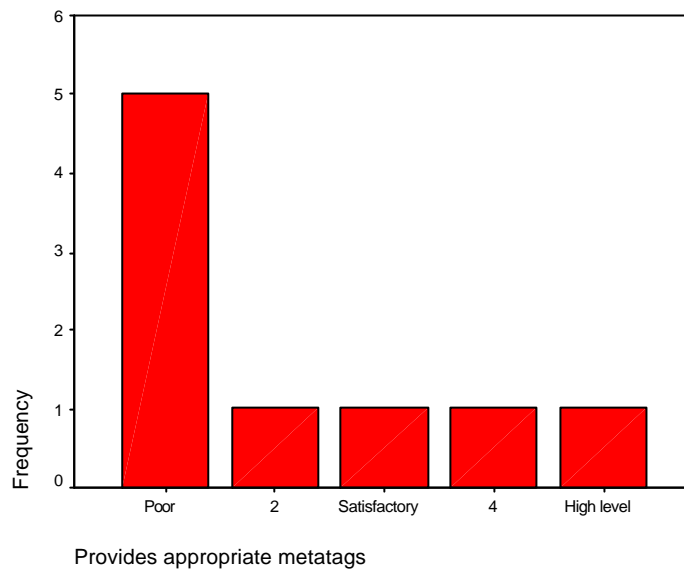
In summary, content of most sites was organized around users (assumed) needs, format and graphic design was found to be appropriate and pages were appropriate in length, clearly laid out and readable. Consistency of format and design was maintained within three clicks of the home page on all sites. For a product whose pages are continually evolving, this presented a major and continuing challenge. The need for overall design consistency has to be set against the need for design which is responsive to the needs of specific user groups.

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## *Metadata*

Use of metadata has the ability to greatly increase the visibility of government information and increases the relevance of users' searches. Only two sites provided metadata using the the Dublin Core or Australian Government Locator Service standard on their pages. Many had minimal use of HTML tags (metatags) and in many cases these were identical for all pages.

**Figure 7: Provides appropriate metatags and metadata**



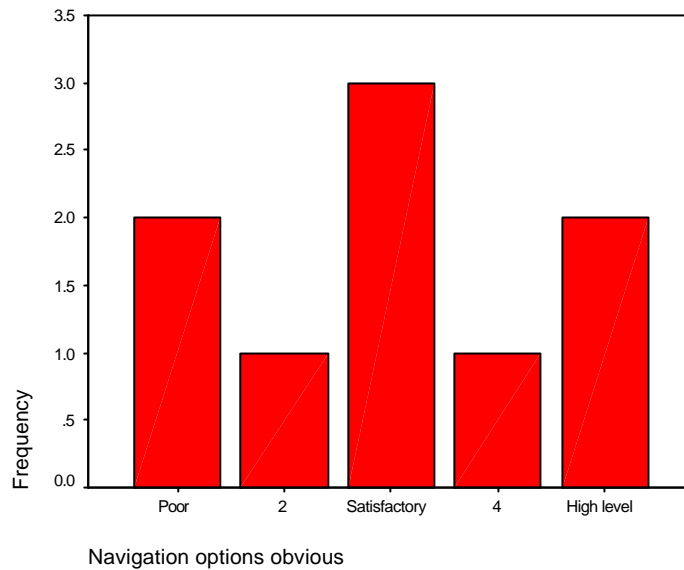
When metadata is added at page creation and updated to reflect changes in content, it increases the relevance of information retrieved from search engines either on the site or externally. In addition, title bar headings on pages were not always descriptive of the content. Headings used in the body of the web pages were descriptive of content on all sites, enabling users to quickly find relevant information on individual pages.

## *Navigability*

Some sites used few of the conventional navigation models and there was inconsistency in their use.

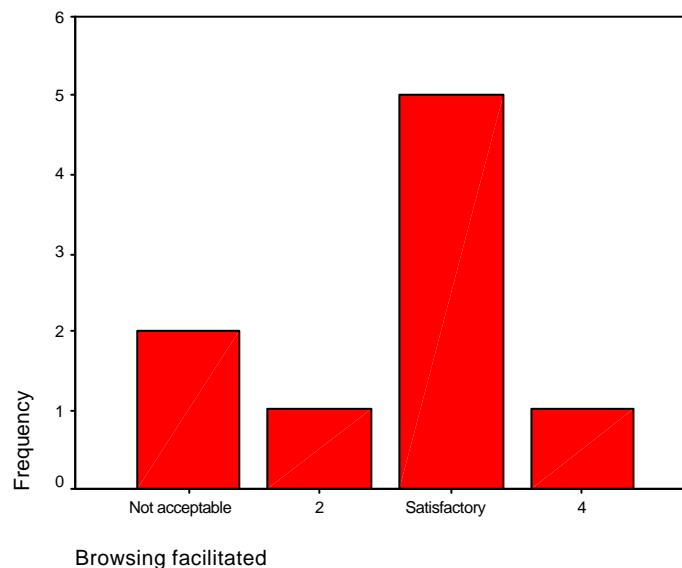
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**Figure 8: Navigation options obvious**



Essential navigation features were missing on many pages. With the exception of two sites whose navigation options were very clearly provided to the user, the evaluators frequently found themselves in a situation where they had no idea where they were on the site. Using the features designed to assist browsing, eg, site maps, menus and links, users of many sites would not be confident that they had found relevant information that was on the site.

**Figure 9: Browsing facilitated**

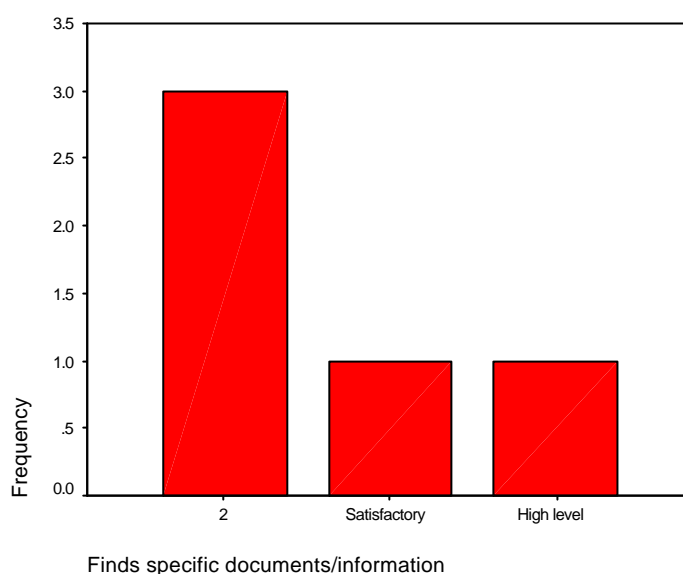


This is particularly problematic on the four sites which did not provide on-site search engines.

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Search engines greatly assist users to access relevant information and it is advisable that they are provided on all government web sites. Even where search engines were provided, assistance with searching and an indication of exactly what the search engine searched was lacking. The results of tests on the search engines, using evaluators without advanced searching skills, were very mixed.

**Figure 10: Search engine finds specific documents/information**



Reasons for poor performance included lack of precision in the results, that is, providing both relevant and many irrelevant items. Users with average searching skills would be unable to state with any confidence that they had found all relevant information (and only relevant information) on any of the sites using the search engines.

### **3.6 Better practice examples**

Although many individual instances of good practice in relation to the various criteria were identified on all web sites evaluated, the examples presented below are particularly relevant to the user perspective and therefore to the focus of this evaluation study.

#### ***User-centred design and content***

The sites from the Australian Museum and the Registry of Births, Deaths and Marriages, the Small Business site from the Department of State and Regional Development and the Department of Public Works and Services tenders' sub-site (which was evaluated as part of the DPWS site) all provide good examples of a user-centred approach in the development of the complete site. The site content provided is consistent with the purpose of the site and the needs of target user groups and the sites are organised around those activities and needs.



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## ***Transactions***

The Australian Museum, Registry of Births, Deaths and Marriages, Planning NSW and Sydney Water sites all provided examples of fully operational transactions which were tested successfully. The Museum site stood out for the range of activities and services it provided from the site. These included ordering products, making bookings, signing up for membership. Onscreen and email confirmation was provided and there was a clear statement about security at the point of sale of products.

## ***Metadata***

The Department of Education and Training and the Australian Museum sites provided examples of good use of metadata to enhance the accessibility of their information by indexing the pages on their sites using the Dublin Core standard for metadata, and to a lesser extent, the Australian Government Locator Service (AGLS) standard.

## ***Navigation***

The sites of the Department of Education and Training, Australian Museum, Small Business and SydneyWater provided 'breadcrumb' navigation, for example, [Home >About the Museum >Corporate information](#). This displays the current page's context within the site structure, making obvious the ways in which information has been grouped and allowing the user to move between these groupings and gain a better understanding of the information structure.

### **3.7 Recommendations for on-going development**

A number of recommendations are provided to assist in the ongoing design and development of NSW Government web sites from a user perspective:

#### ***Maintain a greater focus on user needs in site design and content development***

- determine the purpose of site, make this clear to the users and orient them to the site.
- develop and organise the site content around user groups. This requires identification of and knowledge of the relevant user groups, their information and service needs and any access issues.
- provide content in relevant community languages and highlight its presence on the web site.
- provide content on policy matters and on current issues of concern to the community.
- improve the quality of instructions generally and provide for different levels of skill and expertise from the novice to the sophisticated user where necessary.

#### ***Help users determine legitimacy of the information and the consequences of their use of the site***

- provide the name of agency, responsibility for content, disclaimer and date of last review or update on all pages of substantive content.
- provide appropriately detailed and user-friendly information on the privacy, security and implications of use of the site on all pages of substantive content.

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***Exploit the interactive capacity of the web for participation in government processes***

- provide features for two-way communication between individual members of the public, community groups, business and other organisations and government agencies.

***Improve accessibility to site content for all users including those with disabilities and those with less advanced technology and skills***

- provide documents in a variety of formats with clear instructions for downloading.
- minimize printing problems.
- provide a text equivalent for all non-text elements and provide alternatives to higher level technology.
- follow WC3 Web Content Accessibility Guidelines .

***Help users find the information and services they require from the site***

- improve navigation by adopting standard navigational devices and using them consistently throughout the site.
- facilitate browsing through the provision of better site maps and/or indexes and the provision of navigational information on every page.
- provide more links to high demand content and ensure that descriptive information about where those links lead is clear.
- provide search engines and state clearly what and how they search; provide assistance at the point of searching at different levels for searchers of differing abilities.
- improve relevance of retrieval via search engines by providing more appropriate meta tags and more consistent and more in-depth metadata using the Australian Government Locator Service (AGLS) standard recommended for NSW government agencies by the NSW Office of Information Technology.

***Help users find the information they require which is not on the site***

- provide a comprehensive list of agency contacts. Users should be able to send an email enquiry directly to the relevant section/person.
- clearly state standards of service and manage them appropriately. Users should expect an appropriately detailed and relevant answer within a set period of time.
- facilitate links across government sites and to other relevant sites through a link to Service NSW on all home pages, including the home pages of any sub-sites as well as external links to appropriate government and non-government organisations.

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## 4.0 CONCLUSION

This study of nine NSW government web sites evaluated the features of web site performance which are of importance to users of all web sites, and more specifically to those seeking reliable and accessible government information and services via the web.

This evaluation has provided a snapshot in time of the performance of the selected sites. We found variability in performance among the web sites on the features assessed. All agencies are using the web to disseminate information and to provide services, although there is little use of the web to foster two-way communication between the public and the agencies on issues of concern or as part of the policy process. We found web sites which lacked a clear purpose and there were many content accessibility and site usability issues. These will need to be addressed by the agencies responsible for the sites evaluated in this study and may point to areas of concern for all government agencies providing electronic service delivery.

It is hoped that the approach and methodology used here, and the general findings and recommendations, will assist agencies in the ongoing design and development of their web sites and therefore in the provision of user-oriented online services to the NSW public.

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## 6.0 Appendices

### Appendix 1: Evaluation Work Sheet

#### NSW Government Web Sites Evaluation Criteria Worksheet

##### Ratings

0=absent/not acceptable; 1=poor, 3=overall, meets the criterion at a satisfactory level; 5=meets criterion at a very high level

n/a = not applicable

yes/no

Comments – anything of particular note, good/bad features

##### A. Openness

##### 1. Orientation to content

		N/A	0-5	Yes/No		
1.1	Clear statement of scope and aim of site provided, including audience 0-5 (5= all elements present plus very clearly defined, 3=all present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<table border="1"><tr><td> </td></tr><tr><td> </td></tr></table>					
1.2	Initial help and instructional facilities provided (ie, assess at the front of the site, not at search engine etc) yes/no (change to 0-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<table border="1"><tr><td> </td></tr><tr><td> </td></tr></table>					
1.3	Necessary legal information is clearly provided – overall rating 0-5 (5=all elements present, comprehensive and clear; 3= all elements present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<table border="1"><tr><td> </td></tr><tr><td> </td></tr></table>					

Liability statement re official status of the information, liability for errors on the site

Copyright: statements are provided if necessary –identifies owner of intellectual property on the site, and conditions for re-use of information on the site, linking etc

Privacy statement:  
provides users with explicit policy on how user's privacy rights are protected;  
provides users with information about whether it collects/keeps site-use information; whether it makes site-use information public, or repackages or resells such information to others

Security statement: don't consider here, should be at point where relevant

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**2. Coverage**

2.1 Content suitable and relevant to the purpose of the site and matches needs of stated audience. If not stated, then use agency purpose/audience. **0-5** (5=all content is relevant to stated purpose of site and is oriented to stated audience. Can only get a max of 3 if have to assume purpose and audience of site from Agency purpose)

*N/A 0-5 Yes/No*

2.2 Comprehensive content - overall rating **0-5** (5= comprehensive, OISO plus more, 3=most of the minimum as below)

Agency overview, purpose; obligations of agency and individuals  
Services – summary, entitlements, eligibility, instructions for obtaining services, forms  
Publications – annual report, policies and guidelines, legislation/regulations, procedures/manuals, memoranda, circulars, white papers, discussion papers, agency newsletters, press releases, official speeches

2.3 Content is in relevant community languages (for people who do not read English very well) **Yes/no**

2.4 Contains direct information resources rather than indirect, eg the text of the document, rather than an abstract and instructions on how to obtain information in another format **0-5** (5=all, 3=most, comments, eg reasons why not, eg have to buy the documents)

2.5 Content is written in a clear and consistent language that matches the expected audience eg avoids jargon, condescension; professional tone; language does not show bias/is objective. **0-5** (Don't include an assessment of publications on the site)

2.6 Content is downloadable and available in alternative formats, eg html, pdf. **0-5** (5=html, pdf and rtf, 3=2 formats including html, 0=1 only)

2.7 Contact (location, phone, fax, email) details given for areas/ functions within the agency as well, eg phone directory with position, as for agency as a whole. **0-5** (3=key personnel/functions, contact details including some specific email addresses, 5=more detail on role/plus specific contact details for most) *N/A 0-5 Yes/No*


<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

**3. Currency and accuracy**

3.1 Pages have been documented as updated/reviewed **0-5**


<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

3.2 Content provided is up-to-date and consistent **0-5** (check age of 'what's new' items, dates of press releases, etc, check for inconsistencies between pages)


<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

3.3 Responsibility for pages of substantive content clearly stated/link to page maintainer given on each page **0-5** (5=specific responsibility given for content of each page, 3=specific responsibility on main pages)


<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

3.4 Typing, spelling and grammatical errors and other inconsistencies are absent **0-5** (5=couple of typos)


<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

**3.5** Link to web manager provided for feedback, questions re operation of the web site **yes/no**


<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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**4. Interactivity (as distinct from provision of information)**

4.1 Transactions available, eg acquire products, services, submit data online **yes/no** (comments re for whom, how accessible, eg fee/free/restricted access?)

Form submission

Payment

Submit data, tender doc

Buy/order products

Register for services, etc

Others (specify .....)

Others (specify.....)

Others (specify.....)


<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



4.2	Information services available, eg retrieve sorted/classified information on demand) <b>Yes/no</b> (comments re for whom etc.) specify.....  specify .....  specify .....	<i>N/A 0-5 Yes/No</i>  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.3	Communication available, eg interact with individuals and groups such as email, discussion forum, policy input/discussions <b>Yes/no</b> (comments, eg for whom, what is not provided etc)  email inquiry service  discussion forum (real time chat)  message boards  policy input  other (specify).....  other (specify).....	  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.4	clear, comprehensive help provided? <b>n/a or 0-5</b>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.5	fully operational? <b>n/a or 0-5</b> test, except security and privacy (all necessary info provided, can complete the entire transaction online)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.6	clear statement about security <b>n/a or 0-5</b>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.7	clear, comprehensive policy on limitations stated, eg types of questions answered, likely response time, <b>n/a or 0-5</b>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

<b>B. Accessibility</b>		<i>N/A</i>	<i>0-5</i>	<i>Yes/No</i>
<b>1. Accessibility to the site</b>				
1.1	Speed of response is adequate; for a high proportion of the time, users at 28.8Kbps should only be limited by the speed of their connection, not that of delivery from the server (right click on connect icon to check status/speed) <b>yes/no</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/> <input type="text"/>			
1.2	The site can be reached a high proportion of the time, and at times when the audience is likely to access it. eg during business hours, nights as appropriate for users of the site <b>yes/no</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/> <input type="text"/>			
1.3	Existence of the site is made known through search tools, eg govt web directories, search engines – check Yahoo, Google, Ask Jeeves; search engine on Service NSW at <a href="http://www.nsw.gov.au">www.nsw.gov.au</a> . <b>0-5</b> (5=very high up on Google, Yahoo using user friendly search terms, plus ServiceNSW, 3=high up on these, plus Service NSW, 2 = lower down on search engines, plus Service NSW, 1= lower down, no Service NSW)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.4	There is a backlink to the parent entity, if needed, and ServiceNSW from the website home page <b>yes/no</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/> <input type="text"/>			
1.5	Name of entity is reflected in URL, titles of documents and metadata <b>0-5</b> (3= in URL and title of doc, 5=the lot)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/> <input type="text"/>			
<b>2. Accessibility to content on the site</b>				
2.1	Standard html is used and site is compatible with main browsers, eg Netscape, Internet Explorer, Lynx. (use webgarage.com to check) <b>0-5</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/> <input type="text"/>			
2.2	Alternatives to higher level technology are provided where appropriate, eg frames, forms, Java script. <b>n/a or 0-5</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3	Site can be used without graphics <b>yes/no (change to 0-5)</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/> <input type="text"/>			

2.4 Pages load quickly, eg images and documents are small to facilitate loading/uses thumbnail for large graphics **0-5** N/A 0-5 Yes/No

2.5 Does not require special software to use **0-5** (5=requires no special software, 4=requires special software, downloadable and free on site, good instructions, 3=downloadable on site/free, poor instructions, 2=downloadable, costs, 1=not downloadable on site)

2.6 Site is 'Bobby approved' at level 1 **yes/no** (check home page, 2 at level 2, 2 at level 3 and 1 actual document, plus comments re what it fails on)

2.7 Printing problems minimised, eg caused by frames, side bars, use of particular colours, graphics **yes/no (change to 0-5)**

**C. Usability**  
**1. Links**

1.1 There are no dead end links **0-5** (use W3C to check, 5=one or two dead links, 3=5 dead links, 1=10 dead links, 0=more than 10)

1.2 A 'what's new' section is provided for new links **yes/no**

1.3 Shortcut links are possible for frequent users **yes/no**

1.4 Link text provided - overall rating: **0-5**  
 Liability statement warning the user about information that may be provided through links is given (eg material unsuited to children)  
     sufficient information about the link to determine usefulness  
     warning statements are provided if link will take viewer to a large document or image  
     indication of restricted access for a link is provided


		<i>N/A</i>	<i>0-5</i>	<i>Yes/No</i>
1.5	External links are relevant to Agency and its users <b>yes/no</b>			
	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/>			
<b>2. Design and Architecture</b>				
2.1	Content organised/categorised logically and around user needs/events, eg not organisational structure <b>0-5</b> (3=logical and some element of user orientation)			
	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/>			
2.2	Format and graphic design are appropriate to subject matter and functionality <b>0-5</b>			
	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/>			
2.3	Consistent format and layout is used throughout <b>0-5</b> (3=consistency down to the third level, with the odd exception)			
	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/>			
2.4	Pages are an appropriate length, clearly laid out and readable, eg uncluttered, function of different areas clear, use of headings, sub headings, appropriate use of colour and fonts to aid visibility <b>0-5</b>			
	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/>			
3.	<b>Metadata</b> (provided in HTML tags, the broader metadata contained in document titles, section headings, abstracts, and AGLS/Dublin core etc should be considered)			
3.1	Appropriate metatags/metadata are provided, eg title, author, description, keywords <b>0-5</b> (3=description plus keywords, 5=AGLS/Dublin core)			
	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/>			
3.2	Section headings, in body text, are clearly phrased, descriptive and understandable <b>0-5</b>			
	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/>			
3.3	Each page, in title bar, is titled clearly and is descriptive of the content <b>0-5</b>			
	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="text"/>			

<b>4. Navigability</b>		<i>N/A</i>	<i>0-5</i>	<i>Yes/No</i>
4.1	Navigation options are obvious and spelled out eg users must always know where they are located on the site, and must be able to clearly identify navigation elements such as links <b>0-5</b> (2=back to home page on every page, 5=everything)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>				
<input type="text"/>				
4.2	Conventional navigation models are used and done well, eg navigation menu on left hand side or bar <b>0-5 (overlaps - incorporate into 4.1)</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>				
<input type="text"/>				
4.3	Navigation links are provided from all pages, eg to homepage and other key pages, to previous page, top of page in long pages <b>0-5</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>				
<input type="text"/>				
4.4	Browsing is facilitated by, eg, menus, site map, index, links <b>0-5</b> (3=rudimentary index/site map, menus, links, 5=much better)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>				
<input type="text"/>				
4.5	Can reach any point in an appropriate number of links. For an average-sized site should be able to reach any point in 3 links <b>0-5</b> (go through as a user would, 5=most reachable within 3 links, all important in less, 3=most within 3, most important in less)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>				
<input type="text"/>				
4.6	Search engine provided on site: <b>yes/no</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.6.1	explicitly states what it searches <b>0-5</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>				
4.6.2	help is provided with search commands <b>0-5</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>				
4.6.3	has typical search capabilities: (overall rating) <b>0-5</b> Relevancy ranking Phrase searching Boolean logic Browsing indexes Field searching (only if using AGLS/Dublin core) Truncation Controlled vocabulary Date/range searching Refining of initial search	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>				
4.6.4	finds specific documents/information (test) <b>0-5</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>				

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**Appendix 2a: Mean scores for criteria rated 0-5<sup>7</sup>**

<b>Criterion</b>	<b>N</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>
<b>Openness</b>				
Statement of site scope and aim	9	0	4	2.00
Necessary legal information	9	0	4	2.22
Content suitable to purpose and audience	9	2	5	3.78
Comprehensive content	9	1	4	2.89
Direct information sources	9	2	5	4.22
Written content matches expected audience	9	3	5	4.22
Content downloadable in alternative formats	9	1	3	1.89
Contact details for areas/functions	9	1	5	2.89
Pages documented as updated	9	0	5	1.44
Content up-to-date and consistent	9	2	5	3.67
Responsibility for substantive content stated	9	0	3	.67
Typing and grammatical errors are absent	9	5	5	5.00
Clear comprehensive help	8	2	5	3.50
Fully operational	4	3	5	4.50
Clear statement re security	4	0	5	1.75
Policy on limitations stated	9	0	5	1.11

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<sup>7</sup> 3 = satisfactory

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**Appendix 2a: Mean scores for criteria rated 0-5<sup>8</sup> (continued)**

<b>Criterion</b>	<b>N</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>
<b>Accessibility</b>				
Site existence made known through search tools	9	2	5	4.11
Name of entity is reflected in URLs etc	9	2	4	3.00
Standard html used and browser compatible	9	2	5	3.44
Alternatives to higher level technology	5	0	5	1.60
Pages load quickly	9	1	5	3.44
Does not require special software	9	3	5	3.56
<b>Usability</b>				
No dead end links	9	3	5	4.56
Appropriate links' text	9	1	5	3.00
Content organised logically and around users	9	2	5	3.89
Format and graphic design appropriate	9	3	5	3.89
Consistent format and layout	9	3	5	4.56
Pages appropriate length, readable, etc	9	3	5	4.00
Provides appropriate metadata and metatags	9	1	5	2.11
Section headings clearly phrased, descriptive	9	3	5	4.00
Each page in title bar clear and descriptive	9	0	5	2.11

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<sup>8</sup> 3 = satisfactory

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**Appendix 2a: Mean scores for criteria rated 0-5<sup>9</sup> (continued)**

<b>Criterion</b>	<b>N</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>
<b>Usability (continued)</b>				
Navigation options obvious	9	1	5	3.11
Conventional navigation models done well	9	0	4	2.56
Navigation links from all pages	9	1	5	2.89
Browsing facilitated	9	0	4	2.33
Reach any point in three links	9	2	5	3.44
Search engine states what it searches	5	0	4	1.00
Help provided with commands	5	0	2	1.00
Has typical search capabilities	5	2	3	2.40
Finds specific documents/information	5	2	5	2.80

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<sup>9</sup> 3 = satisfactory



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**Appendix 2b: Results on yes/no criteria**

<b>Criterion</b>	<b>Number of sites with yes</b>
<b>Openness</b>	
Initial help and instruction	3
Content in relevant languages	2
Link to web manager provided	9
Transactions available	7
Information services available on site	8
Communication available	4*
<b>Accessibility</b>	
Response speed adequate	8
Site can be reached a high % of time	9
Backlink to parent entity and Service NSW	6
Site can be used without graphics	2
'Bobby' approved	1
Printing problems minimised	3
<b>Usability</b>	
What's new section	7
Shortcut links	6
External links relevant	9
Search engine provided on site	5

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\* excludes email (all sites provide this)

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### Appendix 3: Summary of site performance on the criteria

The purpose of this appendix is to provide additional site-specific comments on performance against the criteria.

The following abbreviations are used in the reporting of the results:

AMS	Australian Museum
AUD	Audit Office of New South Wales
BDM	Births, Deaths and Marriages
CRL	CityRail
EDT	Education and Training
PLN	Planning NSW
PWS	Public Works and Services
SMB	Small Business
SWT	Sydney Water

and for the interstate sites, AQ, BQ and CV. Comparisons with interstate sites evaluated are provided where appropriate.

#### Openness

##### 1. Orientation to content

1.1 Clear statement of scope and aim of site
1.2 Initial help and instructional facilities provided
1.3 Necessary legal information is clearly provided

##### Comments:

- Only 3 sites (AMS, BDM and SMB) had anything approaching a statement of scope and purpose of their sites. A few more sites described their organisational purpose.
- Few sites (3/9) provided initial help and assistance to users to assist their orientation to the site (scored yes/no). AMS, EDT and PLN provide examples.
- Some elements of necessary legal information were lacking in 5 out of the 9 sites. PLN provided very clear copyright, privacy and disclaimer information. Others were very good on some and lacking in other areas.

##### 2. Coverage

2.1 Content suitable and relevant to the purpose of the site and matches needs of stated audience
2.2 Comprehensive content
2.3 Content is in relevant community languages
2.4 Contains direct information resources rather than indirect
2.5 Content is written in a clear and consistent language that matches the expected audience
2.6 Content is downloadable and available in alternative formats
2.7 Contact (location, phone, fax, email) details given for areas/functions within the agency as well

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**Comments:**

- All but one (EDT) site was satisfactory, that is, scoring a 3 or higher on relevant content for (assumed) users. The Education site, while being large, provided little content specifically designed for younger people who, it is assumed, are one of the target audiences. The Museum site had clearly designed content for different audiences. Sydney Water has a section designed solely for school children and PWS had a tenders' site. Some sites were obviously lacking in content relevant to the public. For example, EDT had very little on public issues such as the debate around the HSC and school closures. Neither CRL nor State Rail had anything on their sites about the State Government's *Action for Transport Report* or any of the debate surrounding it, nor was there a link to the Transport site.
- Most sites had some elements of the content required to be published on the site using OISO/OIT standards, whereas some sites had a great deal of content in addition to these minimum standards. The AMS site and one of the Queensland sites were the best examples of this. In some cases, where the site reviewed was a sub site (SMB), or the agency was part of a larger Department (AMS, BDM and CRL), the information was also lacking on the parent site.
- Only two sites (BDM and EDT) had content in languages other than English, eg BDM provided marriage regulations in a number of languages, and EDT has some of its publications in various languages, rather than in the text of the site itself. These were accessible from the home page of the site.
- 8/9 sites performed well on the provision of direct information resources available free on the site. PLN required many publications to be obtained (free or fee) from their offices including by mail, fax and phone. Many PWS tender documents need to be purchased. This can be done from the site itself.
- All sites used clear and consistent language relevant to their assumed audiences, although some members of the public might have difficulties with some of the terminology. Most of the EDT site was written in the same style throughout whereas other sites use a variety of styles tailored for particular audiences, for example, AMS and SWT.
- Most sites performed poorly on the provision of downloadable content in multiple formats. Many were provided in one or two formats. Some documents were in formats requiring additional software downloadable on the site.
- 3/9 sites had few details for contact within the agency, either by function and/or person. BDM had typical user inquiries listed, with the relevant email address provided for each.

**3. Currency and Accuracy**

3.1 Pages have been documented as updated
3.2 Content provided is up-to-date and consistent
3.3 Responsibility for pages of substantive content clearly stated/link to page maintainer given on each page
3.4 Typing, spelling and grammatical errors and other inconsistencies are absent
3.5 Link to web manager provided for feedback, questions re: operation of the web site

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**Comments:**

- Only one NSW site (BDM) consistently noted review dates on its pages, CRL had some. CV has review dates.
- Most sites were assessed as up-to-date, although sites with no date (or update) information on their pages (SMB had neither), makes this process difficult. There were some examples of inconsistent content due to differing currency, and examples of material which needed to be taken off or moved, eg latest job adverts with closing dates for some months earlier. CV also has some out of date sections, eg the most recent closing date for tenders is March 2001 in one section and January 2002 in another section.
- Few sites provided clear responsibility for the content of all substantive pages.
- All sites performed well on lack of typos/spelling mistakes and all sites provided a link to the web manager for feedback on the site.

**4. Interactivity**

4.1 Transactions available: Form submission Payment Submit data, tender doc Buy/order products Register for services, etc Others?
4.2 Information services available: Databases Others?
4.3 Communication available: Email Discussion forums Message boards Policy input Others?
4.4 Clear, comprehensive help provided?
4.5 Fully operational?
4.6 Clear statement about security

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**Comments:****Transactions**

- 7/9 sites provided transactions on site, eg ordering products and registering for services, making payments, form submission. AUD and CRL had no transactions on site. AMS, BDM and PWS provided the most transaction-based services via their web sites.

**Information Services**

- All sites except AUD had some form of information service, eg searchable database. For example, CRL had a rudimentary searchable timetable database, and fares and station information provided via menu-driven searches. PW has a database of tender documents searchable by RTF number with menu-driven options by category. AMS provided staff details in a searchable database provided that the user knows the name of the staff member. AMS also provided searchable publications databases. BDM has searchable birth, death and marriage indexes. EDT has a job vacancies database and a schools locator. AQ had an extensive staff directory searchable by name, position project or global (with drop-down menus). The results provide name, title, email and phone contact details.

**Communication**

- All sites provided users with an email inquiry service, either to a single email address or to specific individuals/organisational functions, or in some cases, via a feedback form, eg CLR. Few (BDM and AMS) provided any indication of limits to the email inquiry service, answering times etc. Only 4 sites provided any communication services beyond email. Some excellent examples were the message board provided on the Sea Slug Forum by AMS. This provides a link between professional biologists and others such as divers and amateur naturalists who may be able to share information about sea slugs to extend the scientific knowledge base. SMB provided a bulletin board for exporters. BDM had an 'Ideas Generator'. AQ provided users with the opportunity to create mailing lists for discussion of various topics and there were a large number of mailing lists already in existence. The archives were also available. Access was by password only.
- None of the sites provided opportunities for public discussion (either real time or message board) of policies or issues.
- Tests of interactivity (transactions and communication): Email inquiries were sent to 3 sites: AUD, EDT and AMS. An appropriate response was received from AUD within 4 days. AMS had not responded within 12 days and EDT had not responded within 10 days. Updates were registered for on PLN, and products were purchased from 3 sites (AMS, BDM and SWT). These were all fully operational, although privacy and security aspects were not tested. The tender submission process was not tested on the PWS site, nor was the job application process on the EDT site or the bulletin board for exporters on SMB.

**Accessibility****1. Accessibility to the site**

1.1 Speed of response is adequate
1.2 The site can be reached a high proportion of the time
1.3 Existence of the site is made known through search tools
1.4 There is a backlink to the parent entity, if needed, and Service NSW from the website home page
1.5 Name of entity is reflected in URL, titles of documents and metadata

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**Comments:**

- All sites except PWS were rated adequate on speed of response and all sites were reachable most of the time.
- Finding the sites from the commonly used search engines (Google, Yahoo) and from Service NSW was generally good. SMB had mixed results - 'NSW small business' was first on Google and Service NSW but not in the first 20 in Yahoo. If the term 'small business' was used, the first mentions were Commonwealth departments. The problem is no descriptors or keywords. 'Planning nsw' resulted in number one for Google and Service NSW and not in first 20 in Yahoo. 'duap' is successful in all, but many users who do not know the URL would not be using this as a search term.
- 3/9 sites do not have a backlink to Service NSW (AUD, EDT and SWT). An additional 3 sites have the backlink indirectly via their 'parent' site (SMB, AMS, BDM). The link should be provided directly, since it cannot be assumed that users are aware of the status of the agency.
- 7/9 sites had the name of their entity reflected in their URL and titles of documents, but very few had their name in metadata (AMS and EDT throughout and CRL on the home page only). AMS frequently used the term 'amonline' which would not necessarily be understood by users

**2. Accessibility to content on the site**

2.1 Standard html is used and site is compatible with main browsers
2.2 Alternatives to higher level technology are provided
2.3 Site can be used without graphics
2.4 Pages load quickly
2.5 Does not require special software to use
2.6 Site is 'Bobby approved'
2.7 Printing problems minimised

**Comments:**

- Use of HTML on the sites was checked using Web Site Garage. Two sites were rated unsatisfactory: SMB and SWT – both contained a number of warnings for older versions of Netscape
- 5/9 sites required alternatives to higher level technology, eg frames, Java. 3/5 sites did not provide any alternatives.
- Only 2/9 sites provide a text-only option (BDM and SMB).
- The PWS site was noticeably slower in loading pages due to a large graphic on the home page and the creation of hierarchical menus as you move around the site. Some pages were slow to load on AMS site. One of the Queensland sites was also very slow loading.
- Most (except BDM) sites required special software to use some aspects of the site. Software was downloadable on all sites with varying degrees of user-friendliness
- The only site which had Bobby approval for any of its pages was BDM. This site states that it was designed to meet AUS Standards for Accessible Web Design ([http://www.lawlink.nsw.gov.au/lawlink.nsf/pages/aus\\_standards](http://www.lawlink.nsw.gov.au/lawlink.nsf/pages/aus_standards))
- 6/9 sites would provide printing problems for many users; these would be caused by, for example, use of particular colours and frames, large areas of shading, large graphics. Some sites provided instructions for how to print pages with frames.

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## Usability

### 1. Links

1.1 There are no dead end links
1.2 A 'what's new' section is provided for new links
1.3 Shortcut links are possible for frequent users
1.4 Link text provides appropriate information
1.5 External links are relevant to Agency and its users

#### Comments:

- Very few sites had dead links.
- 7/9 sites provided a link from the home page to new material on the site.
- 6/9 sites provided shortcut links for frequent users, eg to pages for tenderers, bill payers, school children.
- The provision of suitable link text to alert the user to, eg large documents, unsuitable content and to provide sufficient information to help the user decide whether to follow a link is particularly useful. Some sites provided little or no link text while others provide very helpful information.
- All sites provided relevant external links. Some were a great deal more extensive than others.

### 2. Design and Architecture

2.1 Content organised/categorised logically and around user needs/events
2.2 Format and graphic design are appropriate
2.3 Consistent format and layout is used throughout
2.4 Pages are an appropriate length, clearly laid out and readable

#### Comments:

- Some sites (AMS, BDM, CRL, SMB) were outstanding in the organisation of the site around user needs. The schools section on the EDT site contained material for children, parents and teachers mixed together, although it was organised around user needs/events. To find required information by browsing, particularly for publications, in the PLN and AUD sites, it was necessary to convert the request into the framework of the Agency, eg SEPP (State Environmental Planning Policies) or REP (Regional Environmental Plans) or the specific type of Audit, before you could find relevant information. Users are not always going to be familiar with the agency's terminology or method of organisation.
- As expected, format and graphic design varied greatly, given the variety of target audiences and the age of the designs. All were judged to be appropriate to their audiences and purpose by the evaluators. Differences in style can be seen by comparing the spare but elegant home page of Planning with AMS's busy magazine-style home page and the very plain, uncluttered home page from AUD
- Consistency of format and design was very good within 3-4 clicks of the home page on all sites. Most inconsistencies that occurred were found much lower down in the sites.
- Most pages on all sites were of appropriate length, clearly laid out and readable. The use of colour coding throughout the SMB site was very good, however the use of colour on some sites could cause difficulties for users with low vision. The small size of the font on pages on the Education site makes it hard to read, but the page layout is very clear.

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### 3. Metadata

3.1 Appropriate metatags are provided, e.g. title, author, description, keywords
3.2 Section headings, in body text, are clearly phrased, descriptive and understandable
3.3 Each page, in title bar, is titled clearly and is descriptive of the content

#### Comments:

- Only 2 sites (AMS and EDT) provided metadata in either Dublin Core or AGLS. BDM used HTML keywords. 5 sites (AUD, PLN, PWS, SMB and SWT) had minimal use of HTML tags and in some instances was identical for all pages, eg PLN. The interstate comparison sites also performed poorly on this criterion.
- The use of descriptive and understandable headings on the actual web pages was well done.
- 5/9 sites were unsatisfactory on the descriptiveness of each page in the title bar. PLN, PWS and SMB had the same title, 'name of dept -Netscape', on every page.

### 4. Navigability

4.1 Navigation options are obvious and spelled out
4.2 Conventional navigation models are used and done well
4.3 Navigation links are provided from all pages
4.4 Browsing is facilitated by e.g. menus, sitemaps, index
4.5 Can reach any point in an appropriate number of links
4.6 Search engine provided on site: <ul style="list-style-type: none"><li>4.6.1 explicitly states what it searches</li><li>4.6.2 help is provided with search commands</li><li>4.6.3 has typical search capabilities</li><li>4.6.4 finds specific documents/information test</li></ul>

#### Comments:

- 2/9 sites (AUD, CRL) were unsatisfactory on keeping users informed about where they were on the site and making the navigation options obvious, eg CRL used their logo for navigation up and down the site, but there were no instructions to that effect on the site. AUD navigation around the site required the user to go back to the home page every time, providing no indication where the user is on the site. Most sites had occasional problems, eg with PWS there were problems getting back from sub sites to the main home page. EDT and AMS were rated excellent in this regard. These sites also provided 'breadcrumb' navigational aid, as did SMB and SWT.
- Conventional navigation models – 6/9 sites were rated satisfactory or higher on this criterion. Consistency in side bar menus was lacking in many sites. The link to the home page was sometimes out of sight on long pages.
- Essential navigation links were missing on some pages in many sites, eg to home page, top and bottom of page, help pages, site map, search engine.



- 
- 6/9 sites were regarded as satisfactory on the provision of means for browsing. Browsing was facilitated by the presence of site maps, drop-down and sidebar menus, indexes and links. CRL and AUD had very few of these features, although since their sites were very small, the lack of site maps and indexes was less of a problem. The Victorian site had both a (basic) index and a search engine. Planning had a very useful site map. The two Queensland sites provided excellent examples of expandable site maps. None of the NSW sites provided indexes. These are particularly useful as an additional method for finding information and publications on sites.
  - All but one (PWS) was rated as satisfactory on reaching any point on the site within 3-4 links. Short cut menus on many sites assisted this.
  - 4/9 sites (AUD, BDM, CRL, PWS) did not provide a search engine. Of the 5 that did, no NSW site provided search help that was rated as satisfactory. On the PLN site the instructions for using the search engine were provided under 'using this site', but at least it provided some assistance to users. SMB says it has an advanced search option, but only provided the regular search box. It was a case of trial and error, and even experimenting with various search strategies did not always clarify exactly what the search engines were capable of doing. One of the Queensland sites provided a very sophisticated search screen with extensive user help, including email assistance with search queries.
  - The search engines were tested by searchers with above average but not advanced searching skills. The results were very mixed. Only two (AMS and SMB) were rated as satisfactory. Reasons for poor performance included lack of precision in the results, ie provided both relevant and many irrelevant items (SWT). The Planning search engine does not search publications on the site, and the descriptions provided about each item make it difficult to determine relevance. Searches using the EDT search engine produce many pages whose only relevance is that they contain a link to a page that is relevant. Using quotation marks around the search phrase reduces this problem, but no help is provided on the site. The search engine on the AMS site provides very comprehensive results, but did not always find relevant information, eg 'opening hours' provided no results, even though there was information on the site under this heading.

# **Performance Audits by the Audit Office of New South Wales**

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## Performance Auditing

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### What are performance audits?

Performance audits are reviews designed to determine how efficiently and effectively an agency is carrying out its functions.

Performance audits may review a government program, all or part of a government agency or consider particular issues which affect the whole public sector.

Where appropriate, performance audits make recommendations for improvements relating to those functions.

### Why do we conduct performance audits?

Performance audits provide independent assurance to Parliament and the public that government funds are being spent efficiently and effectively, and in accordance with the law.

They seek to improve the efficiency and effectiveness of government agencies and ensure that the community receives value for money from government services.

Performance audits also assist the accountability process by holding agencies accountable for their performance.

### What is the legislative basis for Performance Audits?

The legislative basis for performance audits is contained within the *Public Finance and Audit Act 1983, Division 2A*, (the Act) which differentiates such work from the Office's financial statements audit function.

Performance audits are not entitled to question the merits of policy objectives of the Government.

### Who conducts performance audits?

Performance audits are conducted by specialist performance auditors who are drawn from a wide range of professional disciplines.

### How do we choose our topics?

Topics for a performance audits are chosen from a variety of sources including:

- ❑ our own research on emerging issues
- ❑ suggestions from Parliamentarians, agency Chief Executive Officers (CEO) and members of the public
- ❑ complaints about waste of public money
- ❑ referrals from Parliament.

Each potential audit topic is considered and evaluated in terms of possible benefits including cost savings, impact and improvements in public administration.

The Audit Office has no jurisdiction over local government and cannot review issues relating to council activities.

If you wish to find out what performance audits are currently in progress just visit our website at [www.audit@nsw.gov.au](http://www.audit@nsw.gov.au).

### How do we conduct performance audits?

Performance audits are conducted in compliance with relevant Australian standards for performance auditing and our procedures are certified under international quality standard ISO 9001.

Our policy is to conduct these audits on a "no surprise" basis.

Operational managers, and where necessary executive officers, are informed of the progress with the audit on a continuous basis.

### What are the phases in performance auditing?

Performance audits have three key phases: planning, fieldwork and report writing.

During the planning phase, the audit team will develop audit criteria and define the audit field work.

At the completion of field work an exit interview is held with agency management to discuss all significant matters arising out of the audit. The basis for the exit interview is generally a draft performance audit report.

The exit interview serves to ensure that facts presented in the report are accurate and that recommendations are appropriate. Following the exit interview, a formal draft report is provided to the CEO for comment. The relevant Minister is also provided with a copy of the draft report. The final report, which is tabled in Parliament, includes any comment made by the CEO on the conclusion and the recommendations of the audit.

Depending on the scope of an audit, performance audits can take from several months to a year to complete.

Copies of our performance audit reports can be obtained from our website or by contacting our publications unit.

### **How do we measure an agency's performance?**

During the planning stage of an audit the team develops the audit criteria. These are standards of performance against which an agency is assessed. Criteria may be based on government targets or benchmarks, comparative data, published guidelines, agencies corporate objectives or examples of best practice.

Performance audits look at:

- processes
- results
- costs
- due process and accountability.

### **Do we check to see if recommendations have been implemented?**

Every few years we conduct a follow-up audit of past performance audit reports. These follow-up audits look at the extent to which recommendations have been implemented and whether problems have been addressed.

The Public Accounts Committee (PAC) may also conduct reviews or hold inquiries into matters raised in performance audit reports.

Agencies are also required to report actions taken against each recommendation in their annual report.

To assist agencies to monitor and report on the implementation of recommendations, the Audit Office has prepared a Guide for that purpose. The Guide, *Monitoring and Reporting on Performance Audits Recommendations*, is on the Internet at [www.audit.nsw.gov.au/guides-bp/bpglist.htm](http://www.audit.nsw.gov.au/guides-bp/bpglist.htm)

### **Who audits the auditors?**

Our performance audits are subject to internal and external quality reviews against relevant Australian and international standards.

The PAC is also responsible for overseeing the activities of the Audit Office and conducts reviews of our operations every three years.

### **Who pays for performance audits?**

No fee is charged for performance audits. Our performance audit services are funded by the NSW Parliament and from internal sources.

### **For further information relating to performance auditing contact:**

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Performance Audit Branch  
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## Performance Audit Reports

No.	Agency or Issue Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
64*	Key Performance Indicators	<ul style="list-style-type: none"><li>▪ <i>Government-wide Framework</i></li><li>▪ <i>Defining and Measuring Performance (Better practice Principles)</i></li><li>▪ <i>Legal Aid Commission Case Study</i></li></ul>	31 August 1999
65	Attorney General's Department	<i>Management of Court Waiting Times</i>	3 September 1999
66	Office of the Protective Commissioner Office of the Public Guardian	<i>Complaints and Review Processes</i>	28 September 1999
67	University of Western Sydney	<i>Administrative Arrangements</i>	17 November 1999
68	NSW Police Service	<i>Enforcement of Street Parking</i>	24 November 1999
69	Roads and Traffic Authority of NSW	<i>Planning for Road Maintenance</i>	1 December 1999
70	NSW Police Service	<i>Staff Rostering, Tasking and Allocation</i>	31 January 2000
71*	Academics' Paid Outside Work	<ul style="list-style-type: none"><li>▪ <i>Administrative Procedures</i></li><li>▪ <i>Protection of Intellectual Property</i></li><li>▪ <i>Minimum Standard Checklists</i></li><li>▪ <i>Better Practice Examples</i></li></ul>	7 February 2000
72	Hospital Emergency Departments	<i>Delivering Services to Patients</i>	15 March 2000
73	Department of Education and Training	<i>Using computers in schools for teaching and learning</i>	7 June 2000
74	Ageing and Disability Department	<i>Group Homes for people with disabilities in NSW</i>	27 June 2000
75	NSW Department of Transport	<i>Management of Road Passenger Transport Regulation</i>	6 September 2000
76	Judging Performance from Annual Reports	<i>Review of eight Agencies' Annual Reports</i>	29 November 2000
77*	Reporting Performance	<i>Better Practice Guide A guide to preparing performance information for annual reports</i>	29 November 2000
78	State Rail Authority (CityRail) State Transit Authority	<i>Fare Evasion on Public Transport</i>	6 December 2000
79	TAFE NSW	<i>Review of Administration</i>	6 February 2001
80	Ambulance Service of New South Wales	<i>Readiness to Respond</i>	7 March 2001
81	Department of Housing	<i>Maintenance of Public Housing</i>	11 April 2001
82	Environment Protection Authority	<i>Controlling and Reducing Pollution from Industry</i>	18 April 2001
83	Department of Corrective Services	<i>NSW Correctional Industries</i>	13 June 2001

No.	Agency or Issue Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
84	Follow-up of Performance Audits	<i>Police Response to Calls for Assistance The Levying and Collection of Land Tax Coordination of Bushfire Fighting Activities</i>	20 June 2001
85*	Internal Financial Reporting	<i>Internal Financial Reporting including a Better Practice Guide</i>	27 June 2001
86	Follow-up of Performance Audits	<i>The School Accountability and Improvement Model (May 1999) The Management of Court Waiting Times (September 1999)</i>	14 September 2001
87	E-government	<i>Use of the Internet and related technologies to improve public sector performance</i>	19 September 2001
88*	E-government	<i>e-ready, e-steady, e-government: e-government readiness assessment guide</i>	19 September 2001
89	Intellectual Property	<i>Management of Intellectual Property</i>	17 October 2001
90*	Better Practice Guide	<i>Management of Intellectual Property</i>	17 October 2001
91	University of New South Wales	<i>Educational Testing Centre</i>	21 November 2001
92	Department of Urban Affairs and Planning	<i>Environmental Impact Assessment of Major Projects</i>	28 November 2001
93	Department of Information Technology and Management	<i>Government Property Register</i>	31 January 2002
94	State Debt Recovery Office	<i>Collecting Outstanding Fines and Penalties</i>	17 April 2002
95	Roads and Traffic Authority	<i>Managing Environmental Issues</i>	29 April 2002
96	NSW Agriculture	<i>Managing Animal Disease Emergencies</i>	8 May 2002
97	State Transit Authority Department of Transport	<i>Bus Maintenance and Bus Contracts</i>	29 May 2002
98	Risk Management	<i>Managing Risk in the NSW Public Sector</i>	19 June 2002
99	E-government	<i>User-friendliness of Websites</i>	June 2002

\* Better Practice Guides

#### Performance Audits on our website

A list of performance audits tabled or published since March 1997, as well as those currently in progress, can be found on our website [www.audit.nsw.gov.au](http://www.audit.nsw.gov.au)



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