

## CHAPTER 8

### **SA GOVERNMENT ONLINE: THE WAY FORWARD**

#### **1. INTRODUCTION**

The major outcome of the evaluation methods applied for the evaluation of *SA Government Online* was a listing of findings relating to the content and of usability problems experienced and identified. A consolidation of these was presented in the previous chapter.

The purpose of this chapter is to draw conclusions based on the findings and to provide possible solutions for the problems or deficiencies of the website. As many web design issues cannot be addressed in a standard way more than one solution is presented at times. Furthermore, the author does not claim to have presented all possible solutions for all aspects identified, but rather attempted to make recommendations that conform to the basic principles for good website design. When considering the recommended solutions, it must be kept in mind that a website is a complex combination of various aspects where the right relationship between different web design aspects has to be achieved to develop a balanced and effective website, and that all improvements must complement each other to contribute to a successful and usable total solution.

Solutions are presented according to the structure used for the discussion of website criteria in chapter four. These criteria, those discussed in chapter five, additional sources discussing successful websites, as well as the author's own experience form the basis for the solutions presented.

#### **2. CONTENT**

##### **2.1 Orientation to the website**

The site's purpose and intended audience should be declared more clearly. The website will also benefit from a more substantive orientation to the scope and content thereof. It will be useful to provide a clearer indication of what information content is available, in which cases links are provided, as well as how linking to other websites is approached. Providing an indication of how far back information on the site dates may contribute to an improved understanding of the breadth and depth of information content on the website.

Short descriptions on the main index pages of information content and the way it is handled will give a picture of what is to be expected in that specific part of the website. This will be especially useful for information such as speeches, media statements and documents, since the website carried speeches and media statements delivered from 1994 onwards, whereas only documents published since 1997 were included. As the content in the *Documents, Reports & Forms* section was not comprehensive, an explanation can be provided about categories of documents that are included and omitted. In addition, the relationship of some of the entries to the Government Gazette, and how and where to get documents such as the Government Gazette and Tender Bulletin in hard copy format can be provided. An explanation about the frequency of updating for the Tender Bulletin should be provided on that page.

A disclaimer statement would ensure that the developers of the site are covered should information be out of date or incorrect. This is particularly important for a site such as *SA Government Online*, where other government bodies contribute to the information on it, either by providing updated sites themselves, or by providing information to the *SA Government Online* developers.

## 2.2 Authority of the website

It is recommended that a clear indication be given that the *SA Government Online* website is the official website of the South African government. This may avoid confusion since another website (maintained by a private company) also provides comprehensive government information.

The possibility of including the URL on documents should be considered. This will assist users to identify where the information originates from when pages are printed. It is further recommended that contact information for authors be included where omitted, so that users can obtain more information on the relevant topics if so required.

It will be necessary to reconsider the way in which the source indication for the *South Africa Yearbook* is handled. Despite the fact that the *SA: An Overview* page indicated that the information accessible from the page had been sourced from the *South Africa Yearbook*, the individual chapters of the yearbook should also be sourced as such to have this reference available when individual documents are printed. To avoid a situation where links do not correspond to the information found at the other side thereof, cross-referencing to

the *SA: An Overview* index page from pages where the *South Africa Yearbook* is used in other sections of the website should be removed, as this page also included links to information from other sources.

Discrepancies between this website's content and the same content on other government websites reflected negatively on the authority of the site. The immediate assumption in such instances would probably be that it was the government website's information that was not correct or up to date. This situation should be rectified as a matter of urgency, since it may reflect negatively on the integrity of the entire website. The site should be thoroughly checked to ensure that the information is error-free and accurate, that all information is updated and that changes are implemented consistently across the site on all relevant pages.

The web developers should ensure that all pages consistently display the phrase "Maintained by Government Communications". In addition, the provision of contact information for authors of documents should be consistently applied.

### **2.3 Comprehensiveness/information coverage/scope**

By its nature, the *SA Government Online* website must contain or link to a vast amount of material to meet the needs of all users seeking information about the South African government and South Africa in general. In meeting these needs, it seems as if the website presented a fairly comprehensive and balanced choice of material. However, when compared to the types of information covered on other government websites (see chapter five), and considering the scope of South African government activities and documents available in hard copy format, this is an aspect that could be improved upon.

With regard to the breadth of information, information such as public service vacancies, government projects, campaigns and programmes, government services, and the history of the South African government should be added to the site. In addition, the provision of information about policies and opportunities for discussions on these policies, as well as the inclusion of a section covering frequently asked questions (FAQs) could contribute to an enhanced website. This section should contain real questions with detailed answers, and should give users adequate guidance so as to not leave them confused. Not every query should be added, as it will become difficult to find the appropriate FAQ. Government should also consider the dissemination of consumer and issue-orientated information, i.e. information for solving day-to-day problems and coping with life.

With regard to the depth of information, all categories of the website should be reviewed for the possible inclusion of additional information, and government sites should be scrutinised to identify relevant categories and information to link to or to post on the site. The following is recommended:

- In particular, all subcategories at *Government Documents, Reports and Forms* with incomplete information should be expanded. This includes government forms, white papers, notices and other documents and reports. Additional sub-categories should also be added, such as regulations, Hansard, national and provincial gazettes and annual reports. When adding the Government Gazette, the *Government Documents, Reports and Forms* index page should be altered to include separate entries for notices, regulations promulgated in terms of legislation and proclamations. In line with international sites, the website should also provide or link to more detailed legislative information, for example the status of legislative documents. In addition, it could be expected that this website should at least carry information relevant since the time the new South African government came into power, i.e. 1994. The category *Government Documents, Reports and Forms* could also be expected to contain older documents, for example Acts which were promulgated before 1994 and which are still valid.
- Although the information on government structures, functions, officials and contact information was found to be relatively comprehensive, it is recommended that more detailed information on organisational structures and additional contact information (also on provincial level), information on the government 'clusters', as well as profiles of senior departmental officials be added. The website should also contain more detailed information about government bodies and institutions, especially those specifically mentioned in the South African Constitution.
- As with the other categories, information on government activities, programmes, events and news should be extended. The most important information to be added is that of government programmes and projects, as well as feedback from government on its delivery. Other information that will add value to the website include information on key issues such as HIV/AIDS and additional 'events' such as the diaries of government officials and other government activities, the launch of government projects or programmes and so on.

It is recommended that that the site developers consider formulating selection criteria for the selection of events to ensure that they differentiate between an 'event', the announcement of new information, important news and different types of events. They should also consider formulating policy on the length of time an 'event' should be carried (including how long before the actual event the announcement should be made).

- The first aspect to be improved at the *Speeches* category is the comprehensiveness of speeches made by provincial government officials, and perhaps also senior local government officials. Furthermore, a decision should be made with regard to the sub-category *Speeches by foreign delegates* – either to remove it, or to make it more comprehensive and then to update it regularly. If retained, it should also be made available from the web pages, and not only from the search page. Another aspect to consider is the inclusion of speeches in formats other than text, inter alia audio and video.
- An attempt should be made to get the availability of provincial government information on par with that of national government, and to treat this information in the same way as that of national government. Events, activities, programmes, documents, speeches, and other information on provincial government level should feature to the same extent as national government information.

The author realises that providing a comprehensive overview of local government structures on this website will possibly not be a realistic goal in the immediate future due to the wide span of local government structures, as well as the limited number of local government sites available. However, providing more detailed information on local government structures in general, basic contact information, information on local government officials, and a more detailed listing of local government websites should be considered.

- Consideration should be given to expanding the information about the country (*SA: An Overview*) even further, for example to include statistical and census information, a country profile, demographical information, information on the history of the country, and information on tertiary institutions. Information that informs or educates users about prominent issues affecting their daily lives, for example HIV/AIDS and other health issues, setting up a business, housing subsidies, and so on should also be considered.
- Making the tourism and business sub-categories more interesting and attractive could

contribute towards attracting tourism and investment to the country. The newly launched (March 2002) SA Tourism website can be an important source of information in this regard.

- It will be worthwhile to re-evaluate the *SA Webs* page with regard to the selection of sites linked to. Criteria for inclusion of resources should be developed and implemented. Lutkenhaus (2000) recommends that criteria for government resources could, for example, be that the servers on which the information exists be controlled and managed by a state agency, and/or that the server must have an obvious government domain. Also, local government links could be included if the server is managed and controlled by a local agency or is a government server that has a domain name that is obviously a city. With regard to non-government sites, she recommends that the criteria be determined even more carefully and in line with government or departmental policy. Evaluation criteria for the inclusion of personal sites and the like should include the type of site as well as the quality or standard thereof (Lutkenhaus, 2000).
- An expansion of the site to also include information in non-text formats could contribute to a more diversified and interesting presentation of information. However, as some pages downloaded slowly, this aspect should be carefully approached until such time that bandwidth problems have been addressed satisfactorily.

The official website of the government should contribute towards two-way communication between users and the government. It is therefore recommended that more should be made of this feature and that a separate section on the website be developed for so-called digital democracy. Opportunities for users to comment on government policies, programmes and activities, or to e-mail the president or other government officials directly should be built into the website. However, it is not clear if all these officials will welcome an increased flow of electronic mail from Internet users and if they have the capacity to respond. The same argument is relevant to government departments. E-mail users usually expect rapid responses, and poor servicing of these services may be hazardous to the government's image. It will therefore be important to find a way to diminish expectations and to make it clear what reaction users might expect. Online chatting is another way the website can facilitate two-way communication. It is, however, recommended that government officials, to ensure that users do not abuse it, moderate this facility. Online surveys or questionnaires to get the opinion of users on specific issues concerning government may also be considered, as well as the possibility of including an 'add a link'

form to request links to be added or existing links to be modified. Another aspect that can be improved is the provision of contact information such as telephone numbers and e-mail addresses for specific products and services available from the website. Government should also use the website to ask for comments on proposed legislation or other policy documents.

Listservers could be implemented to bring together users who are interested in a specific interest area. This is a relatively simple way to allow people with similar interests to share ideas, publications and information online. The listserver can thus form a useful forum where members exchange relevant and topical information or request hard-to-come-by information. These lists can function with a central list owner or with multiple list owners who have equal or varied levels of access. Lists can be public or private, open or closed, moderated or unmoderated. Listservers can be used for announcements or discussions. Announcement lists function like traditional newsletters: the mail messages flow in one direction, from publisher to subscriber. Discussion lists function like a public forum, providing a place where subscribers can receive information, ask questions, offer advice and exchange ideas (Canada, Treasury Board, 2002b).

An excellent way to improve accessibility is to include an 'information-on-request' facility to provide users with specific government information they are interested in. This notification technology automatically sends information to users based on preferences they have submitted. This can, for example, be used to notify a business of new regulations that may affect it (Atkinson & Ulevich, 2000:18), or to notify users about updates on specific topics.

## **2.4 Currency and timeliness**

The lack of updated vision and mission statements and departmental contact information featured strongly in the evaluation findings. To solve this problem the developers of the site could reconsider the way in which information content versus linking is handled. Should they decide to keep information such as the mission, vision, functions and contact information of government departments on the site, care should be taken that the information corresponds with the information on the individual websites of departments, and also that the content is comprehensive enough and updated. If users still have to go to other government websites to find some of the information this whole exercise will be futile. It should be kept in mind that this option means that the site developers will have to spend time and effort to continuously check government websites for updates, and to update the *SA Government Online* website accordingly. Another solution for this problem could be to

remove some of this content from *SA Government Online* and to ensure that the relevant information on government websites is easily accessible from the website through clear and logical linking practices. The disadvantage of this is that users will be presented with different levels of detail on each website, as there is no standard for web publishing in government. However, this option will probably be more logical, especially in the light of one of the objectives of the site, i.e. to avoid duplication regarding the availability of government information on the Internet (*SA Government Online* website, 2000).

Moving towards a database environment can significantly enhance updating (and searching) of contact information, as well of all pages that are being updated frequently. Data input needs then be done only once, with all relevant pages then being updated dynamically. The site developers will thus not have to manually update pages any more and no longer run the risk of missing a page.

Other issues that will need attention:

- An indication of the update frequency of the site should be given. As both static and dynamic data are available on the site, this can be explained in the overview document or alternatively on specific pages, or both.
- The site design should provide for the consistent display of the 'last updated' indications on all pages. The website should thus be checked to identify pages where these dates were omitted.
- The website should be thoroughly checked for dead links, and these must then be corrected. This requirement applies to internal as well as external links.
- In line with Kirk's (2000) requirement that users should always be in a position to know how current information is, it will be useful to label information entries with dates to indicate their original publication or delivery dates.
- Several aspects of the *What's New* section were found to be unsatisfactory and are discussed in paragraph 3.1.2.

## 2.5 Objectivity and fairness

As this aspect of the website was found to be satisfactory, no recommendations are presented.



## 2.6 Writing and editorial style

It is the author's opinion that ambiguity of menu entries, link text and headings contributed to the difficulties in navigating the site and thus to find the information needed – as users did not know what to expect on the other side of the links or what heading to choose to find specific information. It is recommended that improving this aspect be made a priority. Links and headings should be thoroughly checked to ensure that the labelling is logical and gives a clear indication of the content that follows. Ambiguous titles such as "general" and "index" should be removed and replaced with short but descriptive titles. The developers should also ensure they are consistent with regard to labelling the same content at different locations on the website.

Other minor aspects that need attention:

- Include headings on the few pages where they were omitted.
- Correct page titles that do not correspond with the content of the relevant page, or are outdated, or where page titles are inconsistent with regard to naming conventions on the website.
- Ensure that all web documents contain HTML titles or, in the case of PDF documents, that the fields are indexed. This will assist users to identify relevant documents in the results browser when making use of the search engine.

## 2.7 Language

The author does not believe that it will be practical to present the site in South Africa's 11 official languages, as the majority of official government documents are published in English only. However, the use of official languages other than English for information that will also be used by less sophisticated users (as at *National Symbols*) should be extended. Consideration should also be given to allowing users to communicate with government in languages other than English.

### 3. INFORMATION ARCHITECTURE/ORGANISATIONAL STRUCTURE

#### 3.1 The home page and *What's New*

##### 3.1.1 The home page

Respondents and heuristic evaluators had trouble to gather what information was available on the website from the entries provided on the home page. A web usability study by Nielsen (1994b) found that users praised screens that provided overviews of large information spaces. In line with this finding it is recommended that the home page design for the *SA Government Online* website provide users with an improved overview of the content thereof, as well as an improved entry point to the maze of online government information.

It is the author's view that problems experienced with the choice of information entries on the home page were related to the deficiencies in the overall organisational structure/architecture of the website, as discussed in chapter 7, paragraph 3.2). The author believes that a clear and simple organisational scheme for the website as a whole will assist in a logical choice of entries on the home page, logically representing the information to be found at the deeper levels of the website.

To ensure a logic selection of main entries on the home page the web developers should among others consider factors such as important and frequently needed information and the need to ensure that all information available on the site is evident from the home page. With regard to the first, evaluating frequently used information on the site, could be done by logging real use thereof. With regard to the second, decisions on the overall organisational structure of the website should always take into account the implications that it will have on the way information will be presented from the top level of the hierarchy to the deeper layers.

Since the developers did not follow the organisational approach recommended for the organisation of government websites (inter alia to avoid the practice of reflecting government structures – see chapter five), they should consider adapting the access structure to also include topical entries reflecting the activities of government.

However, the developers should still keep in mind that as this is a relatively big informational site, it will be difficult to represent all content in detail on the home page. The labelling of category headings should therefore be carefully considered to give a true and accurate reflection of the content thereof. There are various options to consider to make it more evident to which content entries will be linking to or what information is available on the website. To eliminate the “which heading do I want” guessing game, main headings could be listed with sub-headings underneath them, or a mouse-over functionality could be used to describe links, e.g. by means of a text description or a drop-down menu. Yet another option is Gahrn’s (1996) suggestion of offering a general category listing on the home page linking to a number of ‘sub-sites’, containing their relevant sub-menus. Each sub-menu then becomes a mini home page for that section of the website. These sub-sites might also be a solution for structuring the information that is difficult to represent hierarchically.

Improving the organisation and display of information on the home page as part of the page design may also contribute to finding information more easily. Less detail on the home page, resulting in a less cluttered look and feel will improve the impact of the main issues. Should this recommendation be followed, it will probably impact on the way *What’s New* and *Events* will be handled. Recommendations in this regard are discussed in paragraph 3.1.2 of this chapter.

The way elements were displayed (fonts for main categories, graphics for events, small fonts for events, small fonts for *What’s New* entries) should be reconsidered. Should *Events* remain displayed on the home page in the same way as during the evaluation period, the graphics used for the announcement of events could be smaller to allow balance with the text announcements that is ultimately the most important element and should as such be easily readable. In addition, the display of the search option on the home page should be reconsidered. For a site as comprehensive as this, it can be expected that a substantial number of users will prefer to use the search option. It will thus be preferable to have it more prominently displayed on the home page, possibly as part of the general category listing or even on its own. Displaying the search box for a simple search, combined with the option to access an advanced search page is another possibility. These two changes will save users from having to scroll down to the search button that then jumps to another page.

### 3.1.2 *What's New*

The way new information was announced caused substantial usability problems and dissatisfaction amongst evaluators and respondents.

The *Government Online* website is an active site with new information and events posted on the home page at least daily. Displaying all this information and keeping it available here for a reasonable length of time created many of the problems experienced by respondents and evaluators. A possible solution is to relegate the *What's New* feature (or the *Events* or both) to a next level. The *What's New* button should then be displayed prominently on the home page. This will also address the problems experienced with a too long home page, the font sizes and the cluttered appearance of the home page, as well as how to present additional information categories. It will also allow the presentation of all new information for all categories for a specific period on the *What's New* page, and provide users with an indication of the date of publication of the new information and of when specific documents were posted on the site. Additionally, it will allow flexibility for the presentation of events, possibly the grouping of specific types of events. The website strategy should determine the time period that an entry should be carried on the *What's New page* before it is removed from this page.

Attention should be given to the way users get access to the latest additions from the *What's New* section. It is good Internet practice to allow users access to information as directly as possible, and the practice at the time of the evaluation of not having individual entries clickable was not acceptable. Each entry should link directly to the specific document it refers to, without the additional step of going to an index page from where the entry has to be found and selected again.

The development of an e-mail notification service whereby updates about issues as subscribed to by individual users are forwarded to the subscriber is recommended. This may contribute to users being more aware of the last updates on the website. This facility should be developed in such a way that users are redirected to the website, thereby creating an additional marketing opportunity.

As the *SA Government Online* site website was supposed to be the entry point to all government Internet information, the author does not find it acceptable that only content posted on this website was announced at *What's New*. New information posted on other South African government sites, or at least the most prominent information published on

these sites should also be announced, with an indication of and link to the applicable site where the information is available.

### 3.2 Organisational scheme of the website

On the basis of the findings of the evaluation, the author is of the opinion that the *South African Government Online* website did not optimally provide users with a clear, obvious structure for traversing the information space. Contributing factors were the lack of a clear, obvious framework, an inconsistent hierarchical scheme, unnecessary fragmentation of information and because the availability of some information was not evident enough from the home page. Thus the overall usability and efficiency of the website were negatively affected.

It is the view of the author that the organisational scheme was a main contributing factor to problems such as users browsing the website not finding specific information, even though it was available, or users finding incomplete information on a topic, as they would not have known that there was more information available on the same topic. It is also worth noting that respondents to the online survey and user tests suggested the inclusion of information such as legislation and the Constitution – all of which were already available on the website. Possible explanations could be that first-time users did not realise that the information already existed, or that the availability thereof was not apparent enough. The inconsistent hierarchical scheme also contributed to the inconsistent sidebar entries – sometimes it contained links to relevant categories and at other times links to additional information categories (see chapter 6, paragraph 3.4.1 and chapter 7, paragraph 4.1.2). In addition, users had to understand government structures, activities and terminology to find information either through searching or browsing, as the site was structured according to the organisational structure of government.

Should the site be redeveloped, the restructuring of information will have to be one of the main priorities. The author recommends that particular attention be paid to the aspects discussed in the following paragraphs.

A new design and layout for *SA Government Online* will have to involve a replanning of the information architecture. The aim should be greater simplicity and uniformity between the different sections of the site. The information architecture should be simple and easy to navigate for new, inexperienced, and less frequent users. However, shortcut routes should also be available for more experienced and more frequent users. It is recommended that the hierarchical scheme be retained, since this is the most familiar concept to most users

and, according to Lynch & Horton (1997), one of the best ways to organise complex bodies of information. Decisions, however, will have to be taken on the following:

- How information should be broken down into logical and digestible parts and how it should be organised into modular units.
- The relative importance of concepts to enable hierarchy building from the most important or the most general concepts.
- The way the hierarchical scheme should be applied and in which way the various layers should be presented. The objectives should be a less complex and more consistent hierarchical approach, an interface where users would be able to see at a glance where they are and what information is available within the structure of the site, and reaching information required via the shortest possible route.

Decisions on the information architecture of the website should follow a holistic approach as it will have an effect on the navigation, home page design and overall design considerations.

It is the author's view that the fragmentation of information has caused users who favoured browsing to find incomplete information on certain topics, as they would not have known information on the same topic was available elsewhere too. Also, on finding similar information at different destinations, users might have wondered whether the different pages were not in fact identical. Users should not be put in a position where they have to figure out which information relates to a specific topic or where information was duplicated. Documents that logically relate to each other should be grouped together in the same category or sub-category, and then made accessible from a single page. Links for cross-referencing from other relevant pages could then be included on these pages.

Care should be taken not to effect changes in such a way that it results in a deeper layering of information structures. The goal should be a hierarchical structure of not more than three layers but where the information is less fragmented than was the case when the website was evaluated, and where users will find the information they want in the fewest possible steps. In planning for this objective a balance will have to be found between long menu pages with long lists of information and shorter menu pages that might lead to excessive fragmentation. As stated before, this site is a large information site, and therefore the better approach will probably be to have a higher branching factor for index pages to save an extra layer. This recommendation is in line with recommendations by Lynch & Horton (1997) in this regard (see chapter four, paragraph 3.2.3).

The author is of the opinion that the findings indicated that the website did not always make use of its medium, as content originally published for other mediums was duplicated without providing maximum value-added features. To optimally make use of the web environment, information must be presented in such a way that the content of long documents is more visible. Larger documents should be chunked into smaller but logical units to prevent unnecessary scrolling so that they are easier to read online. Tables of content should be provided to provide access to the different units, and the chunks may be linked by navigation support options such as 'back' and 'forward'. Frequent 'return to top' options should be used to enable users to return to the table of content without unnecessary scrolling. In addition, the complete documents should also be available so that users may print them as a whole. Using the original titles of information products or documents will ensure that users who are familiar with government structures and information will be able to find this information more easily on browsing the site, or on searching for the specific title. In addition to chunking larger documents, specific sections or chapters of documents should also be grouped together with other information on the same topic.

The practice of providing different alternatives for accessing some of the information categories can be considered a value-added feature of the website, as it attempted to accommodate individual user preferences. This practice should therefore be extended. Furthermore, the practice of 'functional' organisation of information should be expanded (for example to offer information according to topics) to run parallel to the current approach. In practice this will mean that information on the site, irrespective of whether it covers national, provincial or local government, will be organised according to topics, rather than according to government structures.

Recommendations with regard to the handling of specific information categories include the following:

- Speeches and media statements. There are different options to address the problems experienced with this information. One option is to present speeches and media statements separately. This will mean that the *Searchable Database* page will have to display them as two different collections to choose from. Index pages will then also have to be created to provide for the respective access options (according to date and according to source). A second option is to keep the speeches and media statements as one category. In this case all headings and labels should be changed to reflect this so that users will know what to expect. For both options a database field will have to be

added and all existing information be re-categorised, a time-consuming and human resource intensive exercise.

A complete listing of speeches should be available on selecting the category from the web index pages. Alternatively a direct link from the results pages to the rest of the relevant speeches should be provided. The author acknowledges that the practice of listing a limited number of entries was probably followed for faster downloading speed, but is of the opinion that it was done at the expense of accessibility of information and that it could have contributed to users being in the dark about the availability of more information. It should not be expected of users to guess that there could actually be more documents available than those listed, and then to know how to find these. Nor should they have to browse again to find them.

Another aspect to address is the accessibility of speeches and media statements of government officials no longer in office. These speeches and media statements should also be accessible from the web pages and not only from the search page. The same is relevant for *Speeches by foreign delegates*.

- Contact information. Access to contact information should be simplified. A solution more logical than grouping it as part of *Government System & Structure* should be considered, for example making it accessible as a category from the home page. In addition, it is not logical to display different formats of the same content at different locations on the website. A simpler approach can be followed, for example the development of an index page that provides access to all relevant groupings of government departments or bodies. Entries should link to different pages, each containing contact information for the specific grouping. Access should also be provided to the various contact directories as complete documents, so that users will be able to print them easily. These links and documents should be labelled according to the original titles of these directories (e.g. *Directory of Contacts*). Should cross-referencing be necessary from other parts of the website, it should link to the relevant content in this section of the website. Should a database application for contact information be developed (see paragraph 2.4 of this chapter), a link on the entry page for contact information to a scoped search facility could be provided. The search should be developed to be highly flexible with regard to search facilities as well as results displayed.



- *Documents, Reports & Forms.* The categorisation for this category should be reconsidered to provide for the additional categories suggested in paragraph 2.3 and for the Constitution. The index should not be displayed in the side navigation bar together with the other navigation options, but should rather be placed at the top of the page or somewhere else on the page where it would be easily identified as such.
- Links to external websites. To simplify access to these, all links should be grouped together and made accessible from a central location. A high level link, possibly on the home page, linking to a topically arranged index page of all links to external websites is a possible solution. In addition, other sections of the website should include links to external websites where relevant.
- *South Africa Yearbook.* It is the view of the author that the way in which use was made of the *South Africa Yearbook* on the site contributed to the problem of scattered information on the website and to the difficulty of finding information. The use of the *South Africa Yearbook* on the site will thus have to be re-evaluated. In the first instance, it is recommended that it be made available as a complete publication at the *Government, Documents, Reports and Forms* category in both PDF and HTML formats. Where specific chapters are used at the *Government System* or *SA: An Overview* categories, only relevant information from these chapters should be selected, and not necessarily the complete chapters. This information should be presented in HTML format as short documents, accessible from indexes linking to individual topics. Where information from the Yearbook is supplemented with information from other sources to make information on topics more comprehensive, separate entries should link to the different subtopics, and when the same topic or subtopic is covered by different sources, new text will have to be prepared to provide a comprehensive entry for the specific topic.
- Online democracy. It is recommended that all functionality for interaction between government and users be presented together and made accessible from one page. To make this page optimally visible, it should be available from a prominent place on the home page.

## 4. NAVIGATION AND SEARCH

### 4.1 Navigation

During the evaluation of the website, many comments were made on its navigation and solutions presented for the possible improvement thereof. The general problem was that navigation was overdone, too complex and inconsistently applied, thereby confusing users and making it difficult to move within the website. It is thus recommended that navigation be simplified and made more consistent. In determining a linking strategy for the website, the web developers should decide on the type of links, how to distinguish between the different groupings of links and how and where these groupings should be displayed on the website.

Attention should be given to the following:

- Top navigation bar. The display of structural links in the top navigation bar should be more usable. It is no use having such links if users do not use them. Issues to consider are the readability thereof and the consistent treatment on deeper level pages in relation to the presentation thereof on the home page. The latter includes the sequence of presentation and choice of terminology. In addition, should the redeveloped site also make use of main navigation options at the top of pages, the repetition thereof at the bottom of pages could possibly assist users to navigate without having to scroll back to the top of pages.
- Provision of 'breadcrumb trails'. As this practice was followed on some pages, users may have expected the same trend on all pages. This type of link on all third-level pages and deeper level pages will be useful for users to see the pages in context, and thus to interpret them better (for example *South African representatives abroad*, the respective pages containing contact lists and the page containing the government diagramme). It will also enable users to move back more easily to the higher level in the organisational hierarchy if the page is not what they want or when they arrive on pages bypassing the higher-level navigation pages.
- Side navigation bar. It seems as if the side navigation bar was earmarked for contextual navigation. However, this goal was not achieved as links were provided indiscriminately. It seems as if all links that did not fit logically on specific pages were accommodated here, thereby causing this navigation to become fuzzy, complicated, inconsistent and thus confusing. This practice might have contributed to decreased

usability, resulting in users having to figure out where links would take them or simply avoiding them altogether. The author believes that the way information was organised on the site contributed to the way the sidebar entries were applied and that changes to the organisational structure will also contribute to improving this aspect of the website. Another factor contributing to information not being found from the side navigation bar could have been that entries were not labelled clearly enough for users to understand what information was at the other side of the link (see chapter seven, paragraph 2.6).

*Consistency of links.* The most users do not understand information is available at the site.

It might be a good idea for the site developers to redefine the functionality of the side navigation bar and to ensure that it is used in a consistent way. The developers should decide what the real purpose of the sidebar is – to link to information that does not logically fit into the current organisational scheme, or to act as a tool that provides logical and intuitive movement to relevant information presented on specific pages. Organisational restructuring of the site to accommodate the problems described in paragraph 3.2 will probably contribute towards reducing the options provided in the side navigation bar, so that only the most useful features would be displayed. This planning and decision-making should be done in the initial planning phase for the site – before any ‘real’ designing commences.

*Use of the sidebar for navigation.* A site has only one sidebar.

- Long documents. Difficulty to find information in long documents was, amongst other, caused by the unavailability of bookmark links or indexes to assist navigation. It is recommended that this practice be adopted as a standard practice for the whole of the website. Longer text pages as well as some index pages (for example *Documents per subject* and the other document index pages) will be more useful if ‘top of the page’ options are available. In addition, pages such as *The Presidency* will be more usable if a link from the *Deputy President* section was provided at the top of the page. In contrast, on pages such as *Deputy Ministries* and *Speeches and Press Releases*, links such as *President*, *Deputy Ministries*, or *Speeches per Annum* respectively will be more suitable than ‘top of page’.

*Consistency of a more integrated list* and to make documents being

Long documents are good when one expects users to print out or download pages for future reference. A disadvantage is that long pages of 40KB or more may take too long to download. With multiple short pages the index will jump to many shorter pages that treat just one subject each. It will not take long to view, but care should be taken that this is not used for pages that users may want to download or print.

*the home page, the application of “breadcrumb” trails, not to clutter, the sidebar,*

*the sidebar, display of links in the bottom navigation bar, etc. as an. A sidebar will con-*

- Long index screens. As this is a big site, fragmentation can occur easily (as was the case at the time of evaluation), causing users to lose context. The author believes that it will be better for this site to display index information or menus on one or two screens, instead of having too many screens with few entries. The cost in time and the annoyance of having to 'flip' continually between two or more screens will outweigh any possible advantage gained in splitting the information across multiple screens.
- Description of links. To assist users to know what information is available at the other side of links, especially with a site as large as this one, the recommendation of Serco (1999a) to explain on menu pages what links contain may be considered. This may be achieved by 'mouse-over' text descriptions of the content linked to or drop-down menus to provide a listing of further sub-categories. Users should also be informed in advance when a link may be slow.
- Navigation aids. Additional features may be considered to assist users to form a mental model of the website, to orientate them within the website, to help them keep track of their position in the website, to navigate the information space, to improve their understanding of the organisation of the website and to ease the finding of information on this and other government websites. A site map can, for example, provide a mental model of the website, and organisational tools such as alphabetical, chronological and functional/topical indexes or help sections could be developed. The navigation structure must provide a more prominent display of these methods to enable users to make quick and easy decisions on the options available to them. In addition, augmenting the web browser's 'Back' and 'Forward' buttons with 'next' and 'previous' buttons will enable users to navigate information in sequence to page back and/or forth through the pages of an ordered sequence of pages or documents. The provision of tables of content for users who are not familiar with the website structure or the nature of content should be considered. This will provide a general overview or outline of content to lead users to appropriate topics (Welinske, 1998). In addition, additional cross-referencing may contribute to a more integrated feel and to finding documents relating to each other. The site also needs a way to provide visual and functional confirmation of the user's whereabouts in the site.
- Consistency. Consistency should be attained in all navigation aspects of the website, for example the display of structural links in the top navigation bar in relation to that on the home page, the application of 'breadcrumb' trails, menu structures, link selection in the sidebar, display of links in the bottom navigation bar, and so on. A simple and clear

navigation scheme for the website will have to be worked out as an overarching style and then consistently applied.

Other aspects that need attention:

- The duplication of structural links should be eliminated.
- All links must be easily identifiable as links, so not to be confused with headings.
- Care should be taken that all links are easily readable. Fonts, font sizes and background colours should be reconsidered when redesigning the website.
- It is recommended that the site be thoroughly examined to ensure that all links work.

## 4.2 Search

In the light of the fact that the search mechanism presented problems to respondents and evaluators alike, and considering the probability that this might have had a negative impact on the overall success of the site, it is recommended that improving it be made a priority.

As stated in chapter four (paragraph 4.3.2) the ordinary user is not good at formulating queries. In addition, according to Chowdury (1999:219), web search engines are inferior to retrieval engines that come with commercial databases available in the market, and users accustomed to these searches find the web search interface less attractive and less easy to use. Based on these assumptions and the findings of the research, the author doubts if many of the *SA Government Online* users would have been able to use any of the two search mechanisms effectively. In addition, users not familiar with the South African government may have found it difficult to define the correct search terms. To support users optimally, the following improvements are recommended:

- The use of two search mechanisms for different information on the site confused respondents and experts and may have contributed towards users not finding specific information despite the fact that it was available on the site. Although an explanation was provided at *Help*, the normal user would probably not have read it and would therefore not have realised that different sets of information were searchable by means of these different search mechanisms. It is recommended that using different search mechanisms for different content be discontinued. Regular 'simple' and 'advanced' search mechanisms should be provided, both allowing searches over the total content of the website.

- The search interface should be simplified to enable experienced and inexperienced users to use it without difficulty. The first aspect that should receive attention is the use of pull-down menus. As users often do not scroll down drop-down lists, all options should be visible on the drop-down screen. Secondly, the query boxes should be enlarged to encourage users to use more terms when searching – users often do not know that the box scrolls to accommodate longer search strings. Thirdly, personalisation of the search page may contribute to accommodating experienced as well as inexperienced users. Lastly, the practice of indexing officials' names as part of the title field when they delivered speeches or issued media statements was not a logical solution for indexing speeches and media statements. It cannot be expected from users to know that entering an official's name in the title field is the way to find the speeches or media statements of this official. A more logical solution will be to add another database field to provide for the name of officials when speeches or media statements are indexed. This will make it possible to find speeches of specific officials without returning all documents containing that official's name.
- The search engine should allow for natural language searching and should support additional functionalities such as stemming, phrasing, truncation, wildcards, proximity searching and case sensitivity.
- The developers may consider developing a search page similar to that of Yahoo, where users will be able to search for information from hierarchical categories rather than keywords.
- An expansion, and even a more prominent display of the help function, is recommended. It is important that users are informed of how searches may be executed (for example boolean, proximity), whether stemming is supported, how weighting is done (e.g. is there more functionality than only weighting according to frequency of occurrence of search terms, the place of occurrence of the terms, and so on), what the meaning is of terms such as 'power search' and 'author', how truncation and wild cards function, whether headings are indexed, to what depth pages are indexed, if stop words are available and how they are determined, etc. Formulation of queries can also be explained in more detail. Clarity on the scale of resources and the type of terminology used will also contribute to improved query structuring.
- Although Nielsen (1994b; 1997c) warns on the danger of scoped searches, the author suggests that this site implement scoped search facilities for certain subsets of

information on the website, for example for contact information and for speeches and media statements respectively. Care should be taken that it is clear to users which information is included in the scoped search and which not. A clear distinction between the two types of searches will have to be made. There should also be a direct link to the global search page (Nielsen, 1994b. 1997c).

#### 4.1 Design and layout

- With regard to the display of search results, attention should be given to the text descriptions provided together with the document title – as it was found to be not descriptive enough, the developers should consider changing it to be more descriptive of the document content. In support of this, the search results may provide additional context for the documents found by presenting the results in relation to the structure of the website (e.g. name of collection, category or database, then sub-category, and so on). In addition, document sizes should be displayed.

Clustering of results and the functionality to do a second level search should be possible. Changing the parameters of the search without retyping the search every time should also be possible, as should additional sorting options, e.g. alphabetically.

### 4.3 Searching versus browsing

It is clear from the findings of the online survey that users browsed and searched the site, with the majority of users preferring to browse, even the more experienced ones (see chapter 7, paragraph 4.3). It is worth noting that those users who did find it difficult to search, also preferred to browse. These findings are contradictory to the findings of Nielsen (1997c) who argues that half of users are search-dominant, a fifth link-dominant and that the rest exhibit mixed behaviour.

A possible reason for the user behaviour on this site may be that respondents found it too difficult to use the search engine or got irrelevant results and therefore preferred to browse. Another reason could be that many of the users were not as sophisticated as the average users tested by Nielsen, and not as experienced in search methodologies and search engines, thus preferring browsing to searching.

It is, however, evident that the search engine must be improved, as the way it was set up may have influenced users' overall perception of the website, but more importantly, hindered their ability to find information. In addition to improving the search mechanism it

will be just as important to identify those issues that made it difficult to browse – thus to improve the ease with which information is found through this method.

## 5. DESIGN AND LAYOUT

### 5.1 Design and layout

To address the problems identified regarding the design and layout of the website, the following is proposed:

- The Coat of Arms. In line with requirements and current developments with regard to the development of a so-called 'corporate identity' for the South African government based on the Coat of Arms, it is recommended that it be integrated into the overall design of the website.
- Handling of events and news. The author is of the opinion that the design of the site did not provide sufficient flexibility for handling different types of events and activities and government news. The design should be altered to provide for a distinction between different types of events. For example, less important issues such as international and national commemorative days, conferences, the daily activities of government officials, etc. should be distinguished from the launch of important programmes, the president's programme and so on.
- Cluttered pages. To address the problem of cluttered pages, user interfaces should be simplified, with page elements displayed in a clean and organised manner. Organisation of information on screens should be more logical – page elements should be grouped according to the "gestalt" rules for human perception (see chapter 4, paragraph 5.1.3), so that related elements will be seen as belonging together (e.g. by clustering them as a group or unit, by displaying them closely together, by enclosing them by lines or boxes, by moving or changing them together, or when they look alike with regard to shape, colour, size, or typography, or by using colour coding, graphic borders around groups of information, or highlighting. Another option is to make use of horizontal rules (<HR>) to partition pages. The option of listing information with different icons to indicate the different parts of the list has already been mentioned, while irrelevant items should be limited. Addressing navigation as discussed in paragraph 4.1 will also contribute to a less cluttered page design.



- Use of tables. It is recommended that the way tables are applied for contact information be reconsidered. The double lines used for the borders are unnecessary and contribute to the cluttered appearance of these pages. Consider the use of spacing, alignment and indents to delimit tabular information.
- Consistency. When redesigning the website, those aspects that were inconsistently applied should be addressed. They include 'last updated' dates, footer elements such as 'Maintained by GCIS', etc. It is recommended that a layout style be established during the initial planning phase and that this style then be applied as a template in the design process.

## 5.2 Text readability and visibility

The use of different typefaces and different font sizes on different pages could have impacted negatively of the homogeneous character of the website. Standardisation thereof should be achieved.

## 5.3 Graphics, images and animation

The author believes that opportunities for enhancing the content through graphics should be explored. The site may for example include more photographs of government officials and of government activities and projects. Care should be taken that photographs personalise people or communicate information. Thumbnails could be used to avoid too large graphics slowing down the system, but care should be taken to avoid too many small thumbnail pictures where too much photographic detail is shown in too little space to be clearly visible. It may be a good idea to include a photo gallery on the site from where photographs may be downloaded, and not to provide downloadable versions from the text pages where photographs are used for graphical enhancement or to communicate additional information. Another possibility for enhancing the appearance of the site is to display the cover pages of publications, for example the *South Africa Yearbook* and some of the special reports published on the site – not only when announced on the *Events* page, but also on the *Documents, Reports & Forms* page.

In addition, it should be a standard practice on the website for the system to give advance notice of document formats and big files before users retrieve them.

## 6. PURPOSE AND AUDIENCE

The findings of the online survey revealed a correlation between frequency of use and satisfaction levels with specific aspects of the website. This could possibly be ascribed to the fact that the more frequent users became used to the site and therefore understood the website's organisational and navigation features. Less frequent users could have experienced the difficulties that the more frequent users may already have discovered and compensated for. Adaptations to the website should therefore accommodate as wide as possible an audience. It should cater for first-time, intermittent and frequent users of the website. Shneiderman (1997) believes that first-time users will need an overview to understand the range of services and to know what is not available, plus buttons to select actions. Intermittent users need an orderly structure, familiar landmarks, reversibility and safety during exploration. Frequent users need shortcuts or macros to speed up repeated tasks, compact, in-depth information and extensive services to satisfy their varied needs. For more frequent users, it could also be considered to introduce a 'personalisation' feature. This will enable these users to customise their view of the website to satisfy their specific and unique preferences.

## 7. THE WEBSITE AS ENTRY POINT TO GOVERNMENT INFORMATION

The author is of the opinion that value-added access to the broader information holdings available on other government sites did not receive the attention that it should have, and due to this much information on government sites and on government itself was difficult to find from the *SA Government Online* site.

It is important for government to provide support tools to enable users to quickly and easily navigate government information resources provided on the Internet. The first of these tools is an improved entry point or gateway site. The government website should make specific information on other sites more visible, so that users will know what is available and access it easily and directly from the entry point. The entry point should provide convenient access to all of the Internet sites operated by national, provincial and local governments. It should contribute towards saving time and aggravation in searching for government information.

There are different ways to reach these objectives. The first is to arrange information alphabetically by department or government body – the basic way is to present a list of the departments with links to their websites. This is, however, not the best way, as users often do not know which department performs which function. This home page paradigm fits

government's perceptions of itself and its internal structure and does not attempt to deliver a service that fits the needs and perceptions of users.

Another way is to arrange information by subject rather than by department or government body. Outline-based subject directories or 'virtual libraries' for browsing through lists of resources are organised according to a topical scheme, similarly to that of Yahoo. Links may be arranged by categories such as criminal justice, economic development, education, finance, health, environmental issues and so forth. Each category will then provide links to all sites containing any information on the category. This is a move away from a straight reflection of government structures to the presumed perceptions of users. It will make it easier for users to start a search for specific government information as well as for users who do not have specific information in mind or do not know what they are looking for. Browsing subject directories would make it possible to get ideas, keywords and subject terms to use in future searching. Browsing a subject directory (or a so-called master index) could also help users get an idea of the types of information available from the site. In implementing subject directories care should be taken with the selection of classification terms. Natural language has the advantage of being understandable by many types of users, but the use of non-standard subject schemes can make searching more difficult. Solutions for this potential problem include established classification schemes for government information, but at least a standardised scheme for the whole of the website should be used. In establishing such a scheme decisions will also have to be taken with regard to the depth and breadth of the classification scheme – should it cover fewer information resources, but offer more in-depth evaluation, or should it be comprehensive lists of all resources on government websites. It has, however, to be kept in mind that the latter option could result in virtually no quality control or evaluation of information that is accessible from the site. Care should also be taken that the information behind the topics does not retain its organisational/departmental basis – in other words, that the buttons are re-arranged but not the information.

Lastly, as an entry point to government information on the Internet, one would have expected to find information on other government websites by means of browsing as well as searching from this website. The developers should consider implementing a 'crawling' or 'spidering' functionality to enable users to search for government information on other servers from this one single point of entry. The provision of such a facility will allow users to find what they need, regardless of which government body produced it. Such a search engine can be helpful, especially when the user has some knowledge of the scope of the

government system and its activities. However, without this knowledge and some skill in the search process, it can be time-consuming to locate the information required.

When implementing such a solution, it must, however, be kept in mind that the performance of the chosen retrieval system with regard to recall and precision could be perceived as being worse than that of a traditional retrieval system. Chowdury (1999:213) states that relevance judgements become impractical as the size of the document set increases. A user may thus face problems concerning the recall of the retrieval system. In addition, one may not be sure of the exhaustivity of the search, as the web environment (in this case government information sites) is unconstrained and one can never say exactly how many documents should be retrieved or how many in total are available.

In developing an interface for this type of solution it should be kept in mind that the user would not know about the nature, volume, format and location of the required information (in contrast to the web developer), as information may come from a variety of different sources, located in different places, in different forms and formats, and so on. Thus, the issue of the user interface is even more critical in this environment. According to Chowdury (1999:214), the ideal solution will be where the user is allowed to search on remote systems without prior knowledge of the other systems' syntax, strategies or data content. The user only interacts with this website's interface, while the implemented computer system acts as an intermediary between the user and the other system despite possible differences in hardware and/or software. Chowdury (1999:214) also refers to a study by Payette & Rieger that concluded that in order to satisfy user requirements for the presentation of results from a multi-database search, the system will have to support merged result sets, compression of duplicates and across-database relevance ranking.

In addition, in deciding how to set up the site as search engine, it will be helpful to consider the following:

- The coverage of the database. Which of the government web resources will it include? What types of resources will be included – web pages only, listserver archives, information in databases?
- What area of the documents should be searchable? For example the page title, headers?
- What search options should be included? Should it allow for searching small subsets of the database? Should it offer boolean searching and to which extent? Should it offer sophisticated compound searching with proximity and 'not' options, etc?

Over and above the previously discussed ways to enhance the entry point, the following may also be considered:

- a FTP site alongside the website
- indexes of Bills by Bill number and/or subject
- links to other government information world-wide
- links to non-governmental sites containing government information.

## 8. CONCLUSION

This chapter provided some conclusions based on the findings of the evaluation of the *SA Government Online* website. Recommendation for the improvement of the website and for the inclusion of features to support useful user strategies were made. When evaluating these proposed solutions, it is important to remember that they do not necessarily have to be implemented exactly as suggested, but the developers should ensure that they achieve a logical cohesion between all aspects that they may implement. Management and strategic decisions about the purpose and audience of the website should determine the best approach to take with regard to content, information architecture, navigation, search, and aesthetic appeal. This will affect the options chosen and the interrelationships between these options.

The findings of especially the online survey and user tests indicated that respondents had a negative perception of the standard of government web publishing in general, and that the perceived success of the *SA Government Online* website as an entry point to government websites was influenced by these perceptions. Comments and suggestions also revealed that there was recognition of the need that provincial and national government websites should demonstrate a more standardised approach towards content, navigation, design, and options to find information. To investigate the validity of above-mentioned perceptions, the next chapter presents findings of an audit of national government websites that was conducted in February/March 2001. The audit provides an overview of the quality and usability of government websites at the time of the audit.