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INFOTERRA AUSTRALIA - GATEWAY TO AUSTRALIAN ENVIRONMENT RESOURCES

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Introduction

1. Last year the INFOTERRA national focal point, located in Environment Australia (EA), was looking for an appropriate response from Australia to the INFOTERRA reform process as requested by UNEP Governing Council decision 20/5. We wanted a model which would:

- meet the Commonwealth Government's then proposal (but since April 2000 there has been an obligationⁱ) to provide online access to all government information;
- provide the greatest information value for time spent in development and maintenance; and,
- assist the staff in the EA Library and the Community Information Unit to answer information queries which did not directly relate to the functions of Environment Australia.

2. Many Australians have access to the Internet at work or at home. Schools, universities, libraries and internet cafes also provide access. By February 2000, 28% of all Australian households had access to the Internet at homeⁱⁱ. Also, the department has been a lead agency in using the Internet to provide access to information. The Environmental Resources Information Network (ERIN) unit has used the Internet to provide access to its databases since the early 1990s.

3. At the time there were a number of government initiatives to provide seamless access to all government information. These initiatives include the GOVERNETⁱⁱⁱ project at the national and state level, as well as specific subject portal sites relating to business, health and education. The more elaborate of these

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The Australian NFP has developed a INFOTERRA Australia prototype portal site which can be found at <http://www.environment.gov.au/library/infoterra/index.html>. Denise Alexander, a member of the Library's staff, was primarily responsible for the development of this site.

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sites were based on a model of adding appropriate metadata to the web pages and using a search engine to harvest this data for the portal site.

4. A portal site seemed to be the obvious solution, but the feasibility of its implementation was dependent upon our level of in-house expertise. Although Environment Australia has been in the forefront of adopting AGLS (Australian Government Locator Service) metadata^{iv} many of the organisations to which the portal site would link have not used metadata and some may never do so. Furthermore, we do not have the appropriate search engine technology to harvest data from other sites. The decision reached was to establish a portal site where we developed a database to link to existing web pages.

Process

5. Two staff from the Library, Records Management and Community Information section of EA who had substantial experience in developing and maintaining web pages and web databases worked intermittently on the project from January to May 2000 to develop a prototype site. We began by defining the departments and agencies that should be included in the portal site. The decision was to include all Commonwealth, State and Territory, Local Government at a generic level, CSIRO (Commonwealth Scientific Industrial Research Organisation) and Commonwealth Research Centres (CRCs) departments and agencies that deal with aspects that relate to the environment.

6. The next step was to search the Internet to locate all relevant environmental websites in Australia and classify them into our chosen themes:

- Atmosphere
- Biodiversity
- Coasts & Oceans
- Environment Protection
- Heritage
- Inland Waters
- Land.

At this time we were also looking for resources relating to:

- Directories of information
- Education
- Government contact details
- Publications lists

Taking into account the type of queries we receive it was also decided to add Regulation and Reporting to the resources list. The Subject Index and Search facility were to be developed at the end of the process.

7. As each site was located it was added to the bookmark facility in Netscape. As we worked through the project this bookmark file was saved and used as a working html page for the development of the theme and resources pages. As work progressed on the development of the site we continued to find sites that had been missed. We also found that, as other sites used different thematic and structure groupings to ours, it was more effective on our html pages to link to a site at a higher level. Clients could then use the end site's own search engine that would take them to all the areas in which they were interested. This option of linking to a higher level in a site and using the sites own search engine was far more efficient for us. Sites change regularly, but the higher level pages are usually the most stable. By using our methodology, there are less changes to be made on the html pages on the portal site. We have found the odd site to have changed its domain name but these are now fairly stable in the sections of the market with which we are dealing.

8. By this stage we had a site which looked something like this:

Themes:
 Atmosphere - Biodiversity - Coasts & Oceans - Environment Protection - Heritage - Inland Waters - Land.

Other resources:
 Directories - Education - Government - Publications - Regulation -Reporting - Subject Index

About:
 INFOTERRA Australia - About the guide - Environment Resources Database

However, not all of it was populated. This is not exactly what we finished up with in the end, but we had a working model. Although we have had an INFOTERRA page since 1995 and amended data as required, the page for INFOTERRA Australia had to be re-written. A page about the guide that was eventually called "This Site" was developed. This page clearly outlines the purpose of the portal site, how it is set out, what is included and what is not included. There is a specific section on Australia's three-tier system of government, as we get many queries from clients who clearly do not understand that state governments have major responsibilities for legislation and local councils for the delivery of services.

9. Within each page we decided to use the hierarchical structure of national, state, local, CSIRO, and CRC. Within each grouping the organisations were listed alphabetically by department or organisation, with alphabetical sub-listings of portfolio agencies.

11. The next step was to commence work on the graphic design for the site. We wanted something that was not too resource intensive. We are very aware that sections of our potential client base have older browsers and/or very low bandwidth. At one stage we had different images on each of the thematic pages, but in the end we decided on the same banner image for every page. This image is actually repeated across the page and is only 36 KB in size. The other photographic images range between 10 and 21 KB and the other graphics like the yellow dots are all 1 KB. All the graphics are held in single directory. Once you have opened the home page for the portal site the red and yellow arrows are the only images that you have not opened. Therefore the time required to move to all other html pages on the site is really the time required to open the html file alone. The largest html page is the subject index, which is 45 KB, but the average file size is 14KB. This site was designed to work with the graphics turned off.

12. In the end the draft sequence of options for the home page were changed to:

About:
 INFOTERRA Australia - This Site - Environment Resources Database

Themes:
 Atmosphere - Biodiversity - Coasts & Oceans - Environment Protection - Heritage - Inland Waters - Land.

Other resources:
 Directories - Education - Government - Publications - Regulation -Reporting - Subject Index - Search

The Environment Resources Database and Subject Index

13. The next step was to develop the Environment Resources Database and the Subject Index. Both of these run out of a single database with the subject index searching only the subject field in the database. The search option allows the user to do a free text search across the whole database.

14. The database was developed in Endnote on a local workstation (but any database software that can export data in a tagged text file format could have been used.) The data is entered in Endnote using the following fields:

- title of the page
- name of agency owning the page
- INFOTERRA Thesaurus term
- URL of the page
- free text terms (which are never displayed)
- jurisdiction.

15. To make the data available on the web on departmental web servers required the expertise of ERIN technical staff. At present, ERIN manage the departmental web servers which are UNIX and our Search 97 search engine. ERIN website experts developed a script in Search97 to take a tagged txt or rtf export file from the Endnote database so that the data can be searched in the Environment Resources Database and by the Subject Index.

16. Amendments to the Endnote database are batched. Once changes are made to the database it is exported as a txt or rtf tagged file. An expert in ERIN replaces the database on the servers, runs a re-indexing script and checks that the database is working. This process takes about half an hour. The following is a section of the export file:

```
%R 122
%T Air
%I Environment ACT
%K Australian Capital Territory; Air pollution; Air quality; Atmosphere; Codes of practice; Environmental subsidies and incentives; Fuel wood; Greenhouse effect; Publications; Strategies; Sustainable development
%U http://www.act.gov.au/enviro/air.html
%3 backyard burning, solid fuel heaters, firewood heaters; firewood industry; ACT greenhouse strategy, emissions, targets, sustainable land management, Energy Advisory Service, Photovoltaic Rebate Program, Water Tune-up Incentive Program; funding programs%F ACT

%R 402
%T Air Quality Management
%I Department of Environmental Protection (WA)
%K Western Australia; Air pollution; Air quality; Atmosphere; Policies; Pollutant monitoring; Publications
%U http://www.enviro.wa.gov.au/DEP/wm/
%3 volatile organic compounds monitoring; odour emissions; poultry industry; Perth photochemical smog study; Perth haze study; Kwinana atmosphere policy
%F WA

%R 426
%T Air Quality Update
%I Environment Protection Authority (EPA)
%K New South Wales; Air pollution; Air quality; Atmosphere; Pollutant monitoring
%U http://www.epa.nsw.gov.au/air/aqupd.htm
%3 regional air pollution index; Sydney
%F NSW
```

Approval and liaison

17. In May 2000, the prototype site was approved by senior level management within the department. We then informed the key sites, to which the portal links, about the project. The branch head wrote a letter on behalf of the department's Assistant Secretary to the Chief Executive Officers (CEOs) of the organisations concerned describing the aims and objectives of the project and requesting comments and suggestions. In particular, we wanted to know about key web pages that we may have missed. As the use of terminology varies greatly between departments and especially across jurisdictional boundaries, we were also concerned with alternative local keywords.

18. The comments received have been mostly positive, some wanted us to substantially add to the thesaurus, and others wanted to add local terminology. One respondent did not agree with the hierarchical structure of the html pages, believing that their placement in the page order was contrary to their importance as an organisation.

19. Liaison with primary non-Environment Australia stakeholders was purposely left to the end of the process. This was based on our experience that people, immediately outside the development of a website, do not constructively contribute to the process. They focus on their part of the site, how it looks, or any number of other issues rather than the overall objectives of the project. Once a prototype is available there is a firm basis for all stakeholders to comment and contribute equally.

Wider use of this portal model

20. Although we use Endnote on a Windows NT workstation to run on a UNIX web server with a Seach97 search engine, this portal model does not require these specific configurations. All that it requires is a knowledge of the web sites to be included in the portal, a practical knowledge of how to develop web pages and databases, some type of database software (but even this stage could be done as a flat file), a web site with a search engine, and an expert in using the search engine. Software to search for broken links would be useful but not necessary. The only cost was staff time. Most time was spent on finding the relevant sites to include and the development of the database. This model could clearly be adopted by anyone with good practical knowledge and fairly standard web software.

ⁱ The Government Online documentation can be found at <http://www.govonline.gov.au/>

ⁱⁱ *Use of the internet by householders(8147.0)* : Australian Bureau of Statistics February 2000

ⁱⁱⁱ The GOVERNMENT documentation can be found at <http://www.govonline.gov.au/projects/services&innovation/governet.htm>

^{iv} AGLS metadata documentation can be found at http://www.naa.gov.au/recordkeeping/gov_online/agls/summary.html