

New Zealand Government Implementation of a DC-based Standard – Lessons Learned, Future Issues

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Abstract

This paper summarises key implementation issues encountered with the New Zealand Government's discovery level Dublin Core-based metadata standard, NZGLS. In particular, it discusses the processes used to create and manage NZGLS-compliant metadata throughout New Zealand's core public service agencies. This metadata is being used to support the New Zealand government's new service-focussed portal.

1. Introduction

This paper covers the implementation of the New Zealand Government Locator Service (NZGLS)¹ into the New Zealand public sector, as part of the development of a new whole-of-government portal². A companion paper notes the issues faced in collecting service metadata from agencies³.

2. New Zealand Government Portal Strategy

In 2001 the E-government Unit⁴ of the State Services Commission completed a Government Portal strategy. It outlined a vision for a portal which would (1) give people and businesses access to information and services provided by the web sites of individual government organisations, and (2) include guidance about how to find information and services that are not available via the Internet. To succeed, the portal will direct people to government information that is always current and accurate. This means government organisations must keep their web sites and metadata current and accurate.

3. Use of Metadata

The need for high quality, consistent descriptions of services and documents became paramount as a

result of this strategy. The obvious consequence was the development and implementation of a government metadata standard, the New Zealand Government Locator Service, based on Dublin Core and the Australian Government Locator Service (AGLS).

4. Government Agency Commitment to the Strategy

The most critical success factor in the achievement of this portal strategy has been a commitment from government agencies to develop, own and manage their metadata records. The principle of agency ownership of their service and document descriptions is fundamental to the ongoing success of the portal. In order to achieve a well-populated portal within the bounds of available time and funding the E-government Unit has worked intensively with a "critical mass" of agencies. This includes about 45 central government agencies, 5 quasi-government agencies (such as Accident Compensation Corporation) and 10 major local government jurisdictions (such as Auckland City Council). Interestingly, as a result of work with the "critical mass", the metadata from about 30 other closely related agencies has also been included on the portal in the initial implementation. It is intended that other agencies will add their metadata over time.

5. Achievement of the Goal

A combination of "push and pull" (otherwise known as require and encourage) strategies, driven by the E-government Unit, has led to an exceptional level of commitment from the agencies to deliver high quality metadata about their services.

Specifically this has included agencies:

- Attending two rounds of training in both service description and use of a metadata creation tool;

- Creating over 1500 service descriptions and 2000 document descriptions;
- Developing an understanding of the NZGLS standard;
- Developing internal mechanisms and processes to develop a service-based representation of their work; and
- Committing to long-term internal management processes for their metadata.

5.1 Architecture

At the heart of the Metadata Management Facility (Metalogue) is the Portal Metadata Repository. This repository is also the key link, or interface, with the E-government Portal. Authoring of the metadata takes place in the centralised metadata repository, but is devolved to agencies. The metadata repository is required to store, and manage, NZGLS metadata elements. A user-initiated search of the portal involves searching two sources of data (1) the metadata repository and (2) an index of all New Zealand government web sites. The MMF is also integrated with two customised New Zealand Government thesauri, Subjects of New Zealand (SONZ) and Functions of New Zealand (FONZ). The next stage of development of the MMF includes more “workflow” components such as easier access for an agency to an overview of its own records and their status in the flow from authoring to Portal; a communication space for agency metadata creators and agency userid management.

5.2 Training

About 250 people from government agencies have participated so far. The first training course was about the definition of services. The second course (on the use of *Metalogue*, the Metadata Management Facility) was developed in two phases following a training needs analysis. First, a strategy was developed, in consultation with the E-government Unit, by SWIM Ltd⁵. This strategy was then used by another consultancy firm, The Sysdoc Group Ltd⁶, as the basis for writing a course to deliver to agency representatives. To date, all training costs have been met by the E-government Unit to ensure that appropriate momentum is achieved in the creation of metadata.

5.3 Creation of service and resource descriptions

Beginning in October 2001 agencies were introduced to the concept of “E-services”. This process assisted agencies to list and describe their services from a client perspective. Until April 2002 agencies worked on these descriptions using a customized service description wizard utility, called the Services List Tool Set. This Tool Set was also developed by the Sysdoc group Ltd. At this point, the use of metadata elements was not introduced directly. Service analy-

sis and description was the main focus. However, in almost all cases elements used to describe services had an equivalent NZGLS element. When these service description records were migrated from the Tool Set to *Metalogue*, the new Metadata Management Facility, the NZGLS elements were repopulated from these equivalent fields. For example, one Tool Set element was named Agency Name; its equivalent from the standard is Creator.

By the time the data was migrated, there were about 1000 service descriptions from a core group of government agencies. With the advent of *Metalogue* in late April 2002, agencies were then able to refine their service descriptions using, for example, the controlled value lists for elements such as Subject. Agencies were greatly assisted by the fact that the MMF now enforced the NZGLS standard to a much greater extent.

5.4 Understanding the NZGLS standard

Knowledge of the standard across the government sector in October 2001 was, at best, patchy. A number of representatives of government agencies had assisted in the development of the standard, and they and some of their colleagues knew what the standard was, and how it would be used. These people tended to be based in agencies’ information management groups. But the vast majority of agency people did not have that same understanding. For example, there were many representatives from agency communication groups and business units. In the E-government Unit’s experience, the word “metadata” was bound to either cause terminal boredom to set in very quickly, or to panic otherwise calm and resourceful people!

Awareness of the NZGLS standard was developed in the following ways: referring to it during the Service Listing process, including providing an electronic link to the standard, but using “real” language to communicate metadata concepts; more detailed training in its use during the Metadata Management Facility training, constant reference to the standard as the basis of metadata compliance in communication with agencies and via a Cabinet mandate for its use. By early 2002 the term “metadata” had been used several times by the Minister of State Services in public speaking engagements or Cabinet meetings!

5.5 Using the standard in “real life”

There is an inevitable gap between the standard on paper, and how it is interpreted and used. The aim of the E-government Unit and the Custodian of the standard (Archives New Zealand) is to take a pragmatic approach to its use. A good example of the distinction between NZGLS, the implementation of NZGLS in *Metalogue* (the Metadata Management Facility) and the use of the metadata by the Portal is the following: an issue which has challenged all con-

cerned is the creation of separate records for documents in different formats, such as PDF, HTML or hard copy. In operational terms, this has required double or triple the effort from an agency to create records which adhere to the standard. The current effect of this on the display of Portal search results is to show several related information resources with exactly the same titles. The E-government Unit and the NZGLS Working Group are examining the options for a pragmatic solution to this, while still remaining true to the standard.

A similar issue which has challenged us is in relation to use of the Date element. There has been confusion around which encoding scheme to use for this element, the difficulty partly being caused by the way it has been set up in Metalogue, where both ISO 8601 and DCMI Period appear in the same dialog box.

5.6 Developing internal processes to ensure accurate representation of agency services on the portal

Agencies have had to develop new ways of working internally to ensure that their services are represented appropriately and accurately. Coordination between information management, information technology, communication groups and business units within an agency has been achieved in a number of different ways. One of the main principles being followed by agencies is that business units take responsibility for agreeing to and releasing service descriptions to the Portal. We believe most agencies understand that the multidisciplinary aspect of this process challenges existing ways of working, of integrating their Web presence into core processes.

5.7 Committing to long-term internal management processes for agency metadata

One area yet to be tested is the ability of agencies to manage their metadata long-term. Already, for example, we have seen agency website reengineering causing broken links to appear in service records. The E-government Unit is committed to maintaining high quality information on the portal and therefore, a broken links report is being run regularly. But the main point is agencies having the same commitment to metadata maintenance and management. They need to put processes in place which ensure that any changes to services, either content or access-related, are also reflected in the metadata.

6. Quality Assurance Process to date

The metadata collection process has involved two phases of record creation and a major centralised quality assurance process. From late April to mid-June, agencies created additional service records and the majority of their document records. From May to

July agencies received detailed feedback on the quality (both content and achievement of NZGLS standard) of their records from staff at the E-government Unit. This was a labour-intensive process, with a team of 6 fulltime staff working directly with agencies. The E-government Unit was committed to this approach to ensure that the metadata was of a high and consistent standard which could be redeveloped and amended when necessary, with a high level of confidence in the integrity of the data. This collaborative process has ensured that, for the most part, agency ownership of the metadata records has been achieved.

7. A Portal based on Metadata

The New Zealand Government portal relies heavily on metadata for its searching and its content. A subset of the 19 NZGLS metadata elements is focused on by the portal search mechanism (for example, Title, Description, Subject, Function, Rights, Relation.Requires, Availability and Audience). The content of many of these elements forms the content of the portal's search results, but also, significantly, points users to an agency's own website where more detailed information such as contact details for physical offices, specific application forms or brochures, are available. A topic hierarchy approach to locating information leads searchers by category to the information they want. If they reach a "dead end", that is, they do not find what they want, the following message appears: "Have you found what you want? If not search for x". An automatic search will then be generated, based on the topic name.

8. Benefits and Outcomes of the Strategy

Some of the unanticipated results of this implementation process are cross-agency communication and cooperation; higher visibility to policy and operational agencies of all government activities; strong commitment to the portal from local government agencies and agencies discovering for the first time where other agencies encroach in their operational areas. Agencies have gained much from opportunities to share their experience and solve issues together.

We expect to establish a Metadata Management support network to enable agencies to continue to have these opportunities. The portal provides a view of government services from a cross-agency perspective; gaps in and duplication of services will become more obvious. Local government (regional, city or town councils) has taken the opportunity to develop a centralised profile for its services, for citizens who make no distinction between local and central government service availability.

9. Key Reasons for Success

- A “Trojan horse” approach to metadata – agencies’ initial introduction to the NZGLS metadata elements was masked within a service description wizard utility; agencies became familiar with the concept of describing their services using consistent rules, without necessarily realising they were following a metadata standard. By the time the standard-driven MMF was introduced, agency representatives had become more comfortable with the notion of metadata.
- Dedicated support for agencies via a Metadata Collection project team at the E-government Unit (training, helpdesk, documentation, feedback on quality of metadata records); a tailored training course, desktside assistance and a first-level helpdesk provided agencies with expertise, encouragement and support as they created their own records. Notably, the first two phases of the services listing and metadata collection took about three times the predicted effort by the E-government Unit in spite of a high degree of commitment by agency staff at all levels.
- Intensive work done with local government representatives to (1) produce a list of generic services, that is, services provided by all local authorities and (2) create agreed titles and descriptions; local government agencies were brought together centrally to coordinate a response. For example, one of the most popular services on the Portal is “Find location of public toilets around New Zealand”. These are facilities provided by all local government authorities, and can be described effectively as a collective service, rather than as eighty or so individual services.
- A metadata capture tool which, to a large extent, enforces the NZGLS standard; and
- A Cabinet mandate for the use of the NZGLS standard; in December 2001 the New Zealand Cabinet “agreed that use of the NZGLS Metadata Standard be the official New Zealand Government standard for creating discovery level metadata in the public sector” and “directed all Public Service departments ... to become NZGLS compliant (as specified in paragraph A.1.1 of the NZGLS Metadata Standard), and make NZGLS metadata records available to the NZGLS System [Metalogue], so as to ensure that the services and relevant informa-

tion resources (both online and offline) can be discovered by the Portal search engine’s metadata searching capability”.

10. Some Future Issues

1. Conducting a reality check-review results of portal usage; assess impact on metadata creation, implementation changes;
2. Using already created metadata elements, e.g. Coverage, to produce a regional, user-centric view of government services;
3. Maintaining the momentum to acquire metadata from additional agencies and broadening the coverage of metadata from existing “enrolled” agencies;
4. Managing the relationship between broad-based use of NZGLS and more detailed sector focussed metadata;
5. Transfer of metadata between the MMF repository and agencies for other purposes; and
6. Creating a balance between agency and centralised maintenance of portal metadata – whose metadata is it, anyway?

11. Conclusion

Producing the metadata building blocks for a new New Zealand Government portal is a significant achievement. The coordinated approach across government agencies is ensuring commitment to joint ownership of the portal. An upcoming challenge is to translate user response to the portal’s structure and content into manageable changes to the now-considerable body of existing standard-based metadata.

¹ The New Zealand Government Locator Service (NZGLS) Metadata Standard and Reference Manual <http://www.e-government.govt.nz/nzxls/standard/index.asp>

² New Zealand Government Portal <http://www.govt.nz>

³ John Roberts, *Describing Services for a Metadata-driven Portal*, Paper presented to DC2002

⁴ New Zealand E-government website <http://www.e-government.govt.nz>

⁵ SWIM Ltd <http://www.swim.co.nz/>

⁶ The Sysdoc group Ltd <http://www.sysdoc.co.nz/>

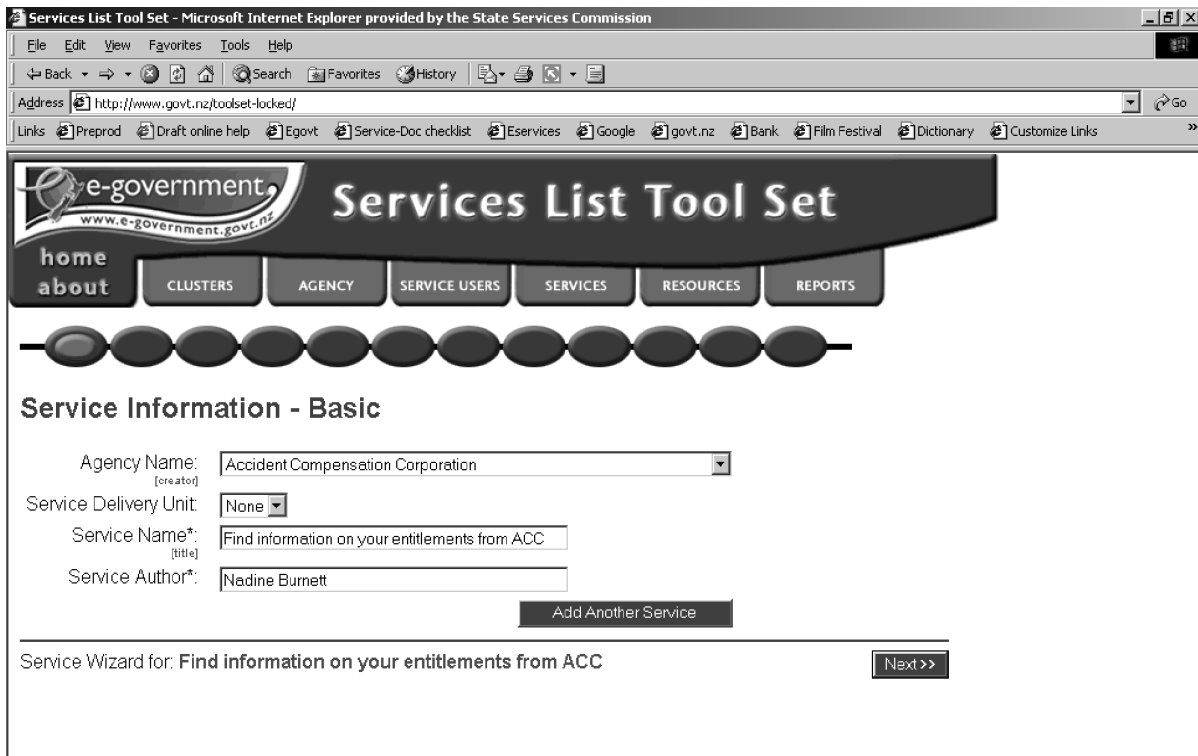


Figure 1. Services List tool set screen

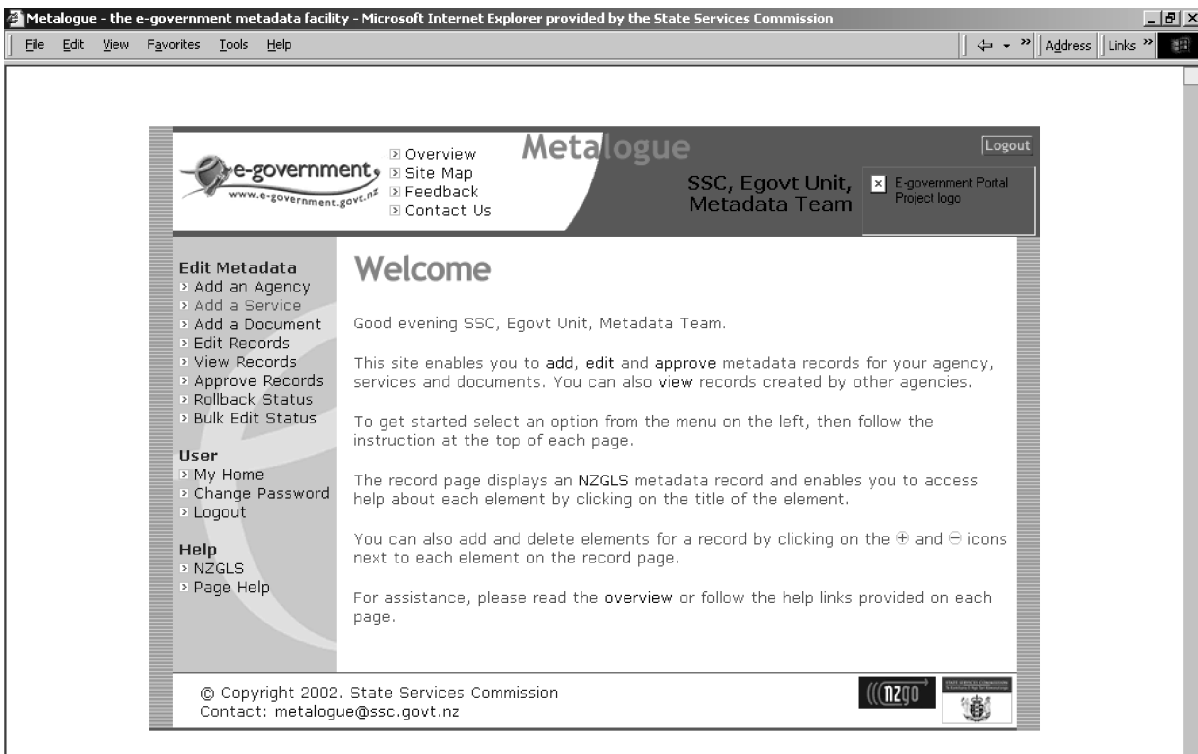


Figure 2. Metalogue Welcome Screen

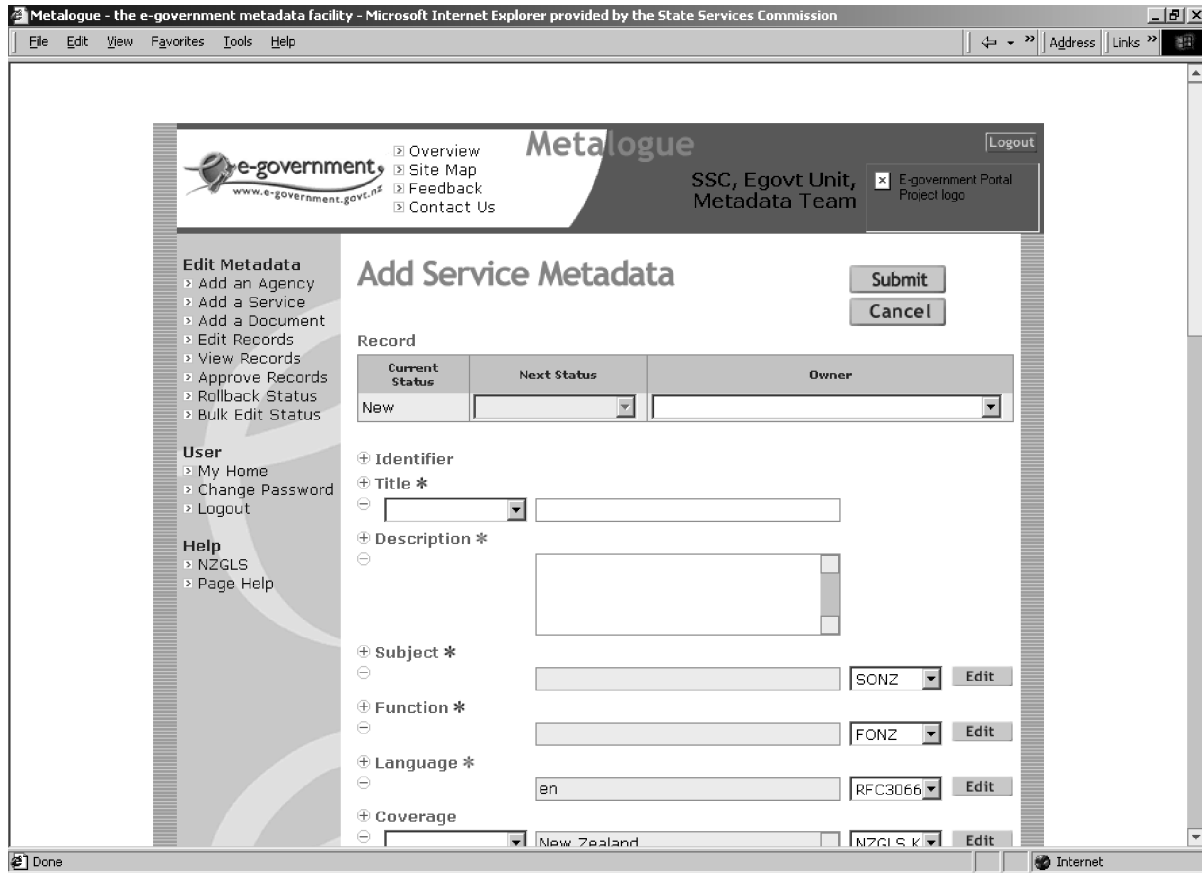


Figure 3. Metalogue Add Service screen