



The value of meta-tagging in document repositories to support flexible publishing in digital form¹

Roxana Donoso and Patricio Pastor

(Area for Information Architecture & Alvaro Sandoval
Department for Digital Services
Chilean Library of Congress
Santiago, Chile

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Abstract:

We present a web based information publishing model based on meta-tagging applied at the Chilean Library of Congress. This system allows for the generation of web through information submitted in repositories and its display in multiple portals through the content manager CMS/Plone, via direct SQL queries towards dSpace.

1.- Introduction

The Chilean Library of Congress (BCN²) has made a major effort to digitalize information relevant to Congress and store it in repositories that allow for exhaustive indexation, in order to be able to answer diverse types of queries made from the different portals maintained by the institution. As a consequence content is made independent and can be strategically modeled and made available on the web, depending on the audiences it relates to. In other words, information is stored in only one repository but can be accessed through multiple websites.

The digital objects are held in a dSpace³ repository with a structure of both basic and qualified metadata. They are stored in a structured way and belong to different collections that reflect datasets for the different business areas of the library. The visualization of information is done through a robust content manager for creating portals, CMS/Plone⁴

¹ Paper written by Roxana Donoso, Patricio Pastor, Contact: rdonoso@bcn.cl ppastor@bcn.cl

² <http://www.bcn.cl/>

³ <http://www.dspace.org/>

⁴ Our Digital Services/ICT Department chose to use and customise CMS/Plone (<http://plone.org/>) as the Library's content management software due to its robustness with excellent results. In general the Library has made a conscious choice to use Opensource software when possible, as way of making best use of resources and offering experiences transferable to other institutions.

from the opensource world. An in-house evaluation proved that its use for this project was absolutely feasible and functional.

In consequence the application of this model, which includes the cataloguing of digital objects in repositories and a query system through SQL, has resulted in the modeling and creation of efficient web sites, including the timely and focused delivery of information to users. Additionally it has allowed library staff to create and manage digital objects with less effort.

This article reviews how we faced the task of implementing a new model of digital information delivery. BCN firstly defined the value that users -both internal and external- were expecting from the library and how we developed a solution through information architecture, processing, display and technology to meet this challenge. Finally we will examine the difficulties faced carrying out this project and how they were overcome.

1.1 The value

The BCN responds to a diverse community of users, from Members of Parliament to ordinary citizens. Each of them has different concerns that result in different information needs the library must meet. Additionally our library not only stores and manages information, but generates content to support the legislative process, deliver civic education and process legal documentation in our national law database. These multiple roles gave rise to diverse services that were not relating to each other. As a result information delivery was not as efficient and effective as expected, situation that was creating discomfort among both external users and library staff. Hence it was necessary to trigger a fundamental change and create value in the production and delivery of information. This was expressed as follows:

For the user

- Ease in information retrieval results
- Access to up to date information
- Retrieval of convergent information. In other words, allowing for information generated within the library to relate to other information objects managed by the institution. We have coined this action as “creating a content dossier” or using “techie” jargon as mashups.

For Library staff

- Creation of flexible thematic portals that allows for publication of diverse content in an integrated manner. This elastic modelling permits quicker creation and modification of portals and sites through meta-tagging templates
- Granting staff more liberty to create content, through the easy integration of diverse types of information objects originating from internal and external sources allowing for the creation of new content.

2.- How?

Once we had defined what our users expected from us, the BCN developed a strategy to tackle this situation, which resulted in 4 lines of action:

- Development of information architecture
- Information processing (Meta-tagging)
- Data visualization
- Development of architecture technology

Key Players

There is a group of articulators that fulfilling their distinct roles, intervene in the different stages of development. These are:

- Client - Any internal area or unit that requires the development of a web channel to interact with its target audience. Specifically for our project “Historia Política Legislativa del Congreso Nacional de Chile” our client was an expert historian.
- Information Architects
- Digitization and meta-tagging group
- User Experience Designers
- Programmers

2.1.- Development of information architecture

The projects begins with the reception of client requirements in a process of continuous redefinition that includes:

- Receiving the requirements for the development from the client through conversation and in the shape of a standard document.
- Interacting with the client to refine this document in order to reflect what information product the client needs, they way in which he considered he should receive it, the conditions the data must meet when it displays and the time-limit available for completion.
- In case of a request of greater complexity, pointing out data sources and developing a sketch of the expected solution.

Once the requirements have been defined a document detailing technical aspects is developed. This document consists of two elements:

- Firstly an initial wireframe⁵ that details behavior patterns of the interaction and the pieces of software that will be applied to the solution are chosen. These on-going processes will lead to a document detailing the specifics that will result in the structuring of content, the processing of objects, the human interaction expected and the development of engineering. Within the sketch of the interaction in the wireframe, the contents to be displayed and where the digital collections will be housed are defined. Within the wireframe the relation among contents and objects is recorded and the metadata to be used is determined.
- Secondly also specified in this technical document are the way in which content and objects will be integrated and the rules of display, which will allow the programming of queries towards SQL and will ultimately allow content to be published on the final site, are decided⁶.

⁵ A wireframe is a document that reflects a website in schematic way. For further information see http://en.wikipedia.org/wiki/Website_wireframe

⁶ See Appendix 1: Specs Document for the Frontpage of “Historia Política Legislativa del Congreso Nacional de Chile”.

For example in the case of the contents of the site “Historia Política Legislativa del Congreso Nacional de Chile⁷”, the choice was made to work with MediaWiki⁸ due to the ease to edit, the versatility and semantic orientation of its structure and easiness to create ontologies and categories of content using templates.

The storing and management of digital objects is done in dSpace with simple and qualified Dublin Core⁹ for the description and modeling of objects. Additionally our library has assigned the prefix “bcn” for fields of metadata that are more specific. The choice of dSpace is based on its effortless administration of content, the possibility to use multiple schemes of metadata simultaneously, the management of digital archives or bitstreams, its solid scheme of security applicable up to item level and the use of OAI¹⁰ protocols. In dSpace we modeled collections in order to group objects and defined the metadata applicable in the exhaustive description of content.

2.2.- Information Processing (Meta-tagging)

Information processing includes applying metadata to digital objects within dSpace according to the definitions of the specs document. Meta-tagging allows us to additionally enrich those objects and relate them to content or other objects housed in other databases or websites.

Let us see some examples.

2.2.1.- Case-study 1: Use of an image in multiple displays

In our portal “Historia Política Legislativa del Congreso Nacional de Chile” we have included two sections that we have called milestones and events. If we have an image of the president of Chile, we can use it for different purposes, with different levels of description. Hence each section can show the same image, but with a unique description.

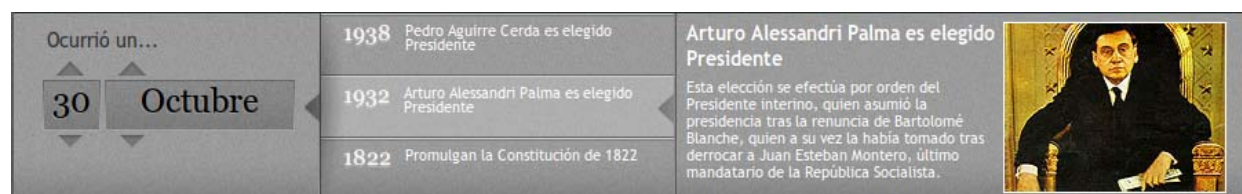


Figure 1. An image stored in dSpace relating to an event

⁷ Historia Política Legislativa del Congreso Nacional de Chile, is a thematic portal developed by the BCN currently available in its Beta version at <http://historiapolitica.bcn.cl>

⁸ Mediawiki. <http://www.mediawiki.org/wiki/MediaWiki>

⁹ Dublin Core Metadata Initiative. <http://dublincore.org/>

¹⁰ Open Archive Initiative. <http://www.openarchives.org/>



Figure 2. The same image showing a milestone.



Figure 3. Finally the image with the detail of a milestone.

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Campo DC
dc.coverage.temporal 1932-10-30
dc.date.accessioned 2011-02-03T20:09:39Z
dc.date.available 2011-02-03T20:09:39Z
dc.date.issued 1932
dc.identifier.uri http://hdl.handle.net/10221.1/18935
dc.format image/jpeg
dc.relation.ispartof Línea de tiempo;1925-1973
dc.relation.ispartofseries Hito Historia Congreso Nacional;1925-1973
dc.relation.uri http://commons.wikimedia.org/wiki/File:Arturo_Alessandri_Palma_2.jpg
dc.subject Alessandri Palma, Arturo
dc.subject Presidentes
dc.subject Parlamentarios
dc.subject Senadores
dc.subject Diputados
dc.title Arturo Alessandri Palma es elegido Presidente de la República.
dc.type Imagen/fotografía
dc.rights.holder Imagen descargada desde Wikicommons
dc.rights.accessrights Público
bcn.title Arturo Alessandri Palma es elegido Presidente de la República.
bcn.description Esta elección se efectúa por orden del Presidente interino Abraham Oyanedel Urrutia, quien asumió la presidencia tras la renuncia de Bartolomé Blanche, quien a su vez la había tomado en junio de 1932 derrocando a Juan Esteban Montero, último mandatario de la República Socialista. Los candidatos que se presentan a esta elección son Arturo Alessandri Palma por la alianza liberal-radical, Marmaduke Grove Vallejo por la izquierda socialista, Enrique Zañartu Prieto por los liberales y Elias Lafferte, candidato comunista. Arturo Alessandri logra la presidencia con un 55,30% de los votos para el periodo que corre entre 1932 y 1938, dejando en segundo lugar a Marmaduke Grove con un 17,91% de los sufragios.
bcn.subject Arturo Alessandri Palma es elegido Presidente de la República
bcn.identifier Efemérides
bcn.description.abstract Esta elección se efectúa por orden del Presidente interino, quien asumió la presidencia tras la renuncia de Bartolomé Blanche, quien a su vez la había tomado en junio de 1932 derrocando a Juan Esteban Montero, último mandatario de la República Socialista.
bcn.title.alternativo Arturo Alessandri Palma es elegido Presidente de la República.
parece en las colecciones: Historia Chilena

Ficheros en este ítem:
Fichero Descripción Tamaño Formato
Alessandri_G.jpg 185.83 kB JPEG

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Figure 4. In the dSpace entry for this image we can appreciate that two fields contain the different descriptions that are displayed according to the alternative uses of the image as seen above.

2.2.2.- Case-study 2: Integrating external content

The BCN keeps a video channel in both YouTube and Vimeo. In these media we store interviews with Members of Parliament, which are then displayed on the portal through an entry in dSpace allowing therefore for the development of Mashups.

Objetos Digitales de la Biblioteca del Congreso Nacional >
Parlamentarios >
Aylwin Azócar, Patricio >

Por favor, use este identificador para citar o enlazar este ítem: <http://hdl.handle.net/10221.1/22720>

Registro completo de metadatos

Campo DC	Valor	Lengua/Idioma
dc.date.accessioned	2011-07-20T21:03:50Z	-
dc.date.available	2011-07-20T21:03:50Z	-
dc.date.issued	2011-07-20	-
dc.identifier.uri	http://hdl.handle.net/10221.1/22720	-
dc.format.image/jpeg		es
dc.language.iso	es	es
dc.relation.uri	Patricio Aylwin: la familia Aylwin Azócar.[2009-09-07][http://www.youtube.com/watch?v=7On_aySQYWY]	-
dc.relation.uri	Patricio Aylwin: ingreso a la Falange Nacional.[2009-09-07][http://www.youtube.com/watch?v=FjHQQT1lwqI]	-
dc.relation.uri	Patricio Aylwin: militante del Partido Demócrata Cristiano.[2009-09-07][http://www.youtube.com/watch?v=xVpG3YFisU]	-
dc.relation.uri	Patricio Aylwin: Reforma Agraria.[2009-09-07][http://www.youtube.com/watch?v=ch8y8vxbik]	-
dc.relation.uri	Patricio Aylwin: bombardeo a La Moneda.[2009-09-07][http://www.youtube.com/watch?v=FKKbB97Zjg]	-
dc.relation.uri	Patricio Aylwin: disolución del Congreso Nacional.[2009-09-07][http://www.youtube.com/watch?v=ITk7mSP4Rk]	-
dc.relation.uri	Patricio Aylwin: Grupo de Estudios Constitucionales.[2009-09-07][http://www.youtube.com/watch?v=IE9pOZXGxQ]	-
dc.relation.uri	Patricio Aylwin: inicio del proceso de transición.[2009-09-07][http://www.youtube.com/watch?v=2XwZ66DDy]	-
dc.relation.uri	Patricio Aylwin: candidato a Senador.[2009-09-07][http://www.youtube.com/watch?v=265Kq6Kmcvg]	-
dc.title	Cápsulas.	es
dc.type	Video	es
dc.rights.accessrights	Público	es

Aparece en las colecciones: [Aylwin Azócar, Patricio](#)



Figure 5. Here we can also see the Dublin Core fields that include the prefix “bcn” and allow for additional description.

2.2.3 Case Study 3: Use of collections

The organization of digital objects through communities and collections in dSpace allows for the modelling of content so that one object can belong to two collections and hence achieve greater granularity in the organization of objects. For example, creating a collection for each Member of Parliament in our repositories allows us to group together different types of objects and even allocate more than one collection to an object, as is illustrated in the following image.

Título:	Álbum Fotografías Administración Don Arturo Alessandri, 1920-1925. Vol.2 ap
Palabras clave:	Alessandri Palma, Arturo Presidentes Parlamentarios Senadores Diputados
Fecha de publicación:	1920
Es parte de:	Historia Política Chilena; Historia Parlamentaria Chilena; Álbum Fotografías Administración Don Arturo Alessandri, 1920-1925. Vol.2;
Descripción:	Pedro Aguirre Cerda y Arturo Alessandri Palma junto a otros funcionarios de g fotografía año, 1920.
URI:	http://hdl.handle.net/10221.1/18399
Tipo:	Imagen/fotografía
Titular de los derechos:	Material donado por la familia Alessandri.
parece en las colecciones:	Aguirre Cerda, Pedro Alessandri Palma, Arturo

Figure 6. The image shows the dSpace entry for a picture showing two former Members of Parliament that later became Presidents. As a consequence we assign the object to both collections representing each person.

2.3.- Visualization of information

The user experience development or web interface is implemented with the concept of information visualization¹¹. It is closely related to graphic design and the idea that the client has, as to what he wants, how and when he wants it. Visualization is a method for displaying and interpreting SQL queries generated by web contents, and showing them in a user friendly manner.

Visualization takes shape in RIA's¹² (Rich Internet Applications), which are applications made to load at once most of the interactions of the user with an interface, so each action between the user and the site is a preloaded action and not a new request to the server.

In our portal “Historia Política Legislativa del Congreso Nacional de Chile”, the “time line” application permits browsing and navigating through periods of history, visualization of milestones, display of the milestones and image downloading. This application is a program that can be reused in other sites, since it operates like a component within the global context of the site.

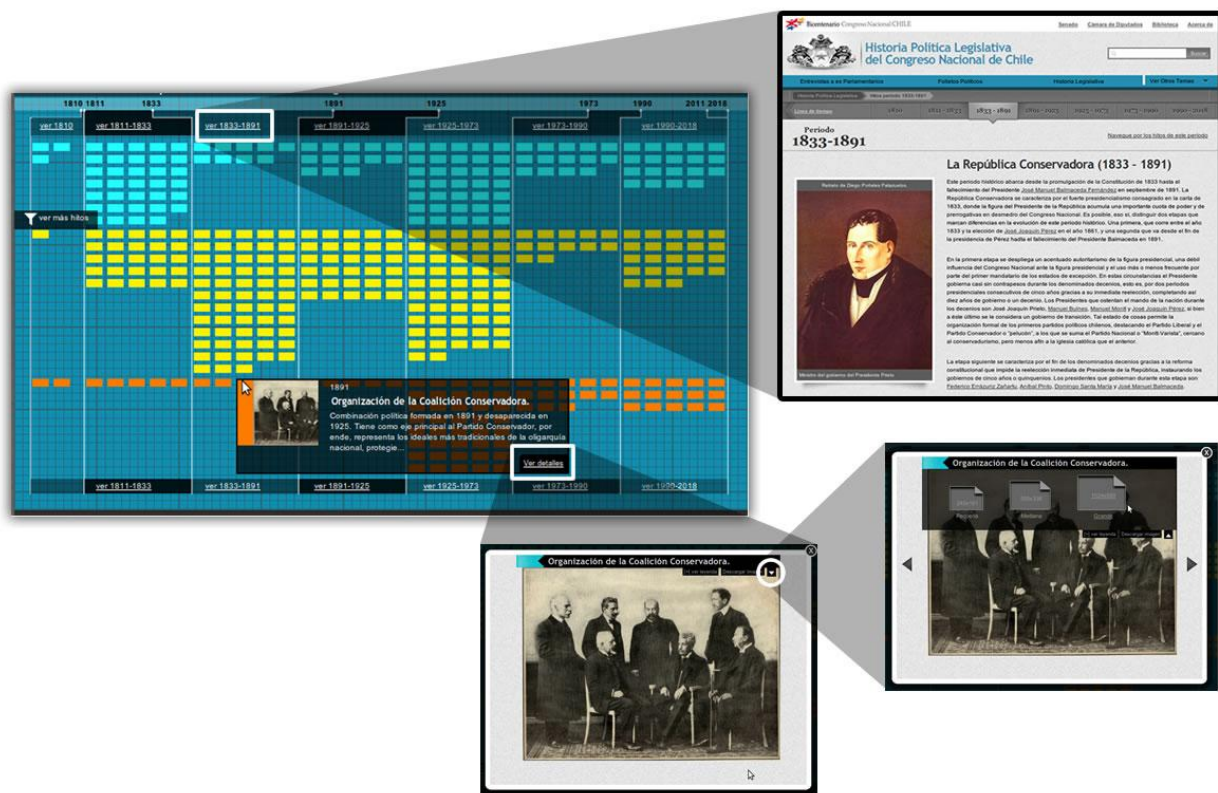


Figure 7. Image showing the versatility of data.

RIA's were developed in open standards that ensure the proper visualization in different browsers and operating systems: HTML, CSS 3, JSON and Javascript.

The Mashup concept is also developed for biographical reviews of parliamentarians that have been interviewed and the integration of videos with Google earth that link to Member's constituencies .

¹¹ Visualization of information. http://en.wikipedia.org/wiki/Information_visualization

¹² Rich Internet Applications. RIA's. http://es.wikipedia.org/wiki/Rich_Internet_Applications

2.4.- Development of the technological architecture

The organization of hardware and software resources is related to the management of the web site and the information repositories of the Library of Congress, in a technological platform with the following traits:

CMS/Plone¹³ as back-end administrator and dispatcher of digital content.

- Plone, as back-end, manages all of the Chilean Library of Congress web sites, using a shared database, a load handler and a graphic administrator of viewlets that makes the graphic mounting of interfaces easier for each web.
- As content dispatcher CMS/Plone takes the information from its own sites, making a direct query to the database. For data held in other servers, (Mediawiki, ILS, etc.), Plone uses XML.

The Chilean Library of Congress uses Apache¹⁴ + mod_wsgi¹⁵ for the front end. This provides a public interface, flat HTML (Apache) files with the capability of dynamic and fluid calls to Plone contents (mod_wsgi), without the load of two servers working.

The front end is fed from multiple sources:

- dSpace repositories. With SQL, we obtain the records required to build the Library's web site displays.
- Mediawiki. Using the MediaWiki API we make dynamic searches to information contained in this system and integrate it with the information in dSpace and Plone.
- Bibliographic catalog. Records are exported in XML/RSS format and integrated in the viewlets thus defined in the Library Plone based web sites
- Plone. Although Plone handles information from the repositories, it also stores its own contents. Nevertheless, they are fewer each time and the trend is that it be an "articulator" of digital objects.

Autonomy¹⁶ is the main search engine used in the Library's sites. It has two main tasks:

Indexing contents and using crawling and SQL techniques

- Crawling, which consists in perusing the site as the Google or Yahoo sites do. This technique is used in Library Plone based sites and the result is a set of data that contains all of the site objects.
- SQL selective indexing. This technique is used for internal Library sites that store the content in databases such as dSpace and the bibliographic catalog. Indexing is selective because the filtering criteria used in the SQL instructions hold the business knowledge that groups results as a set of specific data.

Providing web services to search previously indexed contents

- The SQL based selective indexing is used to search contents stored in the 4 dSpace instances. The dSpace repositories have OAI services, which are used by Autonomy together with SQL instructions to obtain the metadata and files of each recovered record by the SQL instruction. In this way, Autonomy indexes both the metadata and the full text of the documents of each record in the repositories.

¹³ Plone. Content management system <http://www.plone.org>

¹⁴ Apache is the most widely used server in the world. .Details in: <http://www.apache.org>

¹⁵ mod_wsgi is an Apache module for search applications in python.

Further details in: <http://code.google.com/p/modwsgi/>

¹⁶ Autonomy. <http://www.autonomy.com>

This technique is also used for our News site (noticias.bcn.cl) that holds its information in an Oracle database.

3.- The problems

The application of this model has not been without problems concerning contents the Library already had, and the need to migrate, as well as the display of data, which required speed and security.

About staff

This project was so innovative locally that the Library was unable to find staff with the adequate experience and knowledge for its implementation among the library and engineering community. For this reason we developed a pilot project that allowed staff to “learn by doing”, document the process, define best practice and accumulate know-how.

About contents

When the Library decided to remodel the system for storing and handling digital objects, there were many files and objects residing in web sites. The Library migrated these files mapping the metadata of the digital object and made an automatic load into dSpace, following a rule of organization that mandates that a digital object should always be stored in a repository.

In the process of organizing files, many are “left along the way” because they are obsolete or duplicates. A URL maintenance procedure is defined so they are redirected or eliminated from the search engines.

About displays

A web site that makes dynamic calls to repositories sacrifices speed of service when showing pages that are a compound of many SQL searches.



Figure 8. This screen display is completely built by calling upon digital objects housed in dSpace.

To solve this, the Library generated mixed “mirror servers” that combine static pages, dynamic calls and RIA’s.

We use the “read only” PostgreSQL of dSpace database replication technique, with a SLONY-I¹⁷ application. With this, each web site will have a local replication of dSpace, avoiding the server to receive external connections or those coming from other Library web sites, since these latter ones will connect to the local replication of each one, with the improvement of the following two aspects:

- Availability of service; if there are any failures in the dSpace server, it does not affect the other Library web sites.
- Improvement of response times, since SQL queries to the repositories are solved locally.

¹⁷ Slony-I is an asynchronous PostgreSQL database. For details: <http://slony.info/>

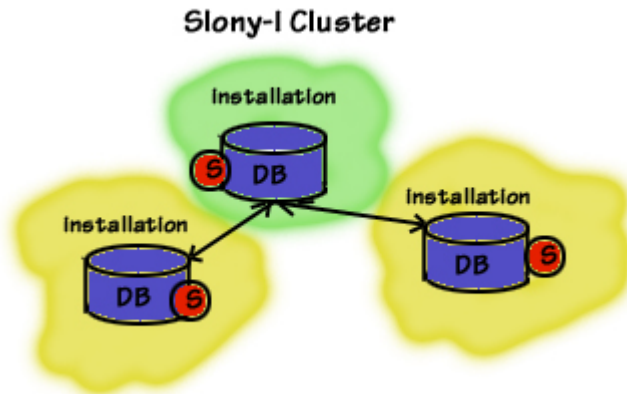


Figure 9. The diagram shows the master database and the two read-only slave bases.

The availability of “demon” processes in charge of synchronization must be emphasized. There is a demon process in the master servers and in the slaves for each replicated data base.

The final scheme of the solution is as follows

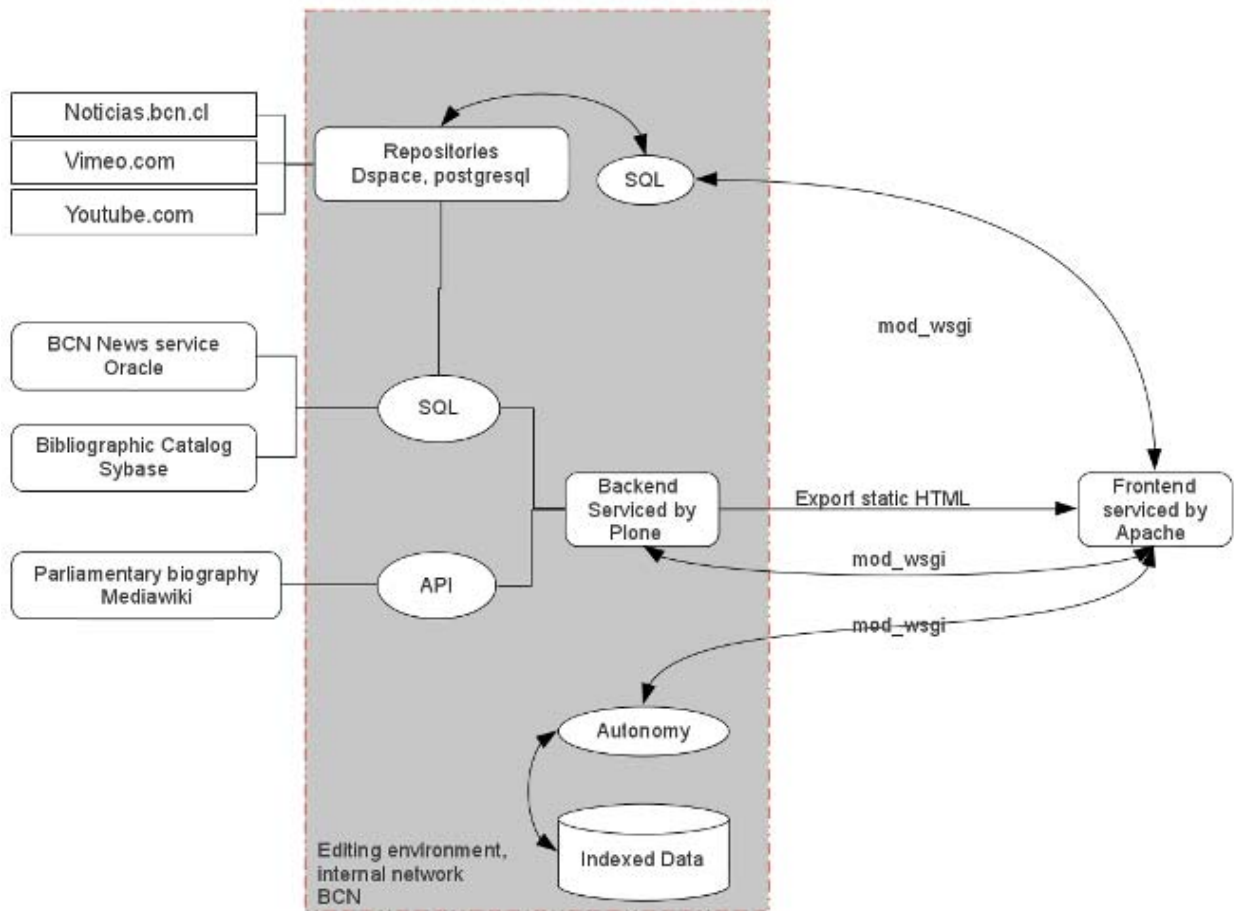


Figure 10. Scheme showing processes that operate to create our final websites.

4.- Conclusions

The development of this methodology has provided the following benefits:

For the user

- Access to “information dossiers” on his subjects of interest. This is achieved through the enrichment of metadata objects which allows for the generation of complex information objects, with an unlimited capability for pointers to disperse contents, in multiple sources.

For library staff

- The storage of digital objects in repositories permits an easy handling of updates and metadata enrichment, with effects on all of the sites that use those objects.
- RIA’s operate as application packages that can be incorporated in different sites and portals.
- The technological architecture design guarantees the efficiency of the sites, having no effect on the performance of the systems that hold the data (dSpace, Wiki, Catalogue, etc.)

Our Library has benefited, in a positive way with this new modeling. The contents have a unique residence place and the data is progressively complemented as more and more digital objects are included, as a result of acquisitions, exchange or our own generation of contents.

The learning process that triggered this change has been translated into the optimization of cataloguing processes, the flexibilization of object indexing, a better performance of our servers and a better service provided to our users.

References

1. Lagoze, Carl et al. Object Re-Use & Exchange: A Resource-Centric Approach. Cornell University Library. Arxiv.org. <http://arxiv.org/abs/0804.2273v1>
2. Nilsson, Michael et al, Towards an interoperability framework for metadata standards. Proceeding DCMI '06 Proceedings of the 2006 international conference on Dublin Core and Metadata Applications: metadata for knowledge and learning. <http://kmr.nada.kth.se/papers/SemanticWeb/TowardsAFramework.pdf>

	Proyecto: “Portal Historia Política Legislativa”	Fecha: 18 de julio de 2011 Versión: 2g
	Documento: Requisitos Fase: Formulación	Cliente: Pía Montalva Jefe Proyecto: Jaime de Mayo
		Arq.Información: Roxana Donoso Felipe Almazán


Anexo 1: Documento de requisitos

1. Portada


a) Marquesina de efemérides con intervalos históricos (Portada)



Objetivo	Visualizar y destacar como efemérides hitos históricos. Contiene marquesina y línea de tiempo, con filtros.
Fuente de contenido	DSPACE (hitos, asociados a cada período de tiempo). Cada hito contará con los siguientes archivos de imágenes: a) Para despliegue visual, en PNG a. 80x80px

	Proyecto: “Portal Historia Política Legislativa”	Fecha: 18 de julio de 2011 Versión: 2g
	Documento: Requisitos Fase: Formulación	Cliente: Pía Montalva Jefe Proyecto: Jaime de Mayo Arq.Información: Roxana Donoso Felipe Almazán

	b. 240x161 c. 500x336 d. 1024x689 b) Para descarga, en JPG a) 240x161 b) 500x336 c) 1024x689
Comportamiento esperado	<ol style="list-style-type: none"> 1. El sistema detecta la fecha (Día/mes) en curso. Importante: Debe considerar el 29/Febrero. Con este dato, busca e identifica aquellos hitos correspondientes al día y muestra hasta 4 hitos (se ajusta el espacio para mostrar desde uno, a lo menos, hasta cuatro hitos). --Si no puede completar los hitos del día, completa con los del mes (hay hitos que no tienen día, solo mes)--. 2. Se habilitan flechas ascendentes y descendentes para el día y mes. En el caso del día se puede reemplazar manualmente. 3. Al seleccionar otro día, mes, cambian los hitos y el detalle a su derecha. 4. El orden de aparición estará ordenado por año ascendente. 5. Se encuentra activa una visualización de cada hito, el que cambia automáticamente cada 8 segundos. 6. Mouseover. Al colocar el cursor sobre el hito, aparece una pequeña ventana que contiene el título y una pequeña imagen del hito. 7. Se incorpora el Mouse over sobre los años, el que cambia el detalle a su derecha. 8. Al hacer clic en su interior (título o imagen), el hito se muestra en la ventana principal. 9. El título del hito debe limitarse a dos líneas, tras lo cual se colocará un punto suspensivo. Ej: Limitar el total de caracteres a 80. Para la primera línea=40, para la segunda línea 36 + espacio + puntos suspensivos (3).-

	Proyecto: “Portal Historia Política Legislativa”	Fecha: 18 de julio de 2011 Versión: 2g
	Documento: Requisitos Fase: Formulación	Cliente: Pía Montalva Jefe Proyecto: Jaime de Mayo Arq.Información: Roxana Donoso Felipe Almazán


	10. La bajada del hito se limitará a cuatro líneas como máximo, con la aparición de puntos suspensivos (alrededor de 153 caracteres apróx.)
Cantidad	4 hitos destacados.
Web de referencia 1	http://www.whitehouse.gov/
Web de referencia 2	http://www.bbc.co.uk/history/historic_figures/
Requisitos (*)	1. Requiere almacenar atributo en cada hito que permite priorizar el orden de aparición (1, 2, 3...etc.) En caso que no cuente con este dato, su aparición será aleatoria.
Página de la maqueta gráfica	Historia política legislativa
Ejemplo handle Dspace	10221.1/17329

b) Solución técnica. Estructura del registro Línea de tiempo.


La estructura de metadatos propuesta identifica campos para dos despliegues: Hito y Efemérides. En este caso, existen Hitos (con día, mes y año) son efemérides y Efemérides que no son hitos.

Los campos de metadatos utilizados para la construcción del registro del hito son:


Campo		Etiqueta	Contenido
Título	M	dc.title	Título de la imagen
Título del Hito	M	bcn.title	Título del hito
Título de la Efemérides	M	bcn.title.alternativo	Título de la efemérides
Descripción de la imagen	M	dc.description	Contiene la descripción fidedigna del contenido de la imagen
Descripción del hito en Línea de Tiempo	M	bcn.description	Contiene el texto de la descripción del hito
Descripción de las Efemérides	O	bcn.description.abstract	Texto de las efemérides

	Proyecto: “Portal Historia Política Legislativa”	Fecha: 18 de julio de 2011 Versión: 2g
	Documento: Requisitos Fase: Formulación	Cliente: Pía Montalva Jefe Proyecto: Jaime de Mayo Arq.Información: Roxana Donoso Felipe Almazán

Campo		Etiqueta	Contenido
Taxonomía de los hitos	M	bcn.subject	Taxonomía de los hitos
Idioma del recurso	M	dc.language	
Es parte (R)	M	dc.relation.ispartof	Línea de tiempo; segmento al que pertenece. Ej: Línea de tiempo; 1925-1973
Serie	O	dc.relation.ispartofseries	<p>Asocia el hito a una categoría:</p> <ol style="list-style-type: none"> 1) Hito Historia Chile, 2) Hito Historia Congreso Nacional 3) Hito Historia Constitucional 4) Hito Ley Emblemática 5) Hito Parlamentario <p>A continuación un ejemplo de cada uno:</p> <ol style="list-style-type: none"> 1) Hito Historia Chile Instalación de la Primera Junta de Gobierno, 10221.1/18586, Hito Historia de Chile;1810. 2) Hito Historia Congreso Nacional Primer Congreso Nacional 10221.1/18590 Hito Congreso;1811-1833 3) Hito Historia Constitucional Se aprueba reglamento para el arreglo de la autoridad ejecutiva provisoria de Chile 10221.1/17604 Hito Historia Constitucional;1811-1833 4) Hito Ley Emblemática Declaración de Libertad de Comercio, 10221.1/18589, Hito Ley Emblemática;1811-1833 5) Hito Parlamentario Andrés Bello asume como parlamentario 10221.1/18607

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	Documento: Requisitos Fase: Formulación	Cliente: Pía Montalva Jefe Proyecto: Jaime de Mayo Arq.Información: Roxana Donoso Felipe Almazán

Campo		Etiqueta	Contenido
			Hito Parlamentario;1833-1891 6) Hito Partidos Políticos Formación de la tendencia Moderada 10221.1/19255 Hito Partidos Políticos;1810
Identifier	O	bcn.identifier	Para el despliegue de Efemérides. El valor del campo será el descriptor Efeméride
Cobertura	M	dc.coverage.temporal	Fecha del hito. EJ: 11 de septiembre de 1973
Relaciones con otros contenidos no ingresados en el repositorio	O	dc.relation.uri	Contiene URL's de contenidos externos al repositorio que tienen relación con el registro
Materia (R)	M	dc.subject	Palabras claves asociadas
Tipo	M	dc.type	Imagen/
Acceso	M	dc.rights.accessrights	Indica el nivel de acceso del registro
Derechos de utilización del objeto	M	dc.right.holder	Define los permisos de utilización otorgado al objeto. Corresponde a una nota.

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c) *Reglas de Despliegue*

Desplegará Contenidos Imagen y Texto de los repositorios: documentos.bcn.cl y recursoslegales.bcn.cl

Los archivos que estén marcados con `rights.accessrights: Congreso` sólo podrán ser desplegados en vistas desde la red del Congreso

1. Línea de Tiempo:


- `dc.relation.ispartof`:

Línea de tiempo; 1810
 Línea de tiempo; 1811-1833
 Línea de tiempo; 1833-1891
 Línea de tiempo; 1891-1925
 Línea de tiempo; 1925-1973
 Línea de tiempo; 1973-1990
 Línea de tiempo; 1990-2018

- `dc.relation.ispartofseries`
 - `dc-coverage.temporal`
 - `bcn.title`
 - `bcn.description`
 - `dc.rights.accessrights: Congreso o Público`
 - `dc.relation.ispartofseries`
 - `dc.relation.ispartof`:

2. Periodo de tiempo.

Desplegará los contenidos del segmento específico que seleccione el usuario. Este segmento despliega una página de tipo “equeco”. Página de wikibiografías en la que se describe el periodo y que enlazará los hitos relacionados al período, ordenados por año de manera ascendente.

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Línea de tiempo; 1810	http://biografias.bcn.cl/wiki/Categoría:Período_1810
Línea de tiempo; 1811-1833	http://biografias.bcn.cl/wiki/Categoría:Período_1811-1833
Línea de tiempo; 1833-1891	http://biografias.bcn.cl/wiki/Categoría:Período_1833-1891
Línea de tiempo; 1891-1925	http://biografias.bcn.cl/wiki/Categoría:Período_1891-1925
Línea de tiempo; 1925-1973	http://biografias.bcn.cl/wiki/Categoría:Período_1925-1973
Línea de tiempo; 1973-1990	http://biografias.bcn.cl/wiki/Categoría:Período_1973-1990
Línea de tiempo; 1990-2018	http://biografias.bcn.cl/Categoría:Período_1990-2018

- dc.coverage.temporal
- bcn.title
- bcn.description
- dc.rights.accessrights: Congreso o Público

3. Marquesina. Mostrará efemérides de los hitos desplegados de acuerdo a la fecha en curso. Ejemplo: Todos los hitos relacionados con el día específico o el mes en curso.

- dc.relation.ispartof:

Línea de tiempo; 1810
 Línea de tiempo; 1811-1833
 Línea de tiempo; 1833-1891
 Línea de tiempo; 1891-1925
 Línea de tiempo; 1925-1973
 Línea de tiempo; 1973-1990
 Línea de tiempo; 1990-2018

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- dc.coverage.temporal
- dc.title
- bcn.title.alternativo
- bcn.description.abstract
- dc.date.issued (agregado por MF.20/01)
- bcn.identifier: Efeméride
- dc.rights.accessrights: Congreso o Público