
Library Mashups: Web 2.0 Tool for Integrating Contents and Services of Libraries

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Abstract

Mashup is one of the many new phenomena in the Web 2.0 environment. They are largely experimental, but some of them are very useful, well-designed and very popular. Google Maps is the most popular component of Mashups. Amazon, Yahoo! Maps, and photo-sharing site Flickr are also a source for many of the sites. The libraries have been well adapting to the emerging technologies to integrate contents and services in order to provide innovative services to the users. The paper defines Mashup and discusses its various aspects with specific reference to the libraries.

Keywords: Web 2.0, Mashups, Google Maps, API, RSS, Screen Scrapping

1. Introduction

Over the past several years, as the Web 2.0 movement has gathered critical mass, technological mash ups have generated most of the attention, receiving lots of publicity and lots of programming effort. New Mashups are created everyday, ranging from the popular (1412 Google Maps Mashups) to the provocative (Yahoo Wheel of Food). Aaron Boodman, the 27-year-old Google Web developer remarks "The Web was originally designed to be mashed up. The technology is finally growing up and making it possible." [1]

2. Definition

The evolution of Mashup technology is the next stage of Web 2.0. Mashup is a term, originally used in pop music by artists and disk jockeys when two songs were remixed and played at the same time. Web experts have borrowed this term when two or more software tools are merged. The resulting new tool provides an enriched web experience for the users.

Wikipedia defines a mashup as "a web application that combines data from more than one source into a single integrated tool" [2]. Many popular examples of Mashups make use of the Google Map service to provide a location display of data taken from another source.

Hong Chun (2006)[3] defines Mashup as "a web page or application that combines data from two or more external online sources. The external sources are typically other websites and their data may be obtained by the mashup developers in various ways, including but not limited to APIs, XML feeds*, and screen scrapping^{ss}

3. Technical Concept

As illustrated in a video clip on "What Is A Mashup?" [4] from a programmer's perspective a mashup is based on making use of APIs (Application Programmers Interface). A key characteristic of Web

2.0 is the notion of 'the network as the platform'. APIs provided by Web-based services (services provided by companies such as Google and Yahoo) can similarly be used by programmers to build new services, based on popular functions the companies may provide. Content used in Mashups is typically sourced from a third party via a public interface or API (web services). Other methods of sourcing content for Mashups include Web feeds (e.g. RSS or Atom), and screen scraping. Mashups should be differentiated from simple embedding of data from another site to form compound documents. A site that allows a user to embed a YouTube video for instance, is not a Mashup site. As outlined above, the site should itself access third party data using an API, and process that data in some way to increase its value to the site's users. Many people are experimenting with Mashups using Amazon, eBay, Flickr, Google, Microsoft, Yahoo and YouTube APIs, which has led to the creation of the Mashup editor.

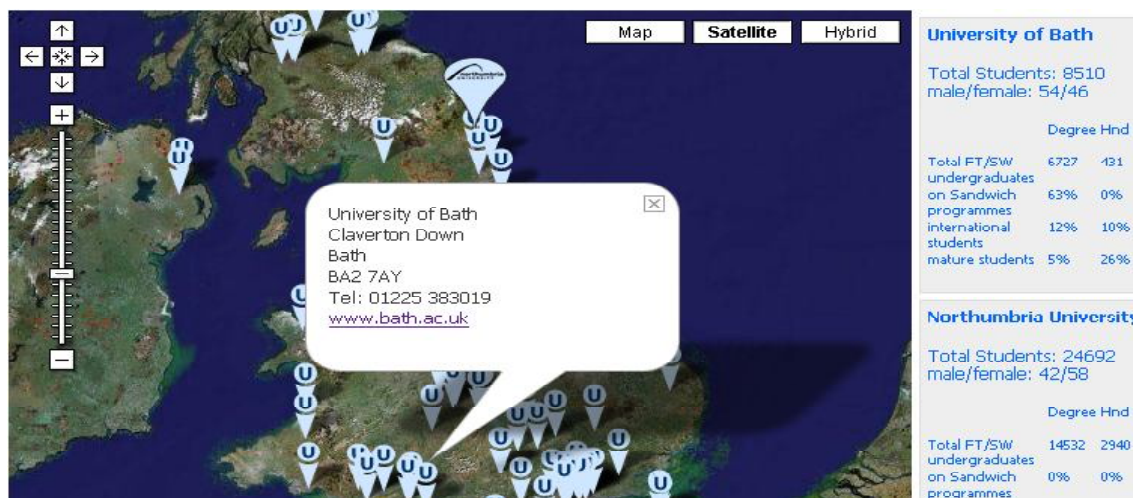


Figure 1: A Google Maps Mashup Showing Location and Data About UK Universities

4. Mashup Architecture

The general architecture of Mashup web applications is always composed of three levels or tiers:

- i. The content provider: It is the source of the data. Data is made available using an API and different Web-protocols such as RSS, REST, and Web Services
- ii. The Mashup site: It is the web application that provides the new service using different data sources that are not owned by it.
- iii. The client web browser: It is the user interface of the Mashup. In a web-application, the content can be mashed by the client web browsers using client side web language for example JavaScript

The Mashup Ecosystem is constituted of Open data, Open Set of services, small pieces loosely joined and you.

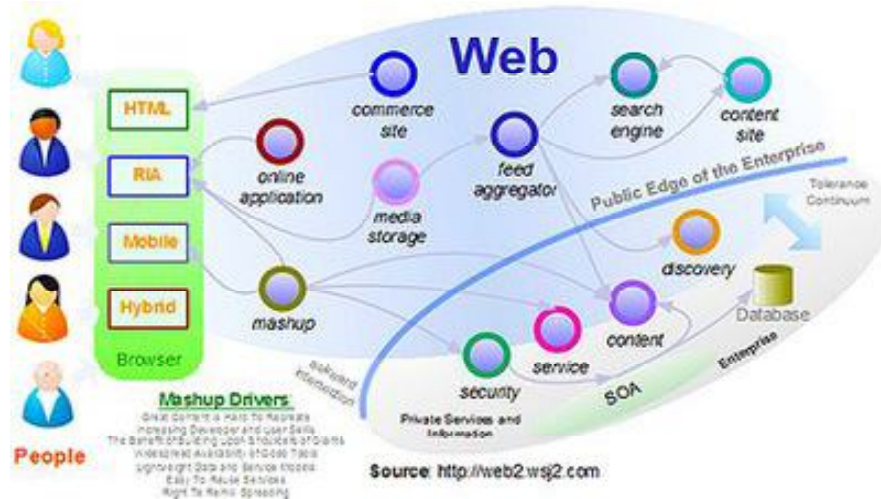


Fig-2: Mashup Ecosystem

Fig: Mashup Architecture [Source: Dion Hinchcliffe's Blog]

<http://web2.socialcomputingmagazine.com/>

5. Essential Features of Mashups

John Herren (2006)[5] has Mashup has highlighted three basic characteristics of a Mashup:

- ◆ Combination: It uses multiple data sources; join across dimensions, subject, time and place.
- ◆ Visualization: It stresses on visual presentation of data sources.
- ◆ Aggregation: It groups data, creates information from data, uncover hidden aspects of data

However, the essential features of Mashup can be summarised as follows:

- ◆ A Mashup is a website or application that uses content from more than one source to create a completely new service.
- ◆ Uses a public interface, RSS feed, or API.
- ◆ Original use was music – combining tracks from different sets and artists.
- ◆ Simple API: Anyone can create one
- ◆ Content from two or more sites
- ◆ Current emphasis on presentation – visual maps, Simple two dimension maps
- ◆ Content structure, data: Issues of compatibility, Every Mashup a unique job
- ◆ Self Service – embed variety of mashups

6. Mashup for Libraries

Mashups in a general sense have been going on in the libraries for many years. In fact the library world has been a leader in blending its programmes and services with the latest trends and technology developments. The combination of different ideas and services are made to reach different audiences or energize existing ones. In the process new experiences are created and traditional services are revitalized.

In this perspective, Web Mashups for today's libraries are carrying on a tradition of innovation started in 1800s, when libraries moved away from the closed organizations that they were into the vibrant cultural and academic centres that they are today. Susan Gibbons, Vice Provost, River Campus Libraries, University of Rochester says, "Mashups are critical to reach users, who now have to exit their preferred Web environments to come to the library and use its services". He further adds, "We have to accept that our library websites are not going to be destinations of choice for our students/patrons. Rather we have to be packaging and serving up parts of our Websites in ways that they can be integrated into the users' preferred virtual destinations, whether that be Google, Facebook or SecondLife. [6]

7. Important Library Mashups

7.1 Library Thing: (URL: <http://www.librarything.com/>)

LibraryThing is a site for book lovers. LibraryThing helps us to create a library-quality catalog of books. We can do all of them or just what you're reading now. And because everyone catalogs online, they also catalog together. LibraryThing connects people based on the books they share. Adding books to our catalog is also easy. Just enter some words from the title, the author or an ISBN. You don't have to type everything in. LibraryThing gets all the right data from Amazon.com and over 690 libraries around the world, including the Library of Congress.

7.2 BookPrice (URL: <http://www.bookprice.net/>)

Bookprice.net offers a quick way to compare the prices of any in-print book of so far 8 online bookstores. We can view the results with or without the shipping costs of a single book. This site collects prices for books in realtime from different online bookstore. There are connections to the original bookstore where one can then buy this item. This is a service to make it easier for us to find low price books, but there is no guarantee that this is the best price. There might be money to save if we check the shipping pages to find the lowest shipping cost.

7.3 TOCRoSS (Table of Content by Really Simple Syndication) (URL: <http://www.jisc.ac.uk/>)

TOCRoSS demonstrated that it is possible to automate the inclusion of TOCs from a publisher into a library OPAC. TOC data for 160 Emerald journals (3,000) articles was pushed using RSS into the Talis PRISM OPAC at the University of Derby library. Searches on keywords retrieved journal articles, and users were able to link through to and view the full text article. Librarians and end users tested

the service, and feedback was on the whole positive about the inclusion of article records in the library OPAC .

7.4 Book Finder 4 You (URL: <http://www.bookfinder4u.com/>)

BookFinder4U is a FREE service that searches 130 bookstores, 80,000 booksellers and 90 million new & used books worldwide to find the lowest book price in A click! At Bookfinder4U, the goal is simple, to provide with a book search and price comparison service that is Comprehensive, Objective and Easy to use.

7.5 Journal Junkie (URL: <http://journaljunkie.com/>)

JournalJunkie.com is a free podcast syndication service for medical practitioners with an insatiable interest in the latest medical news, providing abstract summaries from the highest impact medical journals as downloadable audio. During Beta testing alone, and without any marketing, JournalJunkie.com has already attracted around 30,000 hits per month from over 2000 unique visitors. Subscription to JournalJunkie.com is free, and subscribers can:

- ◆ listen to abstracts immediately
- ◆ download them to their iPod/MP3 player for later
- ◆ set up automatic downloads from their favourite journals to their computer or iPod/MP3 player
- ◆ receive a regular email reminder whenever new audio content from their chosen journals becomes available

7.6 LIBWORM (URL: <http://www.libworm.com/>)

LibWorm is intended to be a search engine, a professional development tool, and a current awareness tool for people who work in libraries or care about libraries. LibWorm collects updates from about 1400 RSS feeds (and growing). The contents of these feeds are then available for searching, and search results can themselves be output as an RSS feed that the user can subscribe to either in his/her favourite aggregator or in LibWorm's built-in aggregator.

7.7 BookJetty (URL: <http://www.bookjetty.com/>)

BookJetty is a social utility that connects several library sites and checks books' availability in the libraries. For a start, BookJetty links up with only Singapore National Library Board. Now, it connects with more than 300 libraries worldwide from 11 different countries, i.e. US, UK, Canada, Australia, Singapore, Taiwan, Hongkong, and more.

7.8 xISBN (URL: <http://www.worldcat.org/affiliate/webservices/xisbn/app.jsp>)

The xISBN Web service supplies ISBNs and other information associated with an individual intellectual work that is represented in WorldCat. If we submit an ISBN to this service, it returns a list of related ISBNs and selected metadata. Ideal for Web-enabled search applications—such as library catalogs

and online booksellers—and based on associations made in the WorldCat database, xISBN enables an end user to link to information about other versions of a source work.

8. Conclusion

Modern approaches to thinking about provision of library data and services online create opportunities for numerous applications beyond the traditionally defined library management system. By adhering to standards from the wider Web community, by considering the library system as an interlocking set of functional components rather than a monolithic black box, and by taking a bold new approach to defining the ways in which information from and about libraries are 'owned' and exposed to others, we make it straightforward for information from the library to find its way to other places online. Rather than being locked inside the library system, data can add value to the experience of users wherever they are, whether it is Google, Amazon, the institutional portal, or one of the social networking sites such as MySpace or Facebook. By unlocking data and the services that make use of it, the possibilities are literally endless, and it is here that efforts such as those around the construction of a library 'Platform' become important.

References

1. Robert, D. 2005. Mix., Match and Mutate. Business Week. [Online] Available at http://www.businessweek.com/magazine/content/05_30/b3944108_mz063.htm
2. Mashup (web application hybrid, Wikipedia, [http://en.wikipedia.org/wiki/Mashup_\(web_application_hybrid\)](http://en.wikipedia.org/wiki/Mashup_(web_application_hybrid)))
3. CHUN, Hong. 2006. Web 2.0-Mashups. ISNM 2006. Modules of Virtual Organizations. Oliver Bohl. [Online] Available at <http://www.oliverbohl.de/DOCS/Mashup.pdf>
4. What is A Mashup? [Online] Available at http://news.zdnet.com/2422-13569_22-152729.html
5. HERREN, John. 2006. Introduction to Mashup development. [Online] Available at <http://www.slideshare.net/jhherren/mashup-university-4-intro-to-mashups>
6. STOREY, Tom. 2008. Mixing it up: Libraries mash up content, services, and ideas. Next Space. 9, p. 7
7. CHO, Allan. 2007. An introduction to Mashup for health librarians. JCHLA/JABSC. v.28, p. 19-22 [Online] Available at pubs.nrc-cnrc.gc.ca/jchla/jchla28/c07-007.pdf

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