


Mashups

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Library 2.0 Seminar
The Ohio State University
Columbus, OH
June 14, 2007



What is a Mashup?

- o A **mashup** is a website or web application that uses content from more than one source to create a completely new service
- o Much the way blogs revolutionized online publishing, mashups are revolutionizing web development

Source: Wikipedia -- [http://en.wikipedia.org/wiki/Mashup_\(web_application_hybrid\)](http://en.wikipedia.org/wiki/Mashup_(web_application_hybrid))



What is a Mashup?

- o The greater availability of simple and lightweight APIs have made mashups relatively easy to design
- o They require minimal technical knowledge and thus custom mashups are sometimes created by unlikely innovators, combining available public data in new and creative ways

Source: Wikipedia -- [http://en.wikipedia.org/wiki/Mashup_\(web_application_hybrid\)](http://en.wikipedia.org/wiki/Mashup_(web_application_hybrid))



What is a Mashup?

- While there are many useful mashups, others are simple novelties or gimmicks, with minimal practical utility
- Exemplifies the Web 2.0 movement with their active user participation and interaction

Source: Wikipedia -- [http://en.wikipedia.org/wiki/Mashup_\(web_application_hybrid\)](http://en.wikipedia.org/wiki/Mashup_(web_application_hybrid))



What is Service Oriented Architecture?

- An architecture that relies on a service orientation as its fundamental design principle
- Uses loosely coupled services that expose resources as independent services that can be accessed without knowledge of their underlying platform



Service oriented architecture (SOA)

- Individual software pieces are build independently and can either be interchanged or repurposed
- A modular approach which facilitates the flexibility and responsiveness required in a changing environment



Service oriented architecture (SOA)

- Simplifies complex processes and technologies, resulting in low-cost, reusable components and the ability to create services beyond what they could create themselves
- Web as an application platform can boost creativity and shorten development time by removing redundancy in the coding process



Service oriented architecture (SOA)

- Developers can create applications that are built on top of other applications to build information systems with reusable components
- Can potentially reduce the long term management costs
- Such systems would enable libraries to more easily share common data between various systems



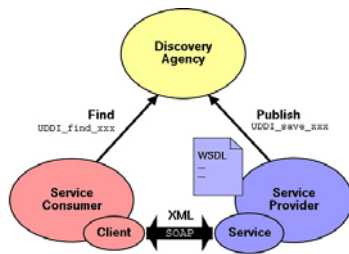
Service oriented architecture (SOA)

- An interface sub-assembly could be redesigned and replaced without disrupting the application and bibliographic data processing sub-assemblies
- SOA can enable libraries to create more dynamic library systems which can evolve and adapt to the changing environment much faster than traditional designs.

Web Services

- Web sites designed for other computers to use
- Examples: Amazon & eBay

Web Services Model



Source: Introduction to Web Services by Philippe Le Hégarret
<http://www.w3.org/2003/Talks/0317-ws-intro/>

Development Tools And Protocols

- API
- XML
- AJAX
- REST / SOAP
- RSS
- Screen scraping



Application Programming Interface (API)

- o An interface to an application's functions that does not require access to the underlying computer code or a detailed understanding of the application's internal workings



How To Find APIs

- o <http://www.programmableweb.com/>
- o <http://www.mashupfeed.com/>



XML

- o Extensible Markup Language
- o A markup language much like HTML
- o Designed to describe data
- o XML tags are not predefined. All tages must be defined



Asynchronous JavaScript (AJAX)

- Ajax allows the exchange, addition or update of data in small quantities to a web page without having to reload the entire page.
- The site may take on the look and feel of desktop applications. (GoogleDocs)



REST / SOAP

- Representational State Transfer - an architectural style for building networked applications
- Services-Oriented Access Protocol - a container to data contained in an XML file around different organizations using different software on different platforms



RSS

- Really Simple Syndication or Rich Site Summary
- A web feed format used to publish frequently updated content such as blogs, news headlines or podcasts.
- Uses XML format



Screen Scraping

- The process of using software tools to read and analyze content originally written and displayed for human consumption, most often using HTML



Anatomy of a Mashup

- Combine or remix content from two or more sources
- The sources are usually other web sites
- The data can be obtained in many different ways
 - Screen scraping
 - APIs **API X + API Y = ?**
 - XML feeds

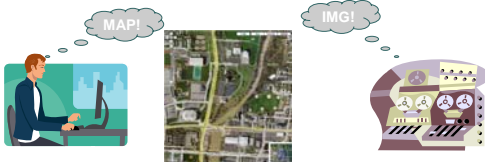


Mashups are Growing Fast

- Ubiquitous web service API
 - Google Maps, Yahoo! Maps, Amazon, Flickr, del.icio.us, etc.
- People can create new applications by reusing the existing parts
 - The whole is more than the sum of its parts
- Maps are intuitive interface

Mashup Issues

- The web has been built for human use. Information is meant for humans to consume and not for computers.
 - A map image is a map to us, but an image to computers.



Mashup Issues

- It's difficult to discover and integrate legacy data into new applications
- What format is the data in?
- Is there permission to use it?
- Proprietary library systems

Questions?

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