



Web 2.0 – Mashups for the Knowledge Worker

Assemble – Wire - Share

Tony Fricko

Agenda

- Web 2.0 – The (r)evolution of the Web
 - Some short observation
 - IBM focus & activities
- Situational applications
 - Mashups
- IBM's incubation project: QEDWiki
 - Goals and overview
 - Demo
 - Case study



Web 2.0 is about

- A lightweight, simple programming model
- Enabling / encouraging communities and sharing on the web
- Data centric approach to the web
 - Repurposing of data



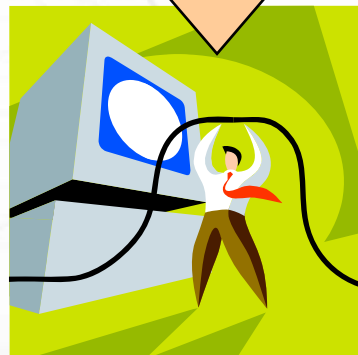
IBM's focus in the Web 2.0 space



Lightweight
Programming
models



Community
building



Information
management

Lightweight programming models

- Ajax
 - Interoperability / Accessibility
- Situational applications - QEDWiki
 - Fast application assembly for knowledge worker



dōjō



Community building

- Lotus

- Lotus Connections
- Lotus Quickr

- SecondLife

- New IBM business unit focusing on Virtual Worlds

- Service offerings

- Consulting beyond IT

Lotus Connections



LOTUS QUICKR 8
The fastest way to share everyday content
across connected teams.



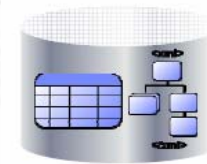
InnovationJam*

Information Management

- SOA and beyond
 - Standardized data feeds

- Data integration
 - Database and content mgmt products
 - Fast integration of data from the Web (RSS, ATOM)

- Semantic Web & Data Search
 - Omnifind – e.g Yahoo edition



DB2 with
XML Support



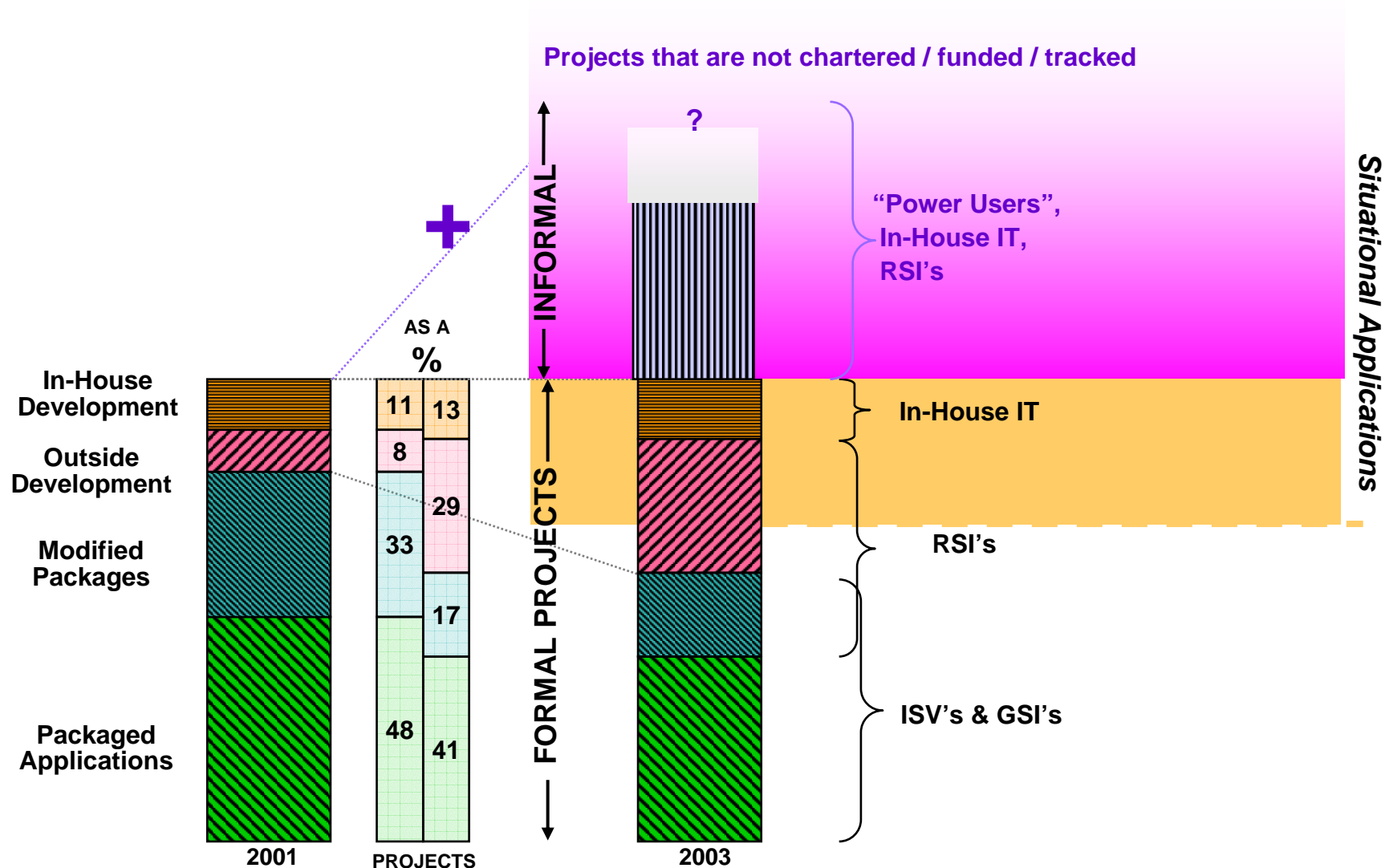
MARVEL



Situational applications – Accent on Effectiveness

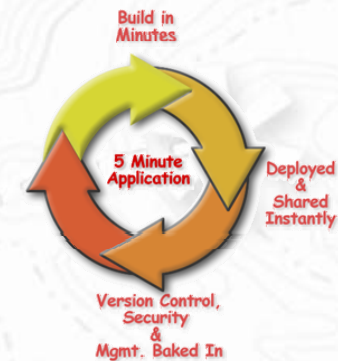
PowerUsers and the IT landscape

A Hidden Segment of the Application Landscape



What is a Situational Application?

- A **Situational Application** is
 - rapidly created (<5mins) to address an immediate need of an individual or community
 - typically but not necessarily short-lived (a just-in-time solution)
 - just good enough
 - informal (lacks product quality look and feel)
- A **Mashup** can be a form of a Situation Application that
 - is comprised of 2 or more disparate components that are bound together through content
 - yields a new utility by seamlessly combining content from more than one data source with behavior to form a new integrated experience



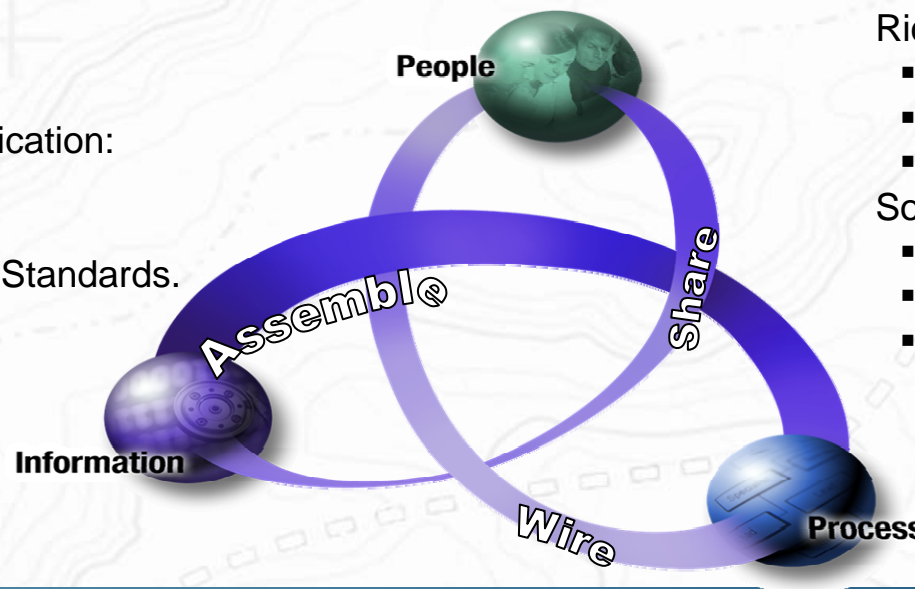
Web 2.0: Situational Applications

Assemble, Wire, Share web applications & services in minutes

Content Syndication:

- Atom
- RSS

Industry XML Standards.
Web Services



Rich Internet Applications

- Mashboards
- Mashup Makers
- Portals

Social Networking

- DogEar
- Instant Messaging
- Activities/communities

- Business process & event customization
- Reliable messaging

Enabling the enterprise to harness Web 2.0 power:

- **Empower the Knowledge Worker to assemble their own web situational applications**
- **Enable non-programmers to wire software components together with behavior and data relationships**
- **Embrace the community spirit of Web 2.0 - Share personal web applications for quick and simple collaborative decision making activities**

Why APIs and Mashups?

- **Make money**
 - 45% of all products get listed via their API
 - 3 billion API calls per month
- **Save money**
 - Smugmug saves \$500K/year with Amazon S3 Storage
- **Build brand**
 - Google Maps 300% growth vs 20% MapQuest
- **Build empires**
 - Over 50% of all transactions via their API
 - Platform for enterprise verticals. 500 apps so far.
- **Innovate**



Birth of the Modern Mashup

s.f. bayarea craigslist > [apts/housing for rent](#) [help] [post]

s.f. bayarea | [san francisco](#) | [south bay](#) | [east bay](#) | [peninsula](#) | [north bay](#)

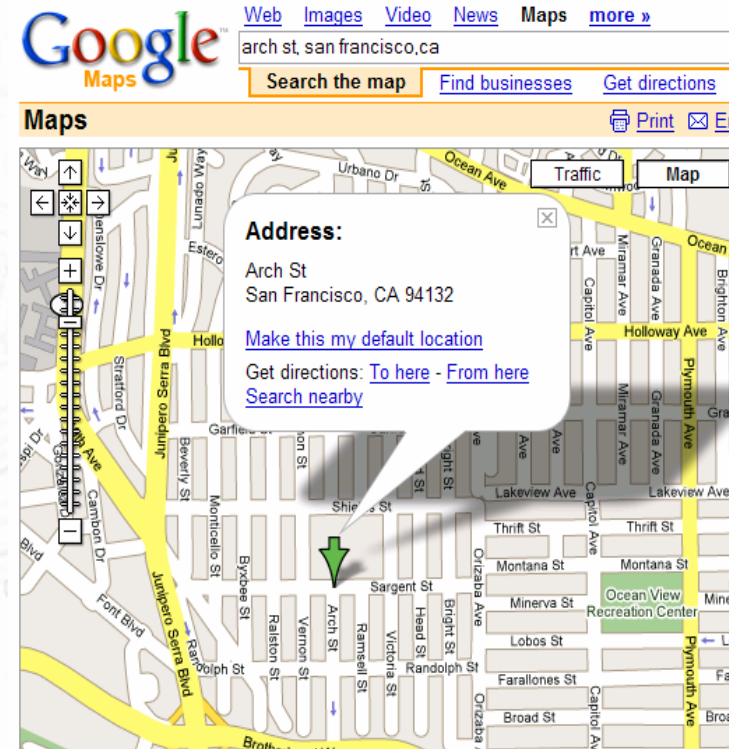
search for: arch st in: apts/housing for rent Search

rent: min max 0+ BR cats dogs

<< Prev Found: 5 Displaying: 1 - 5

- Mar-3 [\\$1095 Top Floor Studio: Charm - Hardwood, Arch Details; Parking Available](#) (mission district) [pic](#)
- Mar-3 [\\$1900 / 2br - FURNISHED TOWNHOUSE, Near UC/B Campus](#) (berkeley north / hills)
- Mar-2 [\\$1919 / 2br - 2BR/1BA Main flr of House, View, Skylights, Hdwd flrs:](#) (ingleside / SFSU / CCSF) [pic](#)
- Feb-28 [\\$1100 / 1br - 1br In-law W/Views and Patio](#) (ingleside / SFSU / CCSF) [pic](#)
- Feb-27 [\\$995 Large Studio in North side at 1434 Arch St. Vacant](#) (berkeley)

+



circa spring 2005

Invention

For Rent [For Sale](#) [Rooms](#) [Sublets](#)

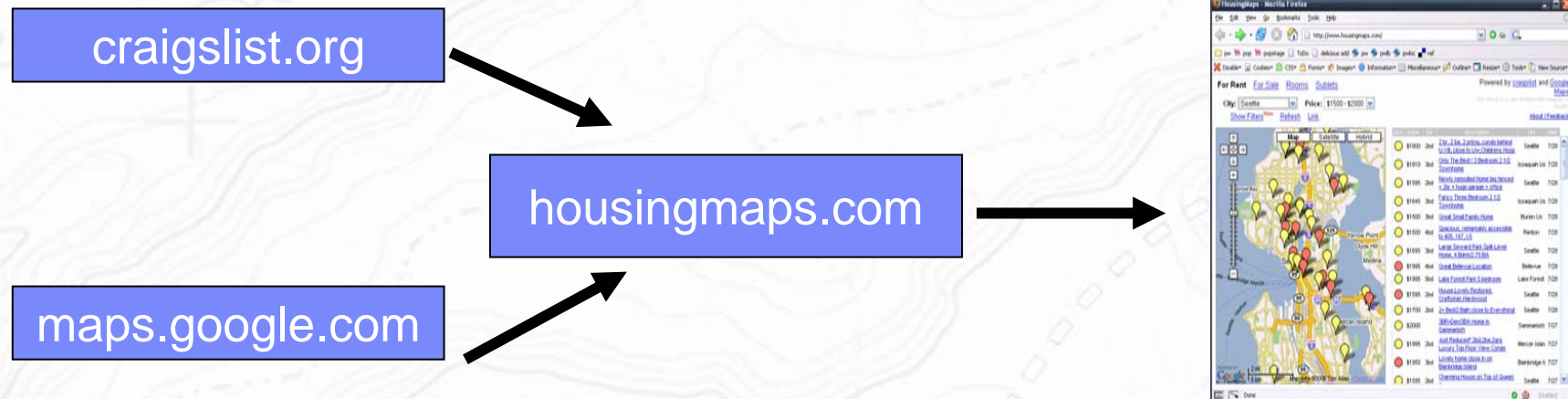
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City: Price: [Show Filters](#) [New](#) [Refresh](#) [Link](#) [About / Feedback](#)

pics	price	bd	description	date
	\$1685	1bd	Pacific Heights - Junior 1Bd - Sunday Showing	3/04
	\$1650	1bd	Very Clean-Lower Flat	3/04
	\$1750	1bd	Single Family Home - 1Bd, 1BA - Great Location	3/03
	\$1895	1bd	Very Large One bedroom, One bath, Hw floors, Granite Kitchen	3/03
	\$1975	2bd	Elegant 2 bed 2 bath with Sweeping Ocean and city view.	3/03
	\$1725	2bd	Nice Bright Corner Flat	3/03
	\$1645	1bd	Brand new 1BR in Cole Valley, Shrader between Rivoil & 17th.	3/03
	\$1695	2bd	Large, bright, 2BR/2BA, Apt. on Great Hwy at Kirkham	3/03
	\$1500	1bd	Richmond dist. Contemporary style 1 bedroom 1 bath	3/03
	\$1800	2bd	Contemporary style 2bdrm 1 bath	3/03
	\$1750	2bd	See Sat&Sun @4:30pm*Remodeled house/cottage Hwd floors* Sunny*Garden	3/03
	\$1990	1bd	Sunny Lower Flat	3/03
	\$1800	2bd	Spacious Two Bedroom Apt.	3/03
	\$1985	2bd	Sunny Flat Nr. Usf	3/03
	\$1550	1bd	Corner one bedroom 15th & Geurrero Open House Sunday(4th) 3:00pm	3/03
	\$1645	1bd	Charming Upper Nob Hill Apartment	3/03
	\$1975	2bd	2BR/1Bath Sunny- top floor flat	3/03
	\$1750	2bd	5th/Clement Sts, 2 bdrm top floor, crpls, dishwasher, nr shops/restaur	3/03
	\$1975	3bd	Awesome views from this baker beach apartment	3/03
	\$1900	2bd	Upstairs 2 Bedroom Apt w/ Large Living Room	3/03

A **mashup** is a website or application that combines content from more than one source into an integrated experience. *(Source: Wikipedia)*

Behind the scenes



Mashup logic and glue...

```
var map = new GMap(document.getElementById("map"));
map.addControl(new GLargeMapControl());
map.addControl(new GMapTypeControl());
map.centerAndZoom(new GPoint(-0.14110, 51.512161), 6);
.....
```

Mashups: Integration of disparate data sources

Programmableweb

Home Blog Mashups APIs Developers Share Learn Discuss About

Mashup Stats
Total mashups: 1417
Past 7 Days: 22
Past 30 Days: 97

Mashups/Day
2.97
7 Days Avg.: 3.14
30 Days Avg.: 3.23

Mashup Dashboard
Hundreds of mashups with new updates daily

Mashup of the Day, January 4, 2007

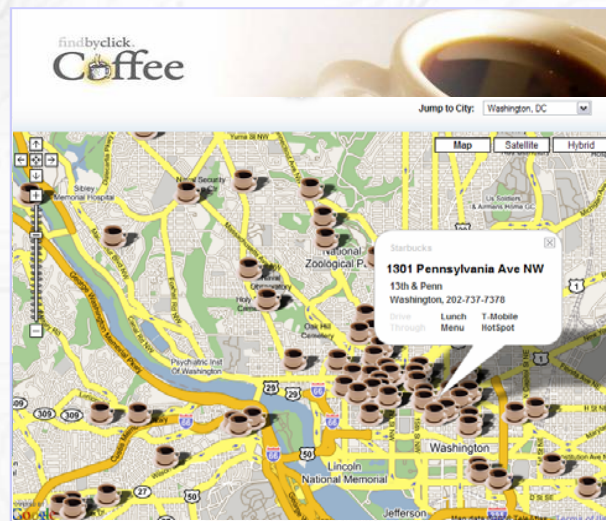
Mpire
Sophisticated online shopping service that searches the most popular online stores in one place to show buyers the true market value of products they want to buy. Over 50 trillion historical sales analyzed.
APIs: eBay
Tags: auction, datamining, shopping, visualization

★★★★★

<http://www.programmableweb.com/>

addressing immediate community needs

- communicate events in locations and updates
- launched 3 days after Katrina
- built in 1 day by one engineer



simple convenience

- locate coffee houses in locations of interest
- display their addresses

consumer services

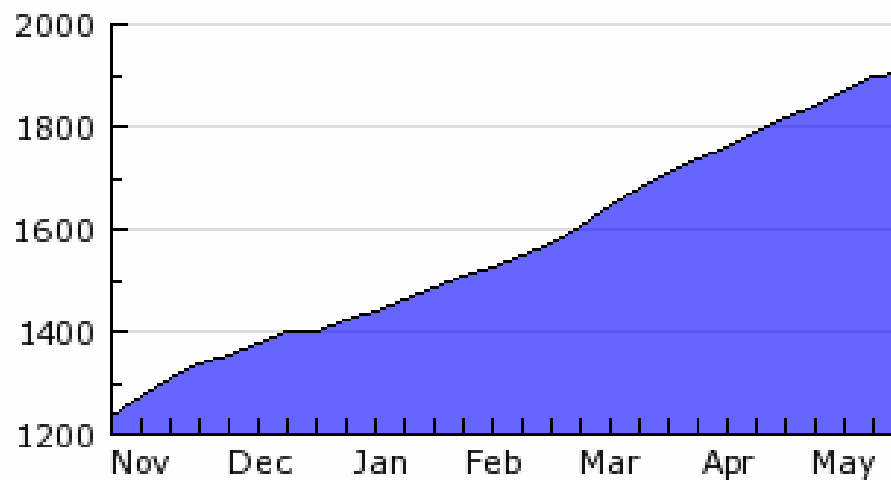
- event tickets - view listings on interactive seating maps
- flag events that you cannot attend using your calendar



ProgrammableWeb Big Picture Stats



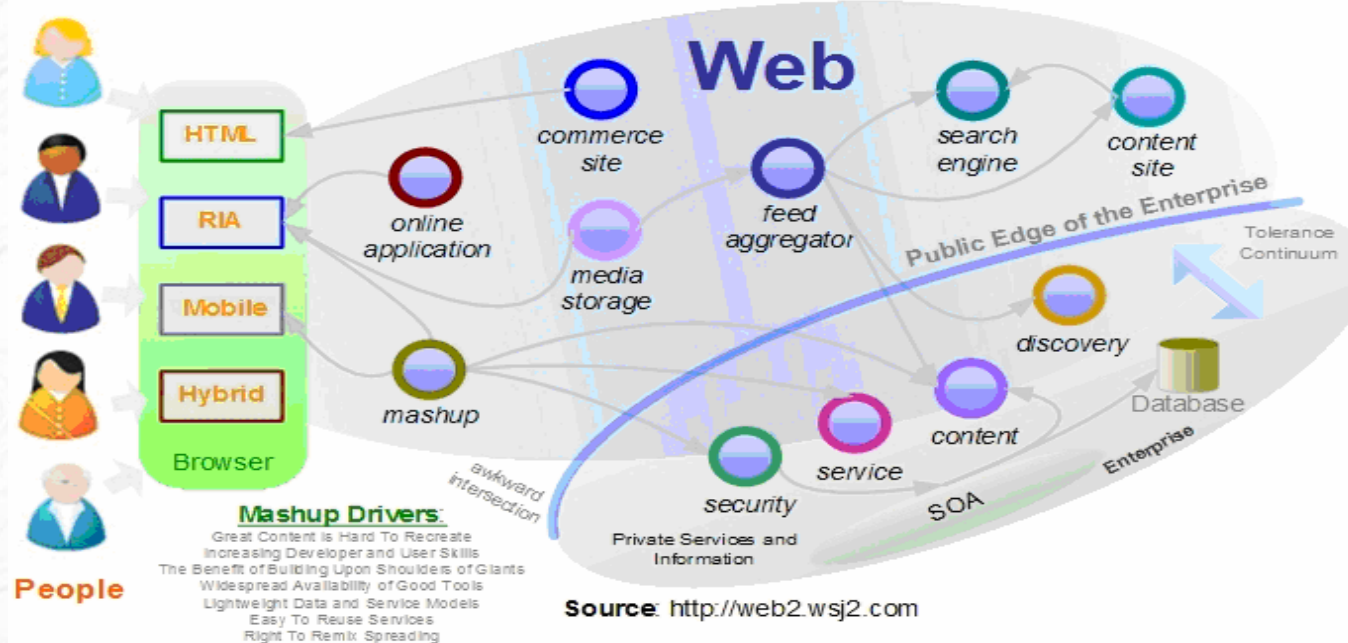
- **460+ APIs**
- **1900+ mashups**
- Thousands more out there



ProgrammableWeb.com 05/14/07

Where do mashups fit ?

The Mashup Ecosystem: Flourishing In An Increasingly Nurturing Environment



Observed Trend: “Widgetization of the Web”

**The Do-It-Yourself Era:
End Users Remixing The Web
out of Parts**



Content & Services are becoming more granular with focus on remixing

Pre-built “Widgets” front-end content and services facilitating consumption by LOB users or consumers

Source: Dion Hinchcliffe's ZDNET Blog

Web part directory: widgetbox

Almost 10.000
blidgets !

The screenshot shows the Widgetbox website interface. The left sidebar contains a 'Categories' list with the following items:

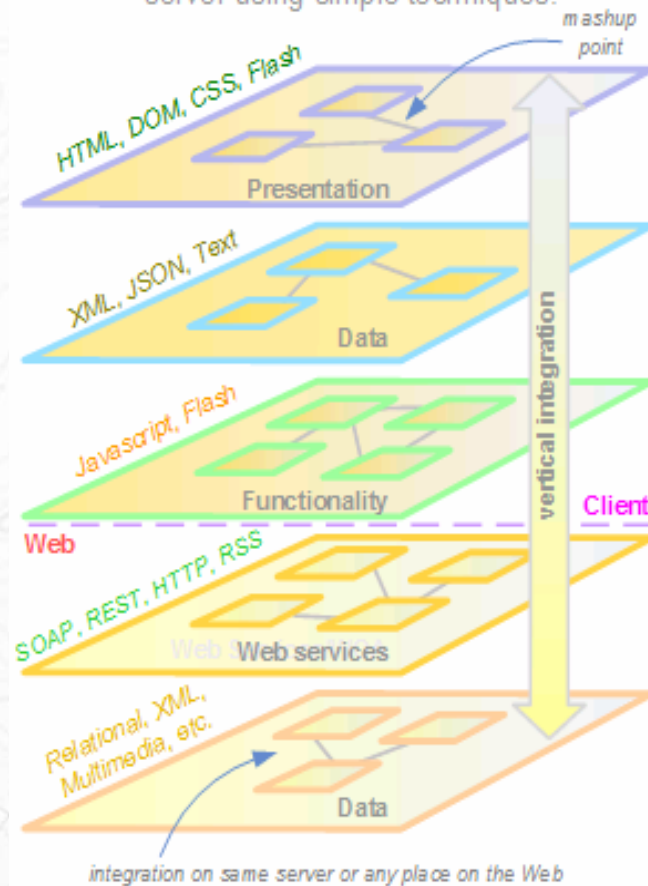
- Blidgets (9,340)
- Blogsphere (226)
- Communication (129)
- Fun & Games (233)
- Interests (197)
- Information (260)
- Media (311)
- Money Makers (110)
- See more tags...

The main content area features a 'Welcome to Widgetbox' message, a 'Featured Widgets' section with entries for TMZ.com, Latest Front Pages from around the World, and Dollwizard, and a 'New Releases' section with items like Ultimate Flash Sonic, Sudoku, and Glitter Text. A 'Most Popular' section lists items like Baby Ticker - The Baby Countdown and Pregnancy Ticker. A 'Top Rated' section lists Star Wars: The Legacy Revealed and Countdown Clock. A 'Brand New Feature!' banner is visible at the bottom right.

Mashup Classification

Web Mashups:

Informal, low-barrier composition and integration at any level in the browser or server using simple techniques.



- Server vs. Client
- Data vs. Presentation vs. Functionality

Illustration from Dion Hinchcliffe

<http://blogs.zdnet.com/Hinchcliffe/?p=49>

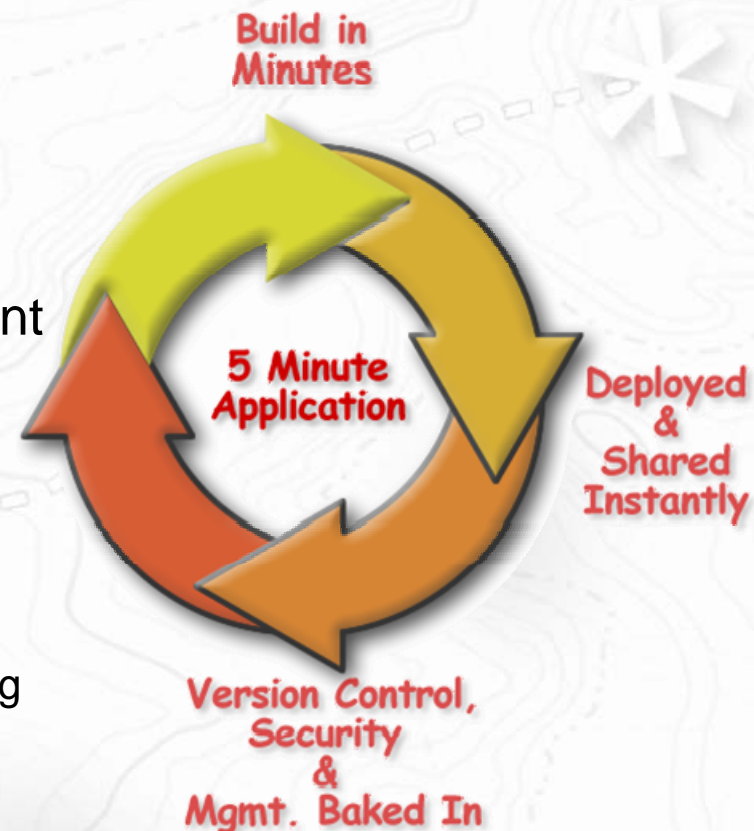
Enterprise Mashup Concepts

Mashups behind the firewall:

- **SOA: Service Oriented Architecture**
 - Service-based, loosely coupled systems
- **Systems Integration**
 - Mashups are type of “Composite Application”
- **SaaS: Software as a Service**
 - All mashups use one or more online services
 - With all the same benefits and challenges
- **Software Reuse**
 - Mashups by definition reuse other services

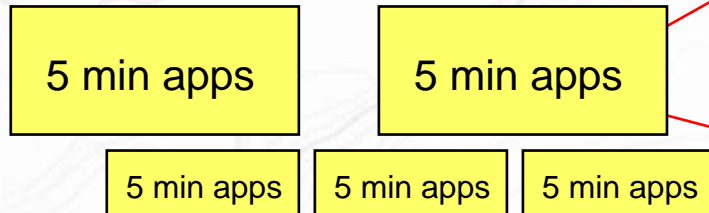
What is QEDWiki

- Wikis are environments for *collaborative*, situational (ad hoc) dynamic content development
- Facilitate Web programming for non-programmers who are domain experts
- Further mark-up based client development strategy
- Are the development tool as well as the application
- Beachhead implementations:
 - www.ning.com – online service for building/using social applications
 - www.jotspot.com – proto-typical application wiki
 - www.protosw.com - .net, spreadsheet centric mashup tool

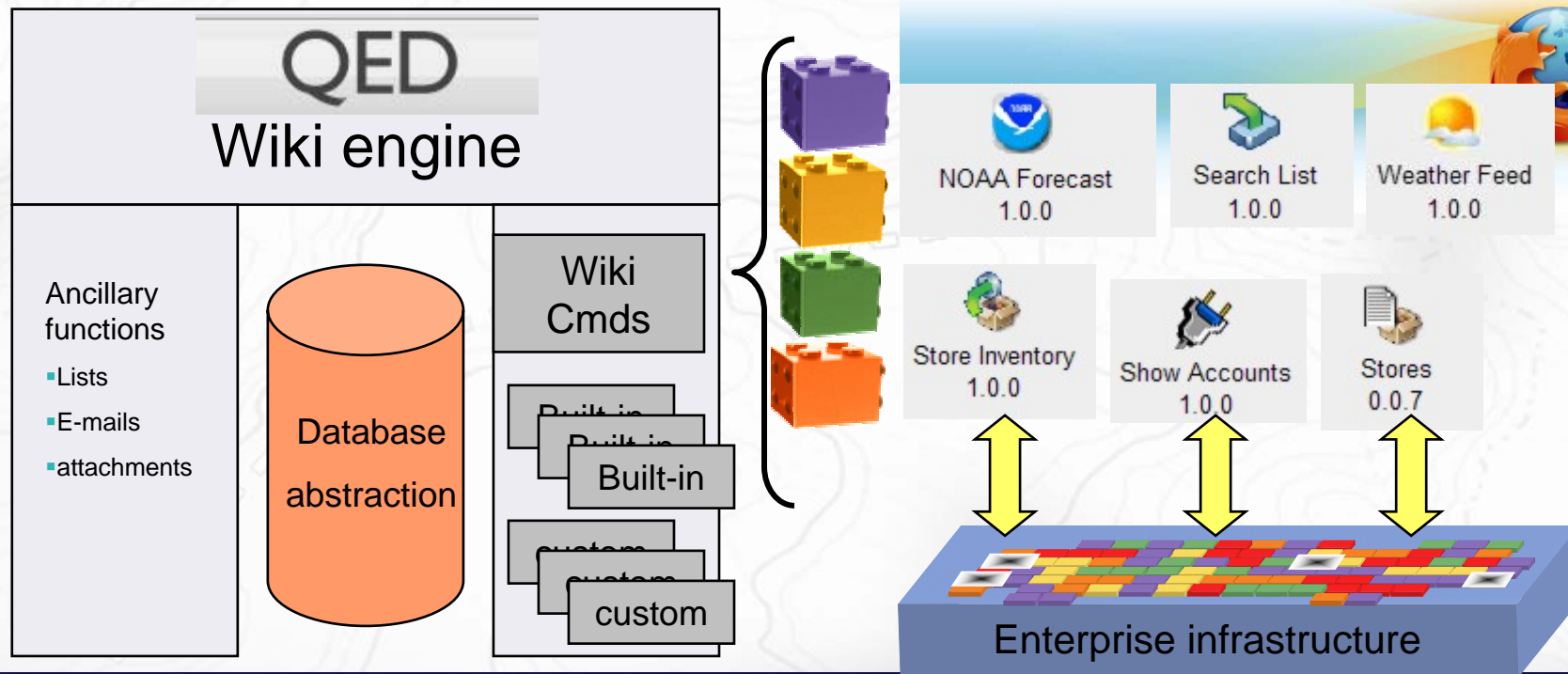


Architectural concept

Mashup Assemblers



Mashup Enablers





A quick look

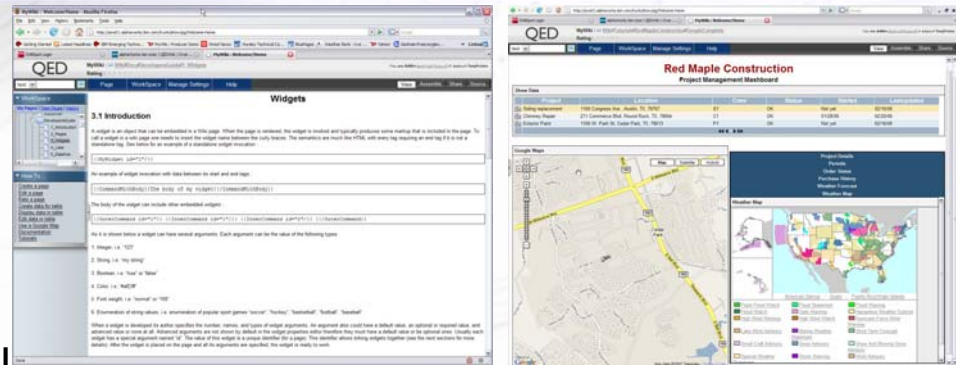
We've Seen...

- Browser based solution
 - created using the Wiki paradigm
 - using existing services
 - built by the end-user
- The Web is the Palette – multiple repositories of “mashable” content including:
 - Aggregator site (e.g. www.programmableweb.com, www.strikeiron.com, www.widgetbox.com)
 - API Providers (e.g. Strikeiron, Google...)
 - Simple mechanisms for sharing and integrating content – “Pave the cow paths”
 - (e.g. www.microformats.org)
- Ajax based interactions for dynamic update and data submission (JSON+DHTML)

3 distinct layers

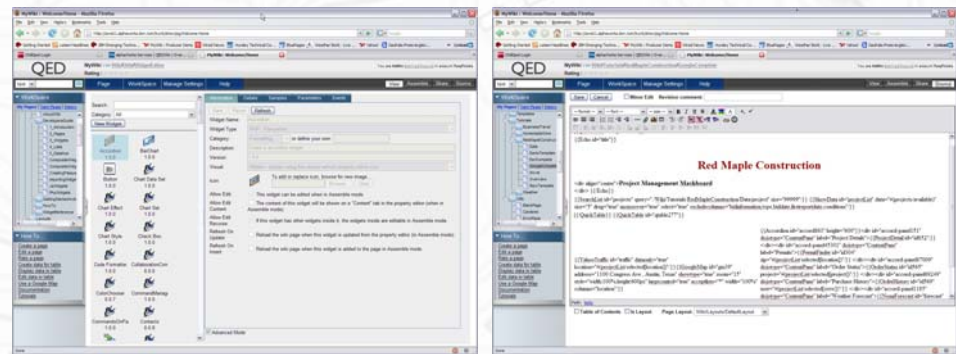
End User –

- Consumers / uses application
- Access to data feeds controlled by Wiki ACL



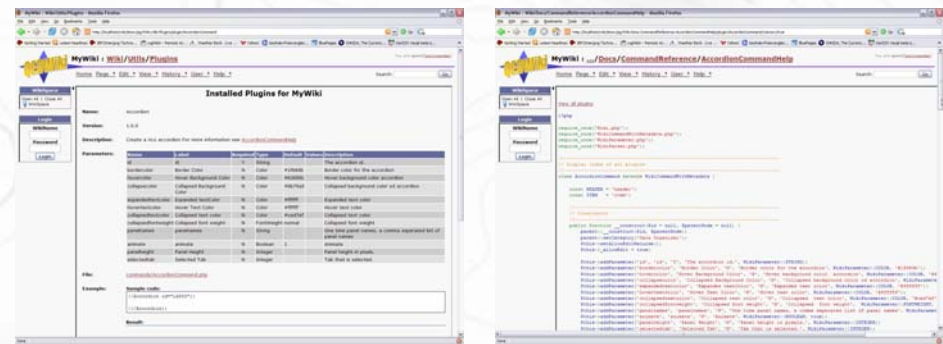
Domain Expert -

- Decides which data feeds are required
- Compiles / Assembles them into Apps

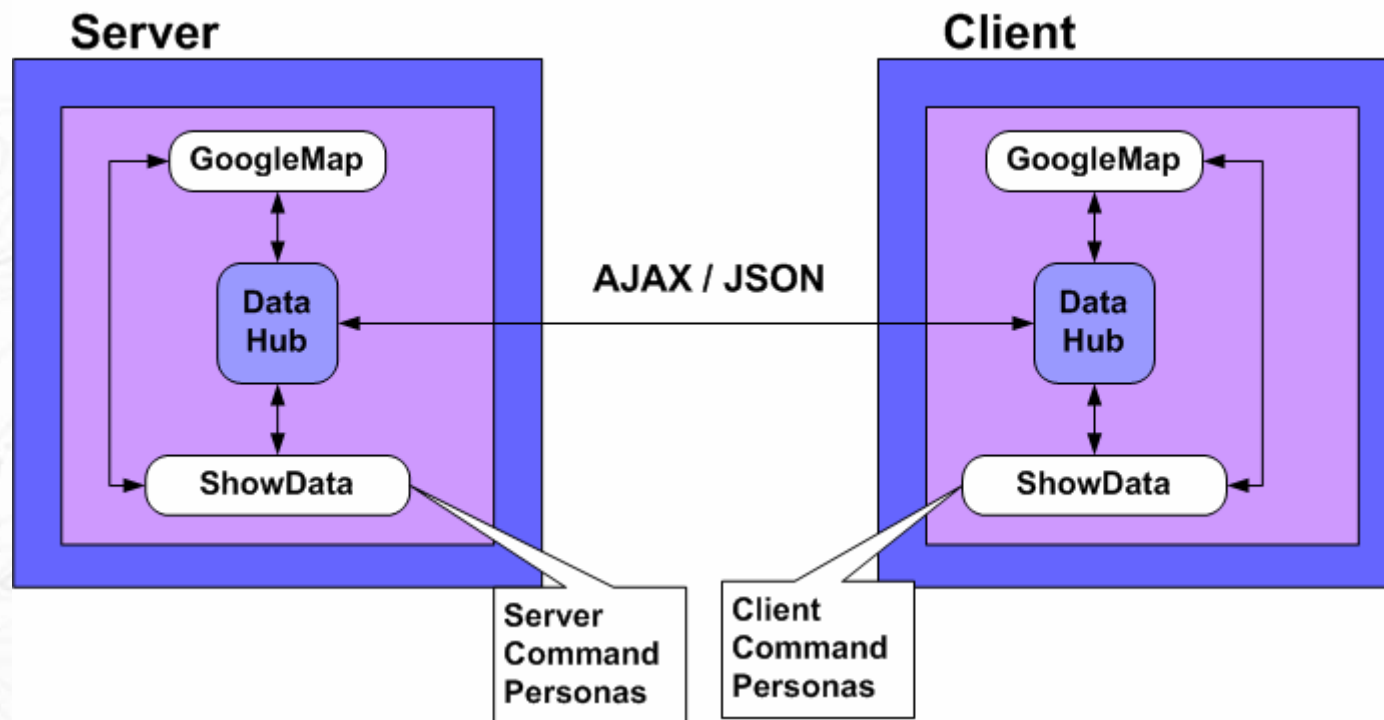


Corporate IT –

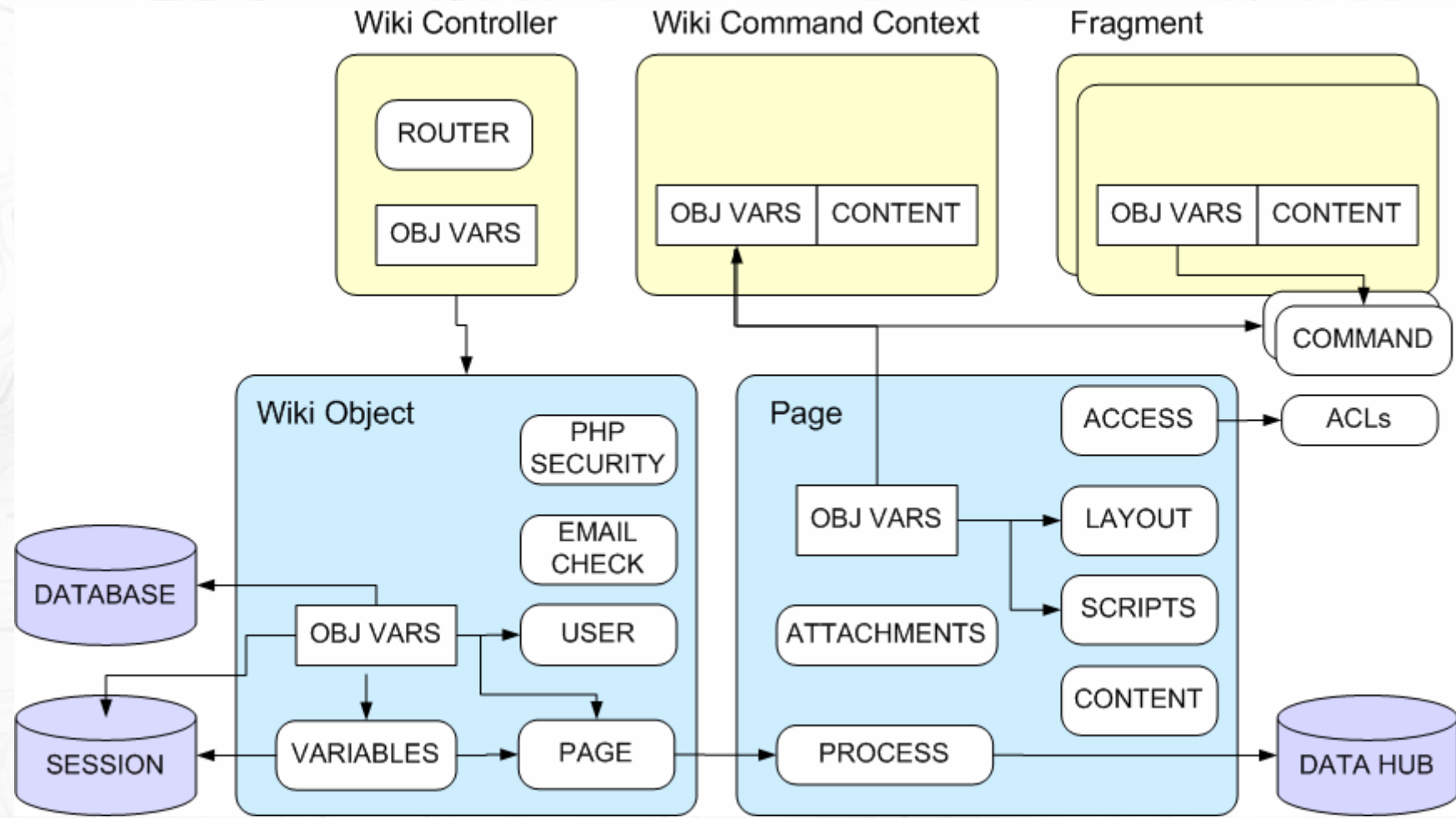
- Controls and provisions data feeds
- Responsible for infrastructure, SLAs,



How a widget communicates



Overview QEDWiki microcomponents



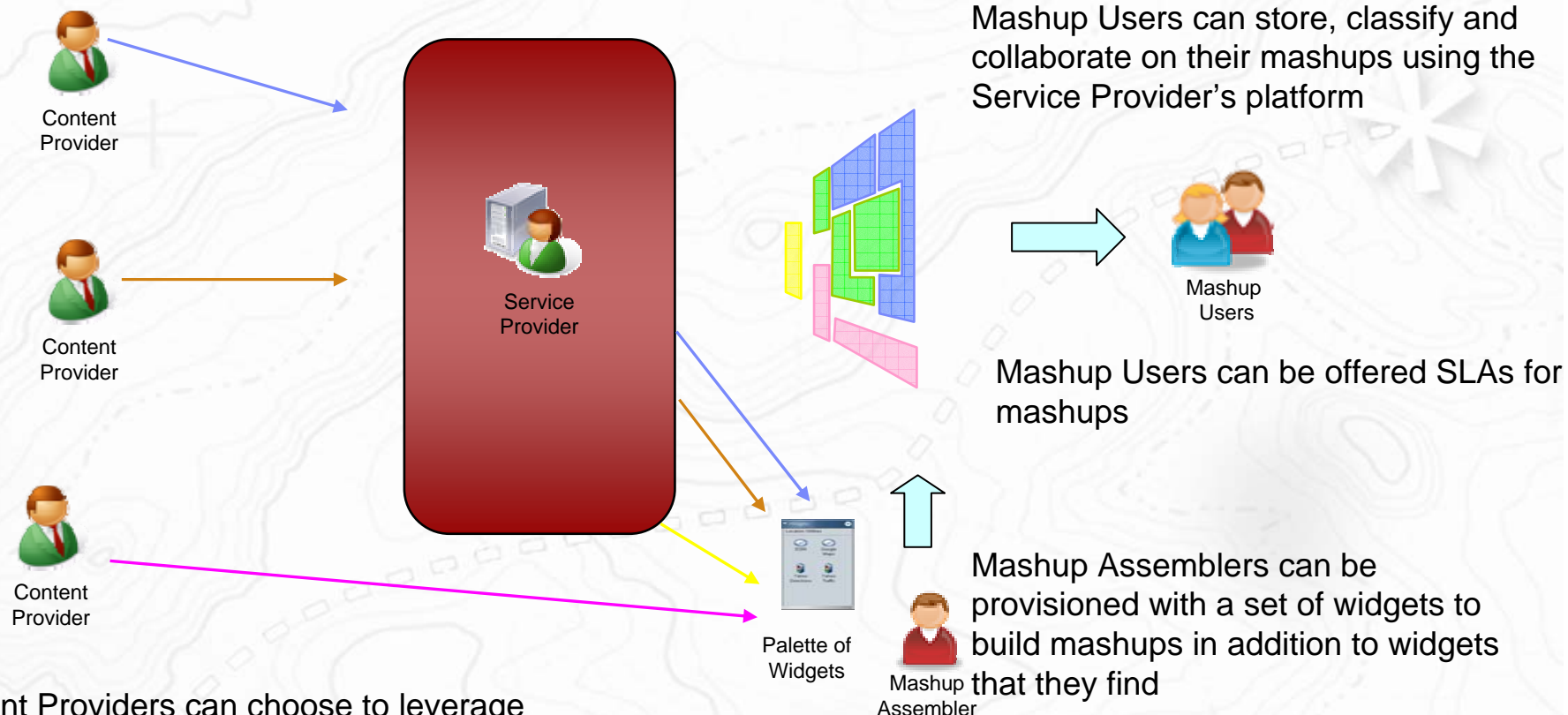
Where can this technology be applied?

- **Situational Applications** (Project or team, focused, possibly short-lived, requirements may change over time)
- **Rich Interactive Wiki Applications:** interactivity, operations amongst different data sources, client side data)
- **Content Management:** The ability to quickly offer and view static content (just like any other Wiki)
- **Forms processing:** Being able to easily create forms by an end user through easy access to and updates to available data sources
 - CRUD: Create, Delete, Update Delete
- **Collaboration at multiple levels**
 - Document Management (Team room concept)
 - SOA: Leverages data services
 - Application level
 - Data level
- **Business Process Workflow**
- **Dashboards**

A topographic map with contour lines. A dashed line with small square markers follows a path across the map. A white star marker is placed on the right side of the map.

Industry scenario for telcos

The Web 2.0 Opportunity for Service Providers



Content Providers can choose to leverage billing/metering/monitoring capabilities of the service provider to reduce costs in the monetization of their content and services

Access to Service Provider's services such as Presence, Location and others will enrich mashups

Mashup Users can store, classify and collaborate on their mashups using the Service Provider's platform

Mashup Users can be offered SLAs for mashups

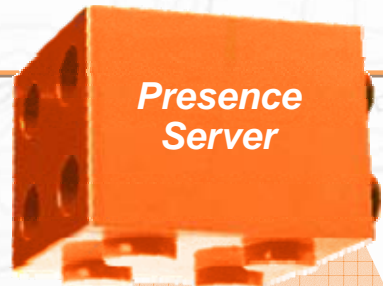
Mashup Assemblers can be provisioned with a set of widgets to build mashups in addition to widgets that they find

Enabling the Service Provider Part 1

A robust standards-based SOA foundation that provides componentized service interfaces enables the Service Provider to surface their core capabilities

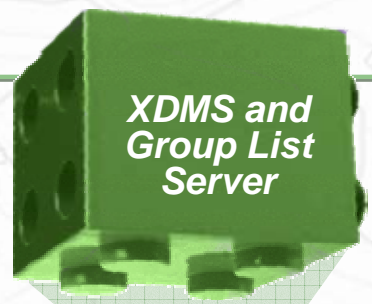


Platform to collect, manage and distribute real-time information regarding user access, availability and willingness to communicate



Presence Server

Platform for creating and managing groups



XDMS and Group List Server

Secure, standards-based third party access gateway across legacy and IMS networks



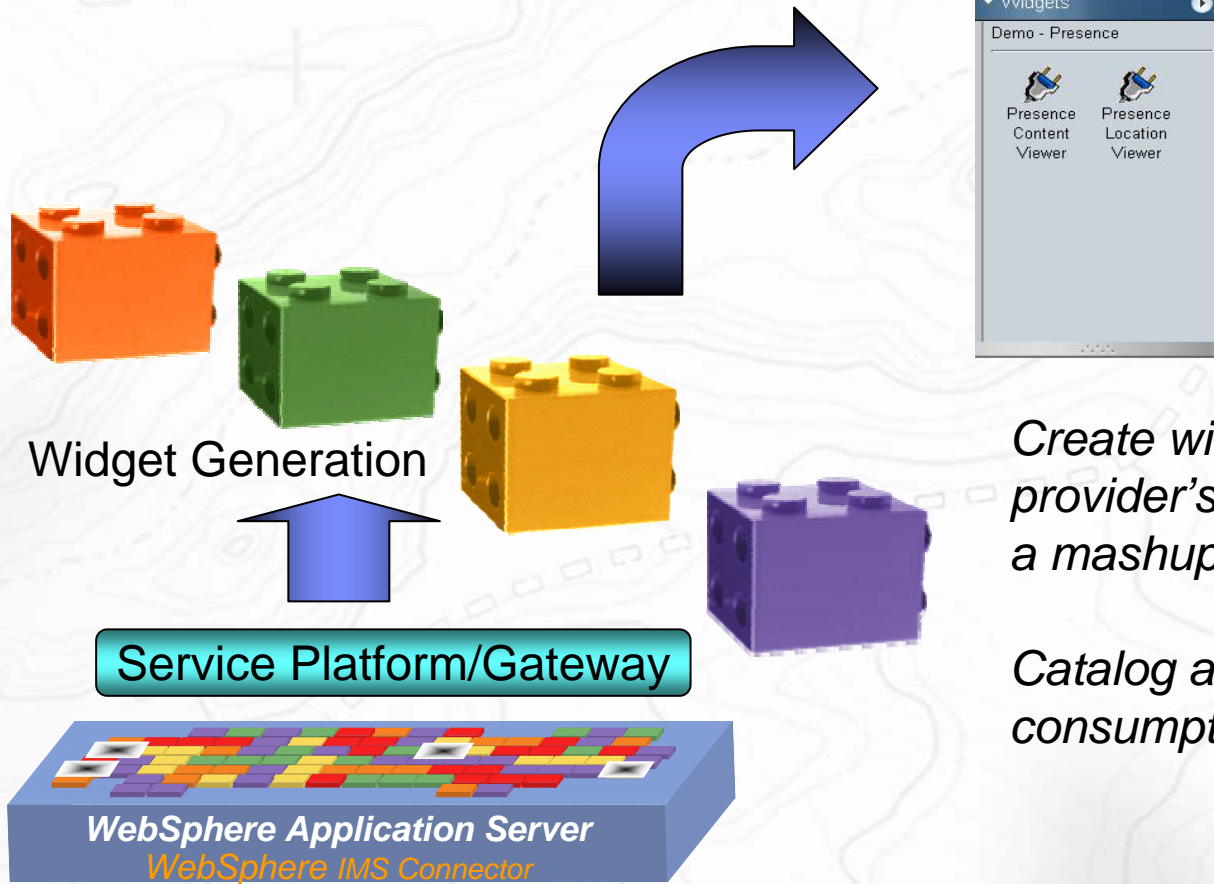
Telecom Web Services Server



WebSphere Application Server
WebSphere IMS Connector

Enabling the Service Provider Part 2

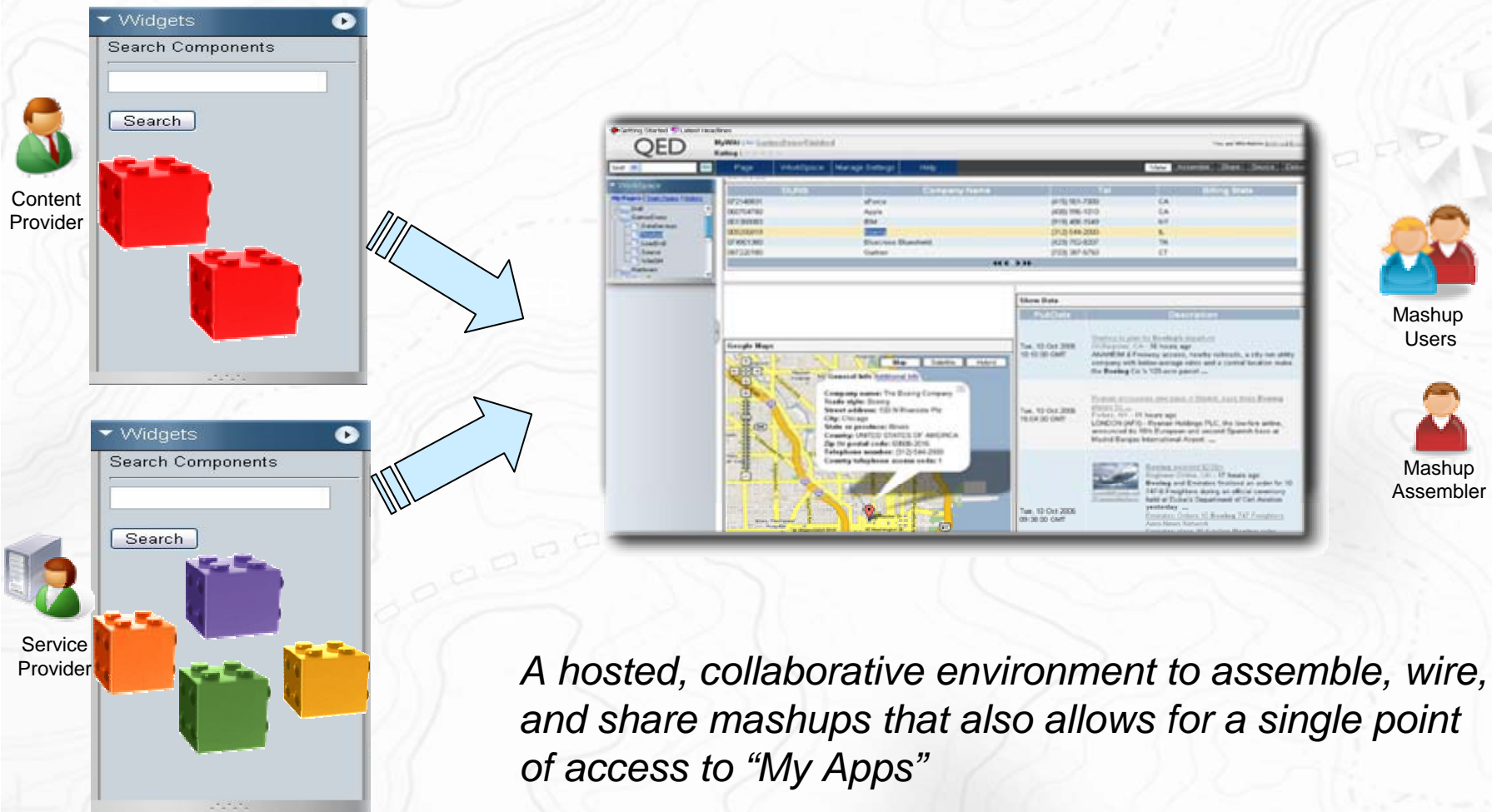
Catalog and Provision



Create widgets that make the service provider's core services consumable in a mashup environment

Catalog and Provision these widgets for consumption by Mashup Assemblers

Enabling the Service Provider Part 3



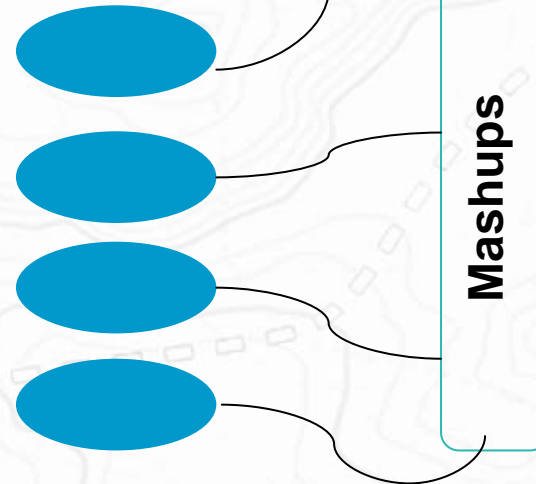
A hosted, collaborative environment to assemble, wire, and share mashups that also allows for a single point of access to "My Apps"

SOA and Web 2.0 - Users pull SOA services

Enterprise IT



SOA Services



Users

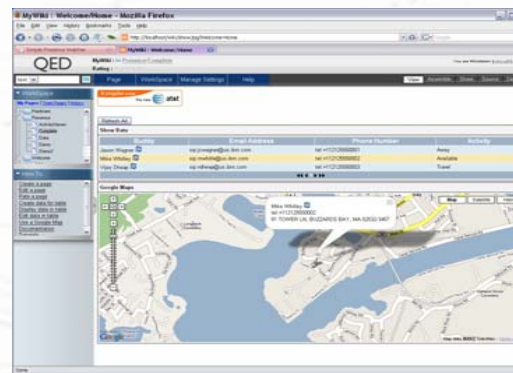


RESULT >> NEW Agility and Flexibility from enterprise integration with user's lightweight services and collaboration

IBM Can Help To Get Started.....Now!

Offering from the IBM Emerging Technologies Team

QEDWiki: Industry recognized collaboration-centric Mashup Maker with browser based tooling for creating widgets or generating widgets



Mashable widgets for Core IMS services



Service Platform/Gateway



Robust Standards-based IMS infrastructure



Conclusions & Summary

- QEDWiki is a Web 2.0 / Enterprise Mashups builder
- Situational Applications and Mashups
 - Are not a new category of applications
 - Describe a new area of focus for web application development
 - Typically ignored or under radar of IT departments
 - IBM seeks to empower knowledge workers to assembler their own mashups
- Subject Matter experts who may not be programmers can
 - create web applications to address just-in-time ad-hoc situational needs
 - Integrate data and markup using widgets to create new utilities
 - Add behavior and relationships to disparate widgets to create a rich interactive application experience
- IBM would be interested in working with you on a near term POC to investigate the concept of situational applications and IBM's QEDWiki
 - Commitment to define scenario, provide sample data
 - Willingness to provide formal, written feedback on the technology

Mashups....



...put a smiley on your SOA

References

- <http://www.programmableweb.com/>
- <http://www.mashupcamp.com/>
- <http://www-128.ibm.com/developerworks/library/x-mashups.html?ca>
- <http://services.alphaworks.ibm.com/qedwiki/>

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