

IBM


Web 2.0

All just hype?

David Leip
STSM, ibm.com CTO, and Agile Methods Advocate

wvow David Leip

IBM



WEB 2.0


What it is, what it's not, and some ideas for moving forward into the Web 2.0 world

wvow David Leip

IBM

Disclaimer

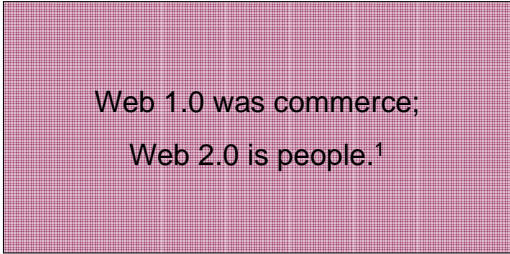
- There are a myriad of definitions and explanations of Web 2.0 in the industry; this presentation discusses some aspects of the most common definitions
- Web 2.0 is an evolution in process; what it is today may be different from what it is tomorrow



wvow David Leip

IBM

What is Web 2.0?



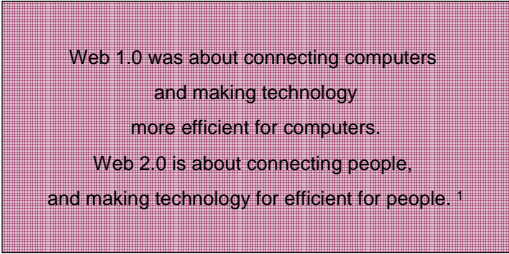
Web 1.0 was commerce;
Web 2.0 is people.¹

¹Wired, Oct. 06, 2005 (<http://www.wired.com/news/technology/0,1282,69114,00.html>); Ross Mayfield, CEO of SocialText

wvow David Leip

IBM

A slightly longer definition ...



Web 1.0 was about connecting computers
and making technology
more efficient for computers.

Web 2.0 is about connecting people,
and making technology for efficient for people.¹

¹O'Reilly Radar, October 03, 2005 (http://radar.oreilly.com/archives/2005/10/web_20_compact_definition.html); Dan Zamborini

wvow David Leip

IBM

From Web 1.0 to Web 2.0

Web 1.0	Web 2.0
Mapquest: presented the visitor with a static view of a map; provided zoom capabilities	→ Google Maps: same capabilities but uses Ajax to provide the user with a smoother, faster experience; no waiting for an HTTP request
Ofoto: allows users to upload their digital photos and get printouts	→ Flickr: allows users to securely manage and share their photos in an online space
Britannica Online: published encyclopedic information on the web	→ Wikipedia: allows users to read, write, update and delete encyclopedia entries on the web
personal websites: individually created and maintained web sites with unique URLs	→ MySpace: a common place to go where everybody is (or can be) your friend; allows you to post your photos, videos, music, blogs
directories (taxonomy): the web site creator decided how the information was organized	→ tagging ("folksonomy"): the users of the web site decide how they think the information fits into their worldview
Stickiness: focus on driving users to the site and keeping them there	→ Syndication: focus on disseminating content from the site out to the interested parties

Sourced and adapted from: <http://www.oreillynet.com/pub/a/oreilly/it/news/2005/09/30/what-is-web-20.html>

wvow David Leip

What is Web 2.0? An extended definition

IBM

Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an "architecture of participation," and going beyond the page metaphor of Web 1.0 to deliver rich user experiences.

Source: Tim O'Reilly

WOW

David Leip

Characteristics of Web 2.0

IBM

- Participatory and Collaborative
- Data and Services
- Responsive Experimentation
- Joy of Use
- Mobility
- Business Model Evolution



Source: Tim O'Reilly

WOW

David Leip

Participatory and collaborative: Description

IBM

- Participatory: affording the opportunity for individual participation¹
 - The traditional web has tended to be one-sided, with a flow of content from provider to viewer; with Web 2.0, the flow is 2-way
 - Barometers: Comment on this page, Rate this page
 - Blogs: (or weblog) is a website in which items are posted and displayed with the newest at the top; blogs often focus on a particular subject²
 - Creating/publishing original content
- Collaborative: To work together, especially in a joint intellectual effort³
 - Allow our visitors not just to participate, but also to help shape their visitor experience and our web site. Examples include:
 - Wikis: a type of website that allows anyone visiting the site to add, remove, or otherwise edit all content, very quickly and easily²
 - Folksonomies: content is categorized using a familiar, accessible, and shared (community) vocabulary

1 Source: WordNet® 2.0, © 2003 Princeton University

2 Source: Wikipedia, www.wikipedia.com

3 Source: The American Heritage® Dictionary of the English Language, Fourth Edition, Copyright © 2000 by Houghton Mifflin Company.

WOW

David Leip

Participatory and collaborative: In action

IBM

- **Wikis:**

Used where they make sense, wikis can be a powerful source of information for an organisation about their visitors, as well as a powerful tool for the visitor to be successful in their task on at a site. For example:

 - How to best work with a company
 - Creative uses for "tips 'n tricks"
 - Allow users to participate in the information provided by a company ("making it their own")
 - Main or task-based navigation pages would not be optimal candidates
- **Barometers:**

Comment on this page, rate this product/service, tell-a-friend, etc.

 - Comment on this page:
 - Provide "free-form" textual comments/suggestions about selected pages or applications on the site.
 - Enables the end-user to influence what we present on our pages or determine how our applications should/could work.
 - Ratings: collect ratings and use them to influence navigation by featuring articles with good ratings on homepages or showing ratings on the page (1-5 Stars)
 - Related information: Suggested links based on user contributions (explicit) or based on clickstream analysis ("customers who are interested in this also...")

WOW

David Leip

Data in the Web 2.0 world: Description

IBM

- **Data Access:** Surfacing the data to the visitor
 - Content Syndication is one way of bringing the right information to the right people at the right time
 - Navigation becomes driven by the data itself, rather than solely by a predefined path chosen by the web site creator
 - Where appropriate, Content Management revolves around lower level components of data, rather than pages of data
- **Data Sources**
 - Sources are no longer strictly internal to a company
 - Licensed data and data bases are the norm
 - Data is continually enriched by the client themselves, explicitly, or by our observations of their actions, implicitly
- **Data State**
 - "Remixing" the data allows for a richer visitor experience; one partially driven by the visitor themselves
 - Enable other people to put together their own experiences from our data
 - Having access to the right data is not enough; adding value to the data will be a business differentiator

WOW

David Leip

Data in the Web 2.0 world: In action

IBM

- A Content Backbone accessible via data display and distribution services is a fundamental component, with the following elements:
 - Enterprise Content Management supplemented by a runtime repository
 - Structured Taxonomies working in conjunction with "Folksonomies"
 - Dynamic assembly of content components for personalized and destination pages
 - Dynamic Navigation driven by a modern search engine will enable access to the desired content
- RSS Feeds: RSS feeds can deliver both data to people and data to a screen for people to view
 - Enable the Homepage as an RSS feed
 - Enable brand and audience pages to serve content from RSS feeds
- Ensure up-to-the-minute data is available for Mashups¹ like product comparison shopping services
- Standards are key.... XML, RSS, Micro-formats

¹ A mashup, according to www.wikipedia.com, is a website or web application that combines content from more than one source

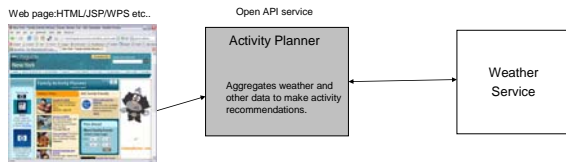
WOW

David Leip

Web Services in the Web 2.0 world: Description IBM

- Web architecture evolves to provide a richer client experience through the use of web services
 - Web Services are built as lightweight, flexible, specific use applications; not as monolithic end-to-end software solutions
 - Software is built as a web service to be purchased or used for a single purpose
 - Data itself becomes almost inseparable from the web service being offered

An example of a simple web service is a weather service. Request data based on longitude, latitude and other factors such as maybe date, and get data returned



Web Services: In action IBM

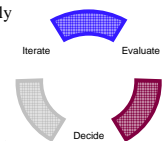
- Distributed Content Modules which leverage multiple data sources through services
 - Distributed Personalization: enabled through identity services
 - Dynamic Related Links, Syndicated Search (OpenSearch RSS)
- Shipping status (DHL, UPS, FedEx...)
- Stock Price Data
- Commerce Solutions
- Outsourced Search
- ...

Web Services: Technology considerations IBM

- Content as a service
 - Generate content fragments in structured formats (XML)
 - Remove the burden from content management systems and Web applications to generate HTML
- Application programming interfaces (APIs)
 - Documented and supported APIs
 - Based on SOAP, REST (XML over HTTP), RSS and ATOM
- Security
 - Access to personal and protected information and access control mechanisms must be implemented server-side
 - Application to application communication authenticated with certificates
 - Third party access to APIs secured with tokens (requires registry)
- Services are easy to use, but not necessarily easy to build

Responsive experimentation: Description IBM

- Carve out small pieces of function on which to iterate, continually evaluate the effectiveness of that function, and make business decisions based on the evaluation
- Experiment and continuously improve both existing and new features and function
- New services will be Beta and declared Beta publicly until matured
- Sampling of audience to try out new services
- Small and simple components
- Experimentation does not mean poor quality
 - Built on solid architecture and infrastructure
 - Documented and supported APIs
 - Easy to use and integrate with other Web 2.0 applications for customers and developers
 - Configure the experience, rather than code it

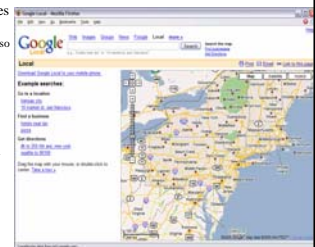


Responsive experimentation: In action IBM

- Innovation pilots and betas: Personalisation, Wikis, Blogs, etc.
- Utilize small, controlled environments for pilots
 - Portions of the web site: segment the audience to try out new features and function
 - Target one customer or one account and get feedback
- Use of Agile Methodologies: Allows for rapid iteration of development cycles
- Sense and Respond Metrics: Create valid business metrics to enable rapid response to changes in visitor behavior or overall site trends
- Easy to use feedback mechanisms: Facilitate the capture of visitor feedback

Joy of use: Description IBM

- **Generate Buzz and Delight the Visitor**
 - Do things that customers like and media talks about
 - The business value of Google Maps may not have been immediately obvious, but it did get a lot of attention
 - Utilize cool and innovative technologies to enhance the visitor experience
 - Add real value to the user experience but also have a "wow factor"
- **More importantly, empower others**
 - There is only so much we can do ourselves
 - Others may have ideas what to do with our data in ways we have not even thought about.
 - Allow and enable others to do "cool stuff" with our assets




Joy of use: In Action IBM

- WebCams and VoIP
 - The ability to click a link on the website which opens a dialogue with a live person over the web (either voice or voice and visual)
- Product Viewing and Assistance
 - Servers: 360° view to show you how to set up and configure a product
- RSS aggregation
 - Give visitors the ability to view all of their RSS feeds in one place

WOW David Leip

Mobility in the Web 2.0 world: Description IBM

- What Mobility means
 - Software and services that operate on multiple devices in a way that is transparent to the user
 - Content that is accessible to the user regardless of the device used
 - Being prepared for the next wave of devices, as yet unknown



WOW David Leip

Mobility in the Web 2.0 world: In action IBM

- Enhance existing functions to be accessible from the wireless devices
 - Drive traffic to the mobile version of the applications through awareness and auto redirects
 - Provide fast access through Search to a wide variety of content from any device
 - Short URLs and easy navigation very important
- Use 2D barcodes in advertising and direct marketing materials to drive Web traffic
 - Customers who see an ad in a magazine or on a billboard, or receive direct marketing material, can point their mobile phone to the 2D barcode and access the related Web site directly without typing lengthy URL addresses
- Provide more syndicated content for site visitors
 - Allow the visitors to take away pieces of your content and explore them at a time of their own choosing (audio or video podcasts, RSS feeds, etc.)
- Automatic Alerts to the cell phone to notify the client of key events:
 - Their order has shipped
 - A proposal is ready for their review
 - Payment has been received

WOW David Leip

Business model evolution: Description IBM

- **Customer interaction changes**
 - The web site becomes but one way to do business with company on the web
 - Customers may never come to the company Web site
 - Interaction is two-way and collaborative through various tools
- **Content and applications change**
 - Open access to selected content assets and applications
 - Integration of third party content and user provided information assets
- **Measuring success changes**
 - Measuring impressions, click-throughs, and conversions becomes more of a challenge
 - Impressions for an RSS feed might the number of subscriptions ... but what is a click-through? A conversion?
 - What is the business value of a visitor contributing to a Wiki?
 - Revenue and market share: more conversions is the goal ... but how do you measure a conversion on a business partner's web site or a comparison shopper's mashup?
 - Most companies sell products and services, not page views or Podcasts or RSS feeds ... how do we relate these things to opportunities?

WOW David Leip

Business model evolution: In action IBM

- **Business Enablement**
 - RSS Feeds and podcasts as communications vehicles
 - Function delivered to the client, rather than coming to the site
 - Use Web 2.0 tools and concepts to innovate with value partners (clients, BPs, etc.)
- **Content Enablement**
 - Ensuring that the right content is available in the right places
 - Mashups, Wikis, Blogs, Folksonomies, etc. all contribute to bringing in data from other sources to enhance the value of the site and fostering collaboration between a company and its value partners
- **Metrics Enablement**
 - Validate and track goal, family, and role definitions
 - Comprehensive, site-wide measurements of content, page and site value to visitor
 - Continuously assess the quality of site navigation
 - Segment metrics by industry, by other profile attributes, and by account
 - Account segmentation allows questions like "What is a given client thinking about?"
 - New ways to measure OO, OL, and OD
 - OD = Opportunity Discovery, e.g. notify account rep that "Client X is investigating CRM"

WOW David Leip

Tech considerations: Moving into the Web 2.0 world IBM


Web 2.0 server infrastructure has some challenges

- Web 2.0 technologies work best on a single logical Web server (Ajax and XLST work in a subdomain/domain, depending on browser)
- One approach is the integration of multiple Web hosting infrastructures under a single "front-end"
- Globally mirrored infrastructure to reduce latency


AJAX applications


- Augment user interaction and enable highly interactive, desktop-like applications
- Usually require large initial download and frequent network interactions
- Alternate implementation required for non-JavaScript access (Accessibility, Search engine crawlers)

WOW David Leip


Resources and Links 

- Tim O'Reilly's original article on Web 2.0 (Sept 30, 2005):
– <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>
- Review of the Year's Best Web 2.0 Explanations (Jan 4, 2006), by Dion Hinchcliffe
– <http://web2journal.com/read/165914.htm>
- "The New Wisdom of the Web", Newsweek (Apr 6, 2006)
– <http://www.msnbc.msn.com/id/12015774/site/newsweek/>

 David Leip

A thought to ponder ... 

If Web 1.0 was commerce and
Web 2.0 is people ...
What will Web 3.0 be?

 David Leip