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# Web 2.0

## All just hype?

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# WEB 2.0

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

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## Disclaimer

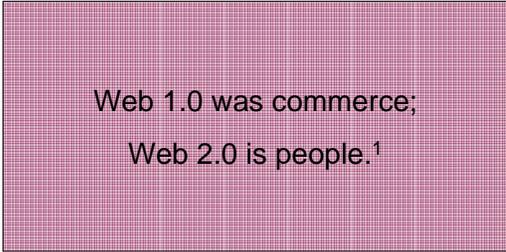
- There are a myriad of definitions and explanations of Web 2.0 in the industry; this presentation discusses some aspects of the most common definitions
- Web 2.0 is an evolution in process; what it is today may be different from what it is tomorrow



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## What is Web 2.0?



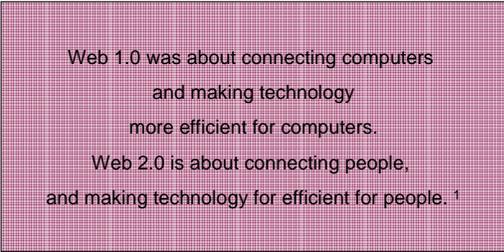
Web 1.0 was commerce;  
Web 2.0 is people.<sup>1</sup>

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

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## 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.<sup>1</sup>

<sup>1</sup>O'Reilly Radar, October 03, 2005 ([http://radar.oreilly.com/archives/2005/10/web\\_20\\_compact\\_definition.html](http://radar.oreilly.com/archives/2005/10/web_20_compact_definition.html)); Dan Zamborini

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## From Web 1.0 to Web 2.0

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

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## What is Web 2.0? An extended definition

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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

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## Characteristics of Web 2.0

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



Source: Tim O'Reilly

## Participatory and collaborative: Description

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- Participatory: affording the opportunity for individual participation<sup>1</sup>
  - 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 subject<sup>2</sup>
    - Creating/publishing original content
- Collaborative: To work together, especially in a joint intellectual effort<sup>3</sup>
  - 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 easily<sup>2</sup>
    - Folksonomies: content is categorized using a familiar, accessible, and shared (community) vocabulary

<sup>1</sup> Source: WordNet® 2.0, © 2003 Princeton University

<sup>2</sup> Source: Wikipedia, www.wikipedia.com

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

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## Participatory and collaborative: In action

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- **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...")

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## Data in the Web 2.0 world: Description

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- **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

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## Data in the Web 2.0 world: In action

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- 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 Mashups<sup>1</sup> like product comparison shopping services
- Standards are key.... XML, RSS, Micro-formats

<sup>1</sup> A mashup, according to [www.wikipedia.com](http://www.wikipedia.com), is a website or web application that combines content from more than one source

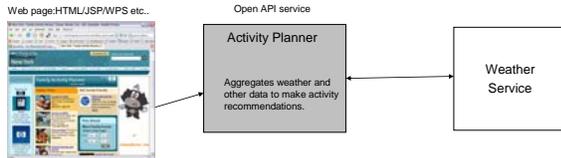
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## Web Services in the Web 2.0 world: Description IBM

- 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



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## 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
- ...

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## Web Services: Technology considerations IBM

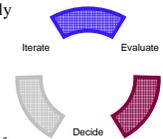
- Content as a service
  - Generate content fragments in structured formats (XML)
  - Remove the burden from content management systems and Web applications to generate HTML
- Application programming interfaces (APIs)
  - Documented and supported APIs
  - Based on SOAP, REST (XML over HTTP), RSS and 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

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## 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



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## 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

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## 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



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## 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

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## 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



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## 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

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## 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?

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## 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"

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## 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)

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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/>

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A thought to ponder ... 

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

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