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## Web 2.0 – The next generation platform

From Information to Applications and on to Interactions, the web is undergoing a revolution.

By looking at the latest interface technologies from Google, Yahoo! and others, this talk will examine how businesses and users can gain from the latest Web 2.0 technology.



# Who am I and what do I do?

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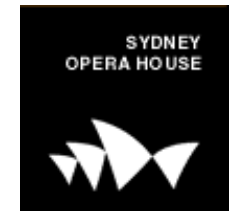
- Bahram Boutorabi CEO and Chief Technology Architect
- Started web development in 1992
- Enjoy technology and innovation
- Founded 3 technology companies
  - Creative Digital Technology 1992
  - GPayments 1999
  - FileSphere 2003



# Who we have served since 1992



First for Business  
Department of State and  
Regional Development



# Who is using our technology today



# Let's talk about Web 2.0

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What is it

How has it evolved

How can we benefit from it



# Web 2.0 – what is it?

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- The term “Web 2.0” was used by O'Reilly and MediaLive as a name for a conference in 2004
- There are now in excess of **597,000,000** citations in Google for Web 2.0
- The concept of Web 2.0 has been widely recognised as defining the *new world wide web*



# Web 2.0 – what is it to us?

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- ❑ Blog writing
- ❑ File Sharing
- ❑ Digital Storytelling
- ❑ Diggs and Folksonomy
- ❑ Wikis and Social Software
- ❑ RSS Feeds
- ❑ Podcasting
- ❑ Mashups



# Web 2.0 – what is it really?

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- It is a paradigm shift (Read -> Write -> Interact)
- It is a web platform (e.g. Google, Yahoo, Microsoft)
- It is a new user interaction experience (e.g. RIA)
- It is a user expression model (e.g. WIKI, Blog, )
- It is a social media environment on a global scale
- It is an open development environment
- It is the “will of people”, emerging and growing
- It is the collective ...



# Web 2.0 in short

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- Rich user experiences allowing everyone to contribute, develop and build
- Collective intelligence being captured by connected tools and services
- The necessary step in preparation for Web 3.0 or the “intelligent web” (Semantic Web)



# Sneak preview of Web 3.0

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*I have a dream for the Web [in which computers] become capable of analyzing all the data on the Web – the content, links, and transactions between people and computers. A ‘Semantic Web’, which should make this possible, has yet to emerge, but when it does, the day-to-day mechanisms of trade, bureaucracy and our daily lives will be handled by machines talking to machines. The ‘intelligent agents’ people have touted for ages will finally materialize.*

Tim Berners-Lee, inventor of the World Wide Web in his book “Weaving the Web”



# Web 3.0 – the intelligent web

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What do you think will happen when the web generation takes over!

What kind of web will they develop?

Example of going to an event



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# Back to the reality of Web 2.0

The evolution of the web

- the network
- the browser
- the user
- the tools and technology
- the opportunity



# Web 2.0 – web evolution

## Web 1.0

(1993 - 2003)

Web pages viewed through a browser



## Web 2.0

(2003 - 2010)

Content created and shared over the web

Read	Mode	Write & Contribute
Page	Unit of content	Post / record
Static	State	Dynamic
Web browser	Viewed through	Browsers, RSS Readers, Mobile
Client/Server	Architecture	Web Services
Web Coders	Content Created by	Everyone
Geeks	Domain of	All of us



# The network

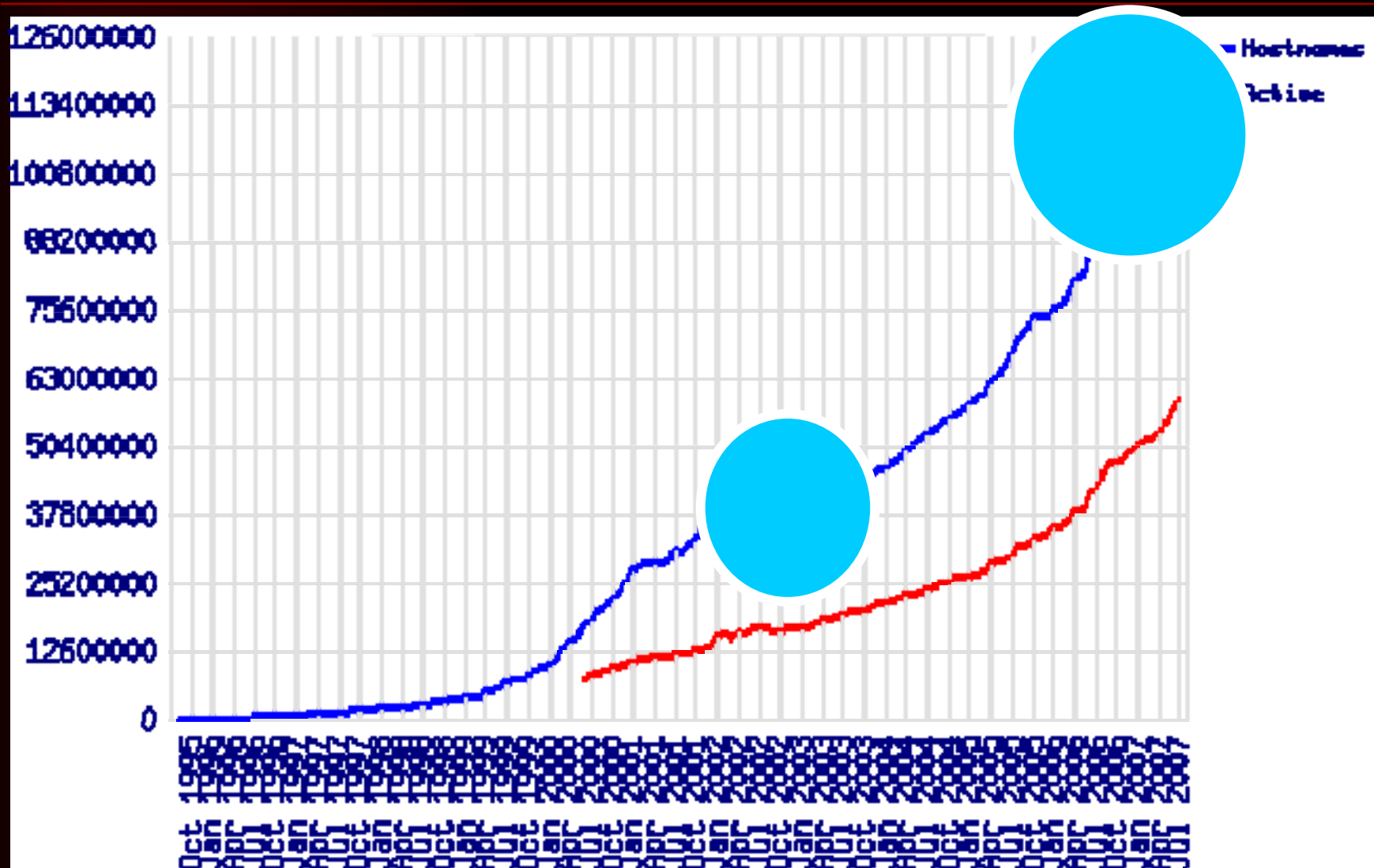
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How has the network evolved



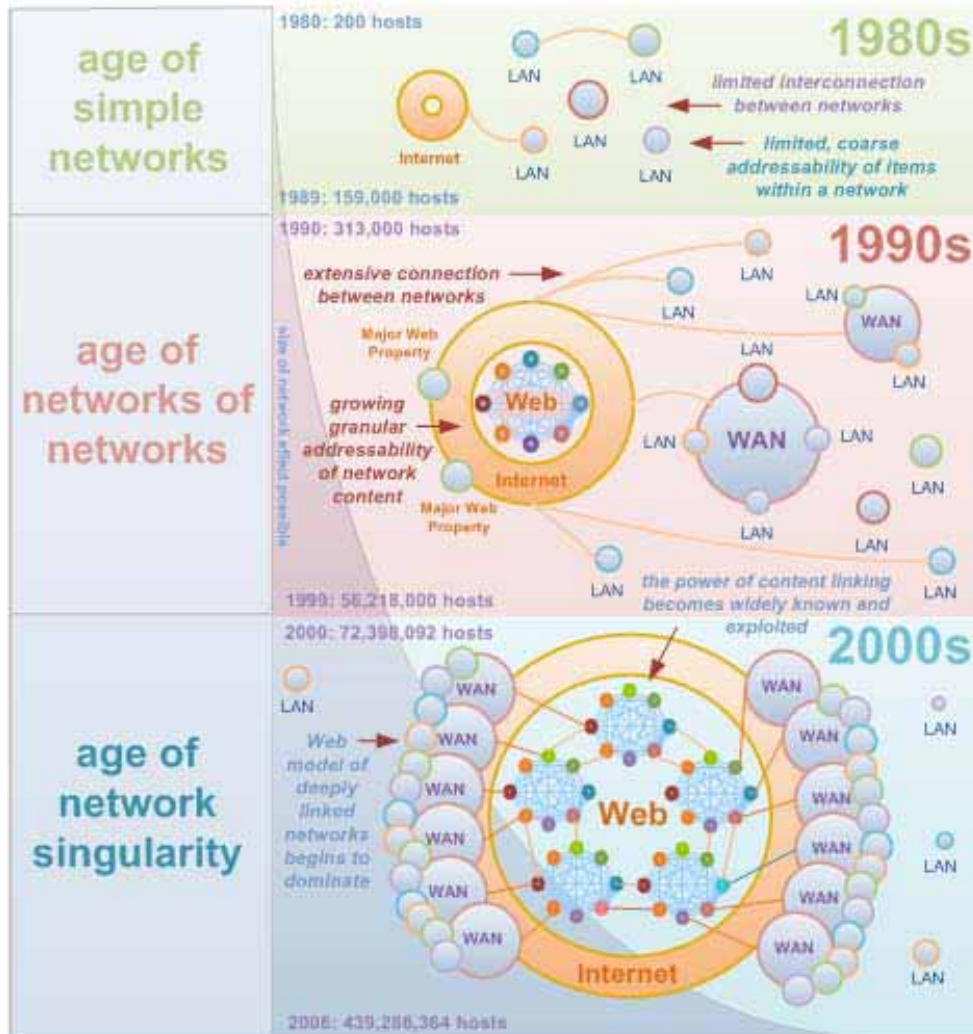
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# The network is growing



Source: [http://news.netcraft.com/archives/web\\_server\\_survey.html](http://news.netcraft.com/archives/web_server_survey.html)

# The web is now dominating



The web has reached well over 1 billion people.

It has now become the dominant platform, imposing its structure on all other networks



# The Browser

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How has the browser evolved



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# The browser evolution

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- Web browser 1.0
  - Navigate, Read and Print information
- Web browser 2.0
  - Aggregate, Interact and Self serve
  - Take it off-line or wireless and do it all
- Web browser 3.0
  - Agents do it for you
  - You direct and monitor



# More changes

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- Write and generate the Web
- Develop and consume Widgets
- Aggregate and customise information
- Create new applications and platforms
  - (Yahoo Pipes and Google Gears)
- Shift technology towards SOA (web services)
- Create new business models and opportunities



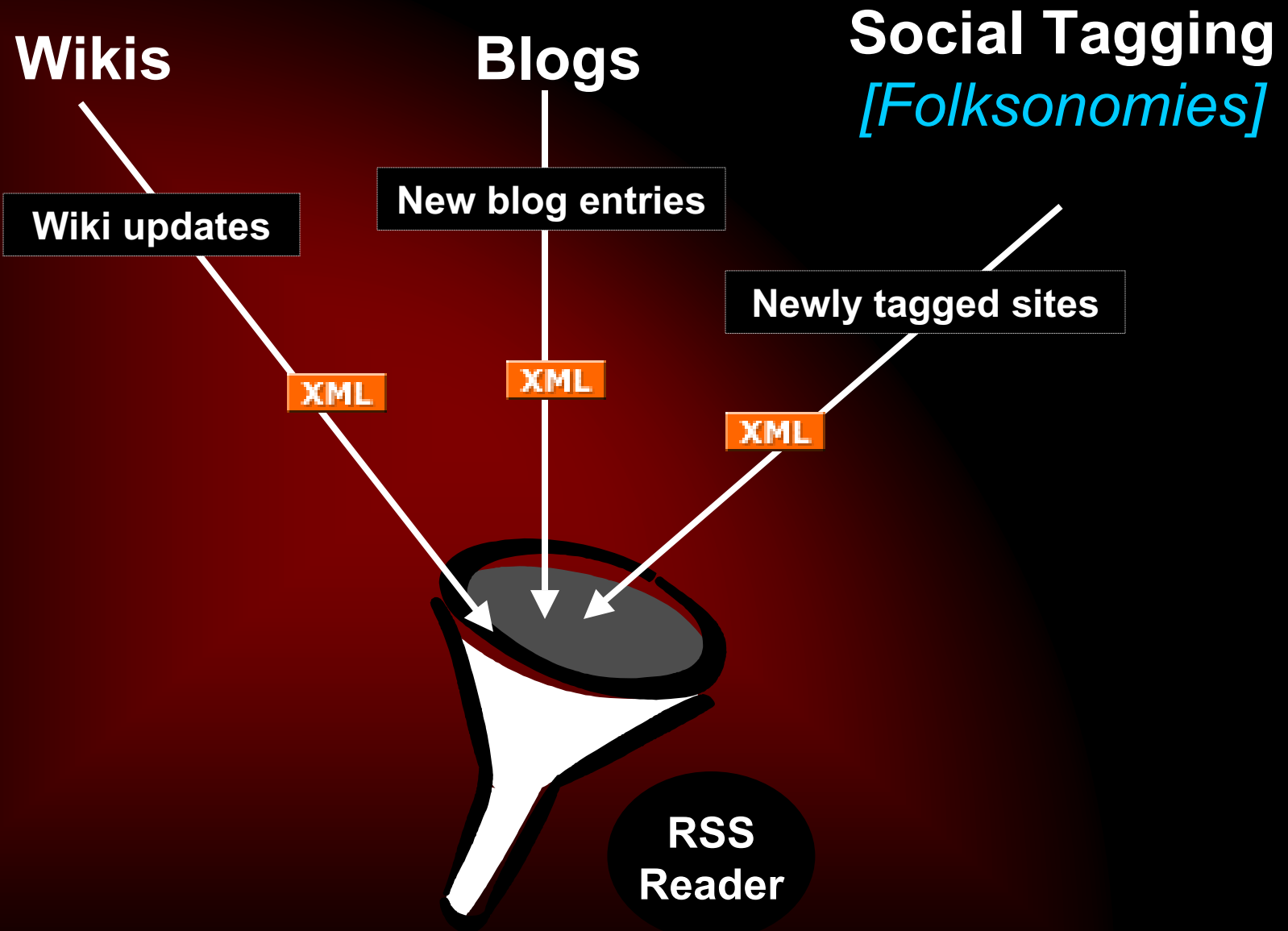
# Browser as an aggregation tool

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- RSS feeds providing raw information
- Mashups mix and match relevant content
- Widgets provide granular functionality
- Pipes and Gears build new applications
- And Ajax providing the engine



# RSS content aggregation



# Mashups create new services

**VIRAL VIDEO CHART**

Did a blog? Want to see what's trending on YouTube? Find out about the latest viral videos on YouTube.

**Top 20 Viral Videos**

Rank	Video Title
1	... (Thumbnail) ...
2	... (Thumbnail) ...
3	... (Thumbnail) ...
4	... (Thumbnail) ...
5	... (Thumbnail) ...
6	... (Thumbnail) ...

**flickrleech**

View: 2/24/2007

A grid of numerous small images from Flickr, representing a data mashup.

**FLIGHT SEARCHER \$19.95**

A flight search interface featuring a map and a prominent price tag of \$19.95.

**BECH**

A website featuring a stylized logo and a person in a hat, possibly a mashup of a social media profile or a specific service.

**StockCloud**

A website displaying a list of stock tickers and their corresponding cloud-like visualizations.

**Trivip** The #1 videoguide for hotels

A travel website showing a map and hotel listings, with a focus on video guides for hotels.

**THE HYPE MACHINE**

A website featuring music tracks, social media links, and a 'What's going on here?' section.

A network diagram showing nodes and connections, likely representing a data mashup or a social network visualization.

A scatter plot showing many data points, likely representing a data mashup or a visualization of a large dataset.



# Widgets enhance your interaction

Show only: English

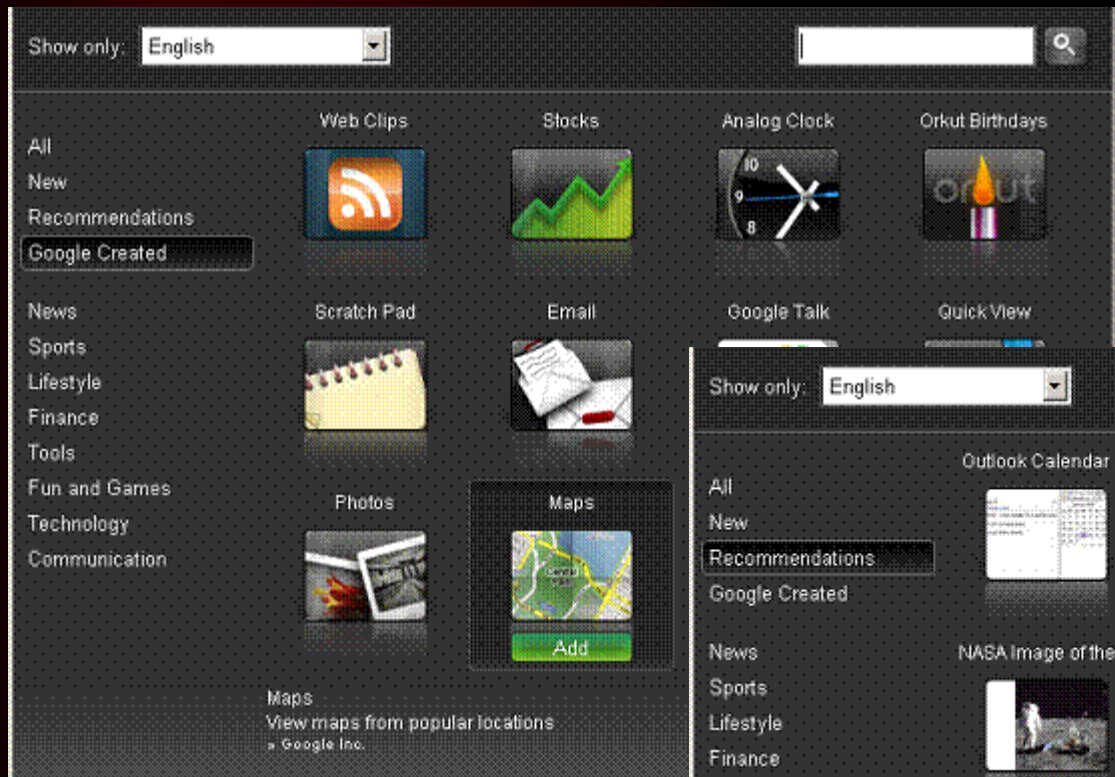
All  
New  
Recommendations  
Google Created  
News  
Sports  
Lifestyle  
Finance  
Tools  
Fun and Games  
Technology  
Communication

Web Clips  
Stocks  
Analog Clock  
Orkut Birthdays

Scratch Pad  
Email  
Google Talk  
Quick View

Photos  
Maps

Maps  
View maps from popular locations  
© Google Inc.



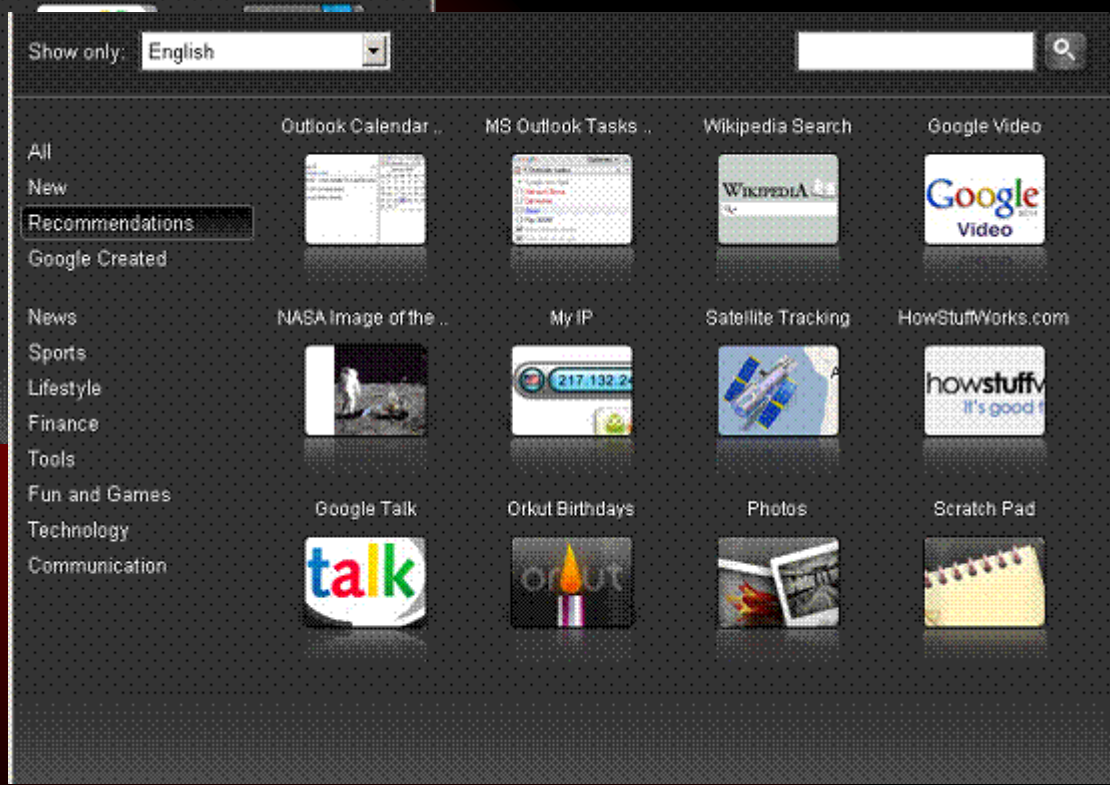
Show only: English

All  
New  
Recommendations  
Google Created  
News  
Sports  
Lifestyle  
Finance  
Tools  
Fun and Games  
Technology  
Communication

Outlook Calendar ...  
MS Outlook Tasks ...  
Wikipedia Search  
Google Video

NASA Image of the ...  
My IP  
Satellite Tracking  
HowStuffWorks.com

Google Talk  
Orkut Birthdays  
Photos  
Scratch Pad



# Pipes create new applications

The screenshot displays the Pipes application interface for a workflow titled "Aggregated News Alerts copy\*". The interface includes a sidebar with categories like Sources, User inputs, Operators, and Url. The main workspace contains several interconnected components:

- URL Builder (Top Left):** Base: `http://www.blogline.com/`. Path elements: `text`. Query parameters: `ql` (text), `q` (text [wired]), `format` (rss).
- URL Builder (Bottom Left):** Base: `http://news.google.com/`. Path elements: `text`. Query parameters: `q` (text), `output` (rss), `oe` (utf8), `ie` (text [wired]), `hl` (en).
- URL Builder (Middle):** Base: `rss.findory.com/rss/`. Path elements: `text`. Query parameters: `q` (text [wired]).
- URL Builder (Bottom Right):** Base: `api.technorati.com/`. Path elements: `text`. Query parameters: `query` (text [wired]), `language` (en), `key` (bf2249f5a94f3652f), `format` (rss).
- Input Dialog (Top Right):** "What news are you loo". Name: `textInput1`. Prompt: "What news are you loo". Position: `number`. Default: `text`. Debug: `yahoo`.

The workflow is visualized with lines connecting the output of the URL Builders to the input of the Fetch Feed component. The status bar at the bottom shows "Time taken: 4.08718s Refresh" and a list of news items, including "US in shock as motorway bridge collapses - Euronews.net". A "Debugger: Fetch Feed (86 items)" window is also visible.



# The user

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How has the user evolved



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# The user centric web

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- We make the web our own
  - Bookmarks and tags
- We demand relevant information
  - RSS feeds
- We produce and expect media diversity
  - Video, Sound, Picture and text
- We classify and catalogue
  - Tags, Folksonomy
- We produce and publish
  - Digg, Flickr and blog
- We build our own web
  - Mashups and pipes




# We produce, share and tag content

**flickr** LOVES YOU™

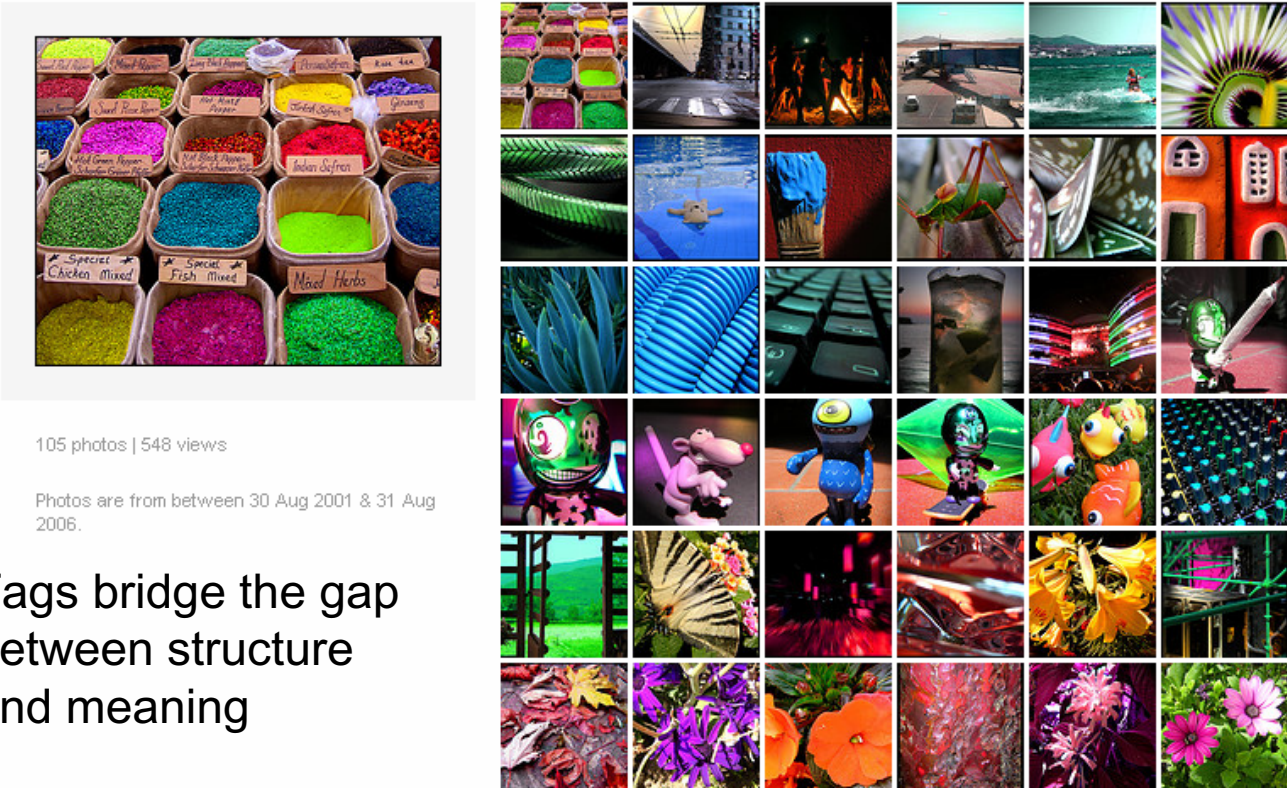
You aren't signed in [Sign In](#) [Help](#)

[Home](#) [The Tour](#) [Sign Up](#) [Explore](#) |  [Search](#) |

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 **colors** [View as slideshow](#) (⌵)

[Thumbnails](#) | [Detail](#) | [2 comments](#)



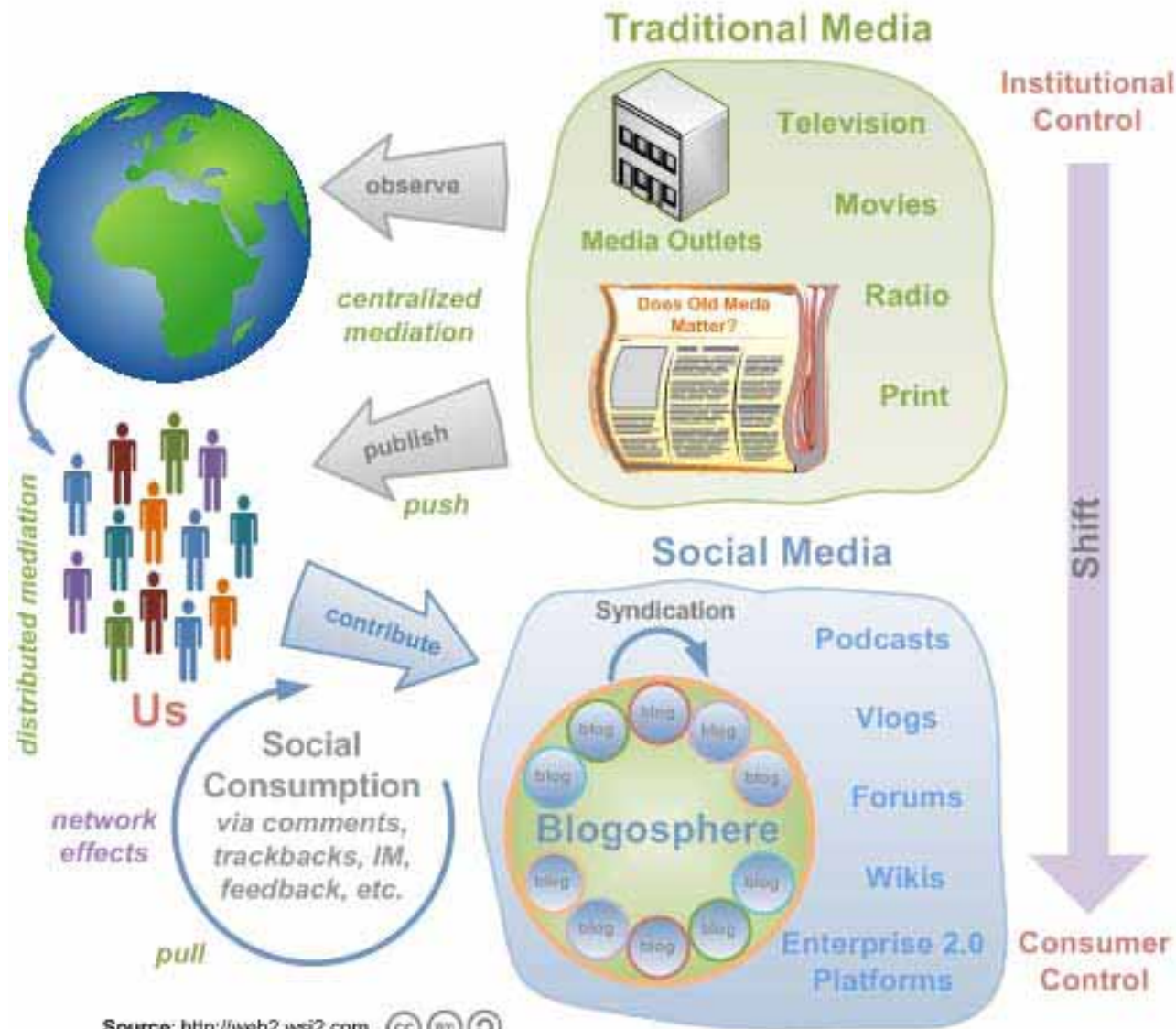
105 photos | 548 views

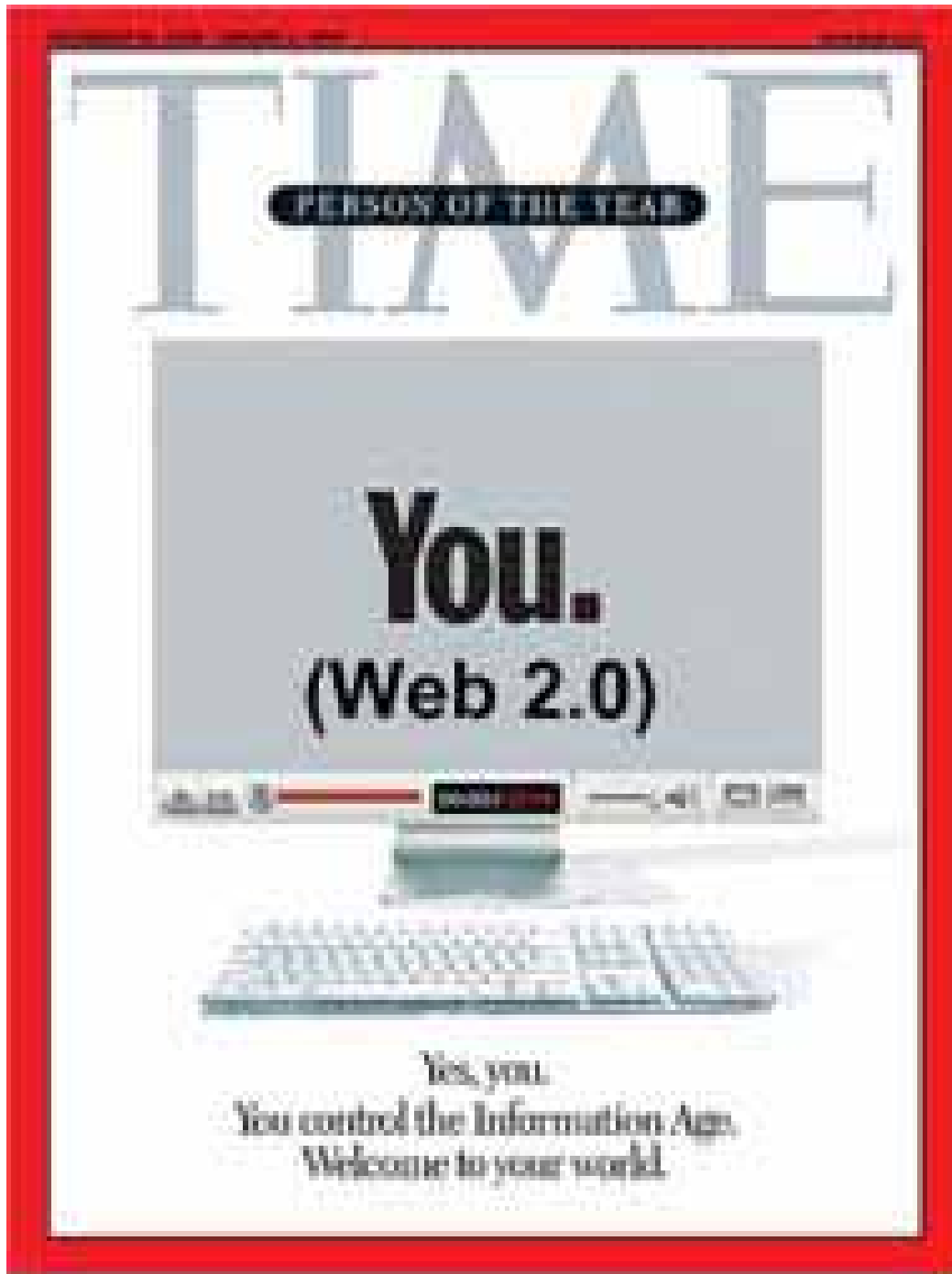
Photos are from between 30 Aug 2001 & 31 Aug 2006.

Tags bridge the gap between structure and meaning



# The the rise of social media





The productive capacity and the creativity of the world is increasingly wired into the Web.

# Tools and technology

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New tools and technologies enabling Web 2.0



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# Web parts, widgets and portlets

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- The aim – provide web components that can be integrated (mashed up) to create new content and services
- Benefit – rapid integration of existing services
- Elements
  - RSS feeds providing raw content
  - Web parts providing modular content
  - Widgets providing modular functionality



# The mashup revolution

Mashup platforms allow web parts, web services and feeds to be rapidly combined into useful new applications



# The browser engine

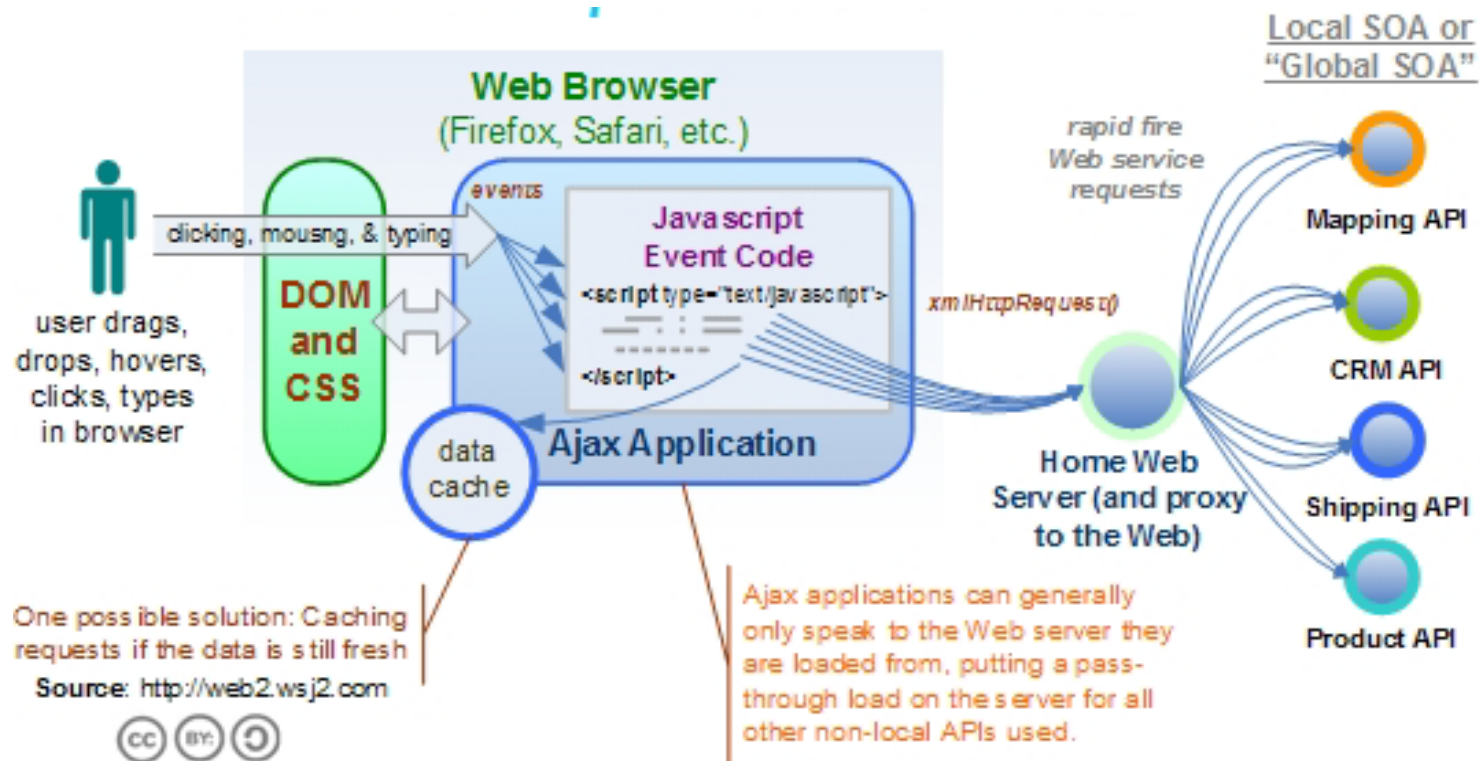
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- The aim – deliver Rich Internet Applications through the browser, empowering the user
- Benefit – enhanced useability and interactivity
- Elements
  - Web browser as a platform to run applications
  - Sufficient processing power on the desktop
  - Ajax toolkits allowing rapid development and reuse



# The mashup revolution

## Mashup development using Ajax toolkit



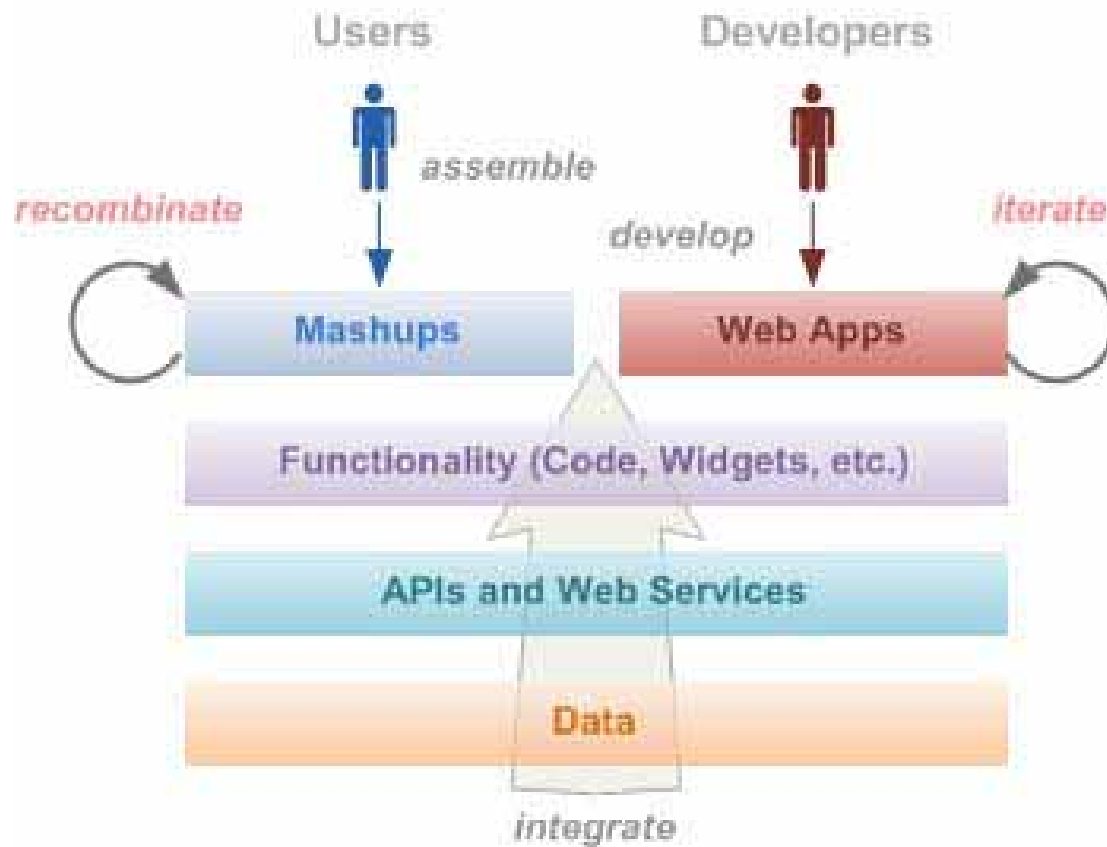
# Service Oriented Architecture

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- The aim – allow loosely coupled applications or software agents to interact.
- Benefit – different systems, new and old can interact
- Elements
  - XML enabling information exchange
    - RSS was the first incarnation
  - Web services allowing software interaction
    - Fully standardise
  - SOAP providing more sophistication
    - Supported in almost all development tools



# Service assembly using web parts



# Web 3.0 revisited

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Semantic Web Applications

Agent driven assembly and interactivity

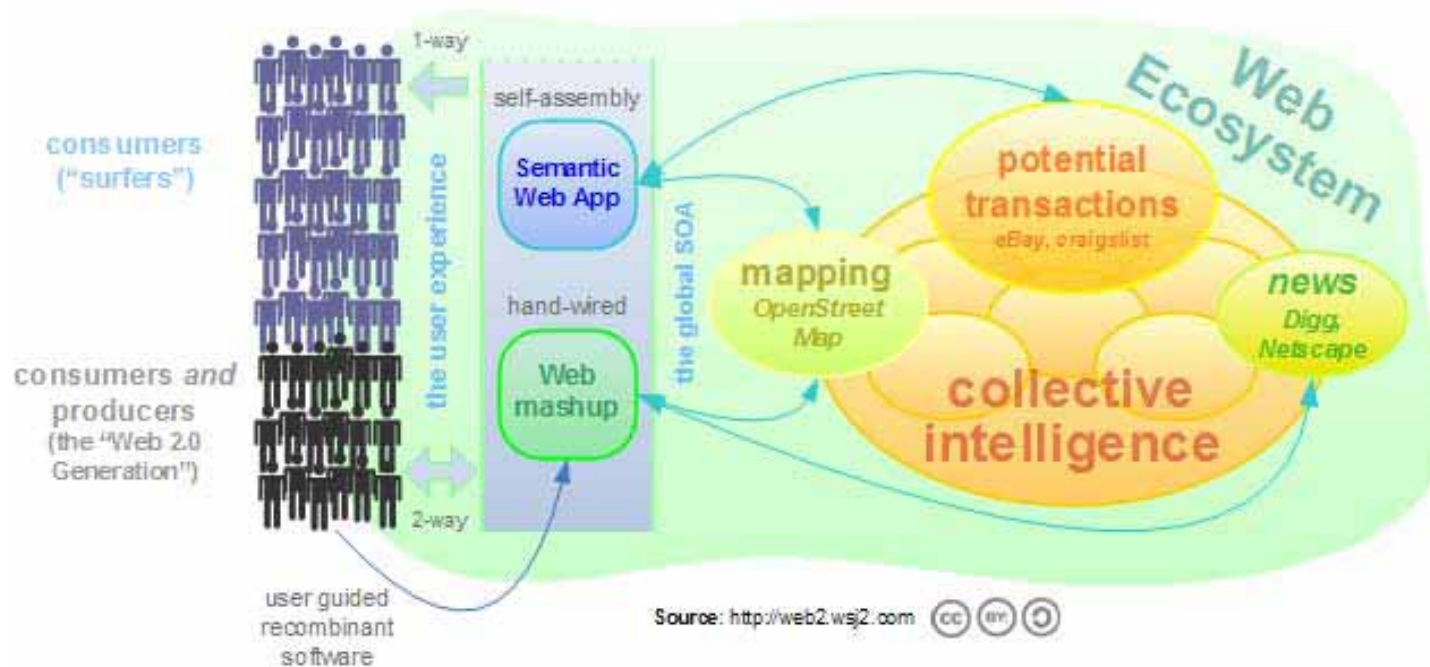


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# Semantic web applications

Automated mashing up of personalised content

Agent driven assembly and interactivity



# The opportunity

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What is the opportunity for users and businesses



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# Web 2.0 – User Benefits

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- Rich User Experiences
  - Go beyond traditional web-page metaphors to deliver rich user experiences combining the best of desktop and online software
- Social Networking
  - Enrich social networks through virtual interaction and shared online experiences
- Platform of Sharing and Creativity
  - Share experiences and express creativity
- Web of Automation
  - Automate tasks to create free time



# The opportunity

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What is the opportunity for the Enterprise



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# Web 2.0 – Enterprise Opportunities

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- **Harnessing Collective Intelligence**
  - Create an architecture of participation that uses network effects and algorithms to produce software applications that gets better the more people use it.
- **Data Is the Next "Intel Inside"**
  - Use unique, hard-to-recreate data sources to become the "Intel Inside" for this era in which data has become as important as function.
- **Innovation in Assembly**
  - Build platforms to foster innovation in assembly, where remixing of data and services creates new opportunities and markets.
- **Perpetual Beta**
  - Move away from old models of software development and adoption in favour of online, continuously updated, software as a service (SaaS) models.
- **Software Above the Level of a Single Device**
  - Create software that spans Internet-connected devices and builds on the growing pervasiveness of online experience.
- **Leveraging the Long Tail**
  - Capture niche markets profitably through the low-cost economics and broad reach enabled by the Internet.
- **Lightweight Models and Cost-Effective Scalability**
  - Use lightweight business- and software-development models to build products and businesses quickly and cost-effectively.



# Thank you all

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I hope this has been of value to you.



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