What is Web 2.0?

Tim O’Reilly

O’Reilly Media, Inc.

www.oreilly.com

W3C
May 8, 2007
Let’s Get One Thing Out of the Way

Web 1.0 = Web 2.0

It was Web 1.5 that got it wrong :-)

pets.com
The Open Source Paradigm Shift
The Open Source Paradigm Shift

• How many of you use Linux?
The Open Source Paradigm Shift

• How many of you use Linux?
• How many of you use Google?
The Open Source Paradigm Shift

• How many of you use Linux?
• How many of you use Google?
• What’s being missed here?
Desktop Application Stack

Proprietary Software (Control by API)
Network Effects Drive Lock-In

System Assembled from Standardized Commodity Components

Hardware Lock In By a Single-Source Supplier
Free and Open Source Software

Cheap Commodity PCs

Intel Inside
Proprietary Software As a Service
(Network Effects Drive Lock-In)

Integration of Commodity Components

Subsystem-Level Lock In
Understanding Open Source

• Focus on software licensing turned out to be a red herring

• What mattered more:
  – Modular architecture allows cooperating programs
  – Internet-enabled collaborative development
  – Users as co-contributors
  – Viral distribution and marketing

Web companies leverage those same principles in new ways. The open source “alpha geeks” showed the way.
What Do These Apps Have in Common?

- Google
- Yahoo!
- eBay
- Amazon.com
- MapQuest
- Craigslist
- Myspace.com
- YouTube
- Wikipedia
What Do These Apps Have in Common?

- The Internet, not the PC, is their platform
- Built on top of open source software, but not themselves open source
- Services, not packaged applications
- Data aggregators, not just software
- Network effects from user contributions are key to their market dominance

“The future is here. It’s just not evenly distributed yet.”
web2.0
Social Networks

Blogs

Wikis

Sharing

Openness

User Generated Content

Social Networks
Web 2.0

- Sharing
- Openness
- User Generated Content
- Social Networks
- Love
- Peace
- Blogs
- Wikis
"The Law of Conservation of Attractive Profits"

"When attractive profits disappear at one stage in the value chain because a product becomes modular and commoditized, the opportunity to earn attractive profits with proprietary products will usually emerge at an adjacent stage."

-- Clayton Christensen
Author of *The Innovator's Solution*
What Really Distinguishes Web 2.0

Systems that harness network effects to get better the more people use them.
## Top Sites on the Internet - 2005

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<th>Rank</th>
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<th># Employees</th>
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<td>Yahoo</td>
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Some Lessons from Google

• Harnesses users without them even knowing it
• Minimalist design
• Search relentlessly focused on relevance
• Advertising serves the user - unobtrusive
• Top ad position doesn’t go to highest bidder but to bid times expected click-through-rate

• This requires real-time monitoring and feedback loops
Web 2.0 = “Bionic Software”
Tags

Hot tags

In the last 24 hours
pillowfightclub, sexta, happyfurryfriday, californiapoppy, sextaposer, barrybonds
furryfriday, photoaday, s5200, april62006, mobilife, creative1, creative2, contextwatcher, featheryfriday, colorweek, parallels,
cellnetwork, inca, cellsignal63

Over the last week
april2006, colorweek, april12006, portraitthrowdown2, brisbanezombiewalk, apr2006
kinnernet2006, fidae, blogak, april2, soulclipse, cazasco, sharplydone, april06, boatrace, aprilfoolsday, april1, fools, aprilfool,
msb0406

All time most popular tags

05 africa amsterdam animal animals architecture art australia autumn baby barcelona beach berlin birthday black blackandwhite blue boston building bw california cameraphone camping canada canon car cat cats chicago china christmas church city clouds color concert day dc december dog dogs england europe fall family festival florida flower flowers food france friends fun garden geotagged germany girl graffiti green halloween hawaii hiking holiday home honeymoon hongkong house india ireland italy japan july kids lake landscape light london losangeles macro march me mexico moblog mountain mountains museum music nature new newyork newyorkcity newzealand night
PhotoShop Massive List Of Plugins, Filters, Brushes, Actions & Gradients  save this
first posted by walden on 2006-03-12 ... saved by 299 other people (272 recently)

CSS Showcase | CSS Navigation Menus, Tabs and CSS Navigation Techniques Showcase  save this
first posted by poomoo on 2006-04-07 ... saved by 441 other people (133 recently)

Inside AdSense: Meet Ivan the optimiser -- but please, no paparazzi  save this
first posted by BocaJuniors on 2006-04-08 ... saved by 112 other people (104 recently)

Playboy Centerfolds 1953 - 2003  save this
first posted by bruculu on 2006-03-02 ... saved by 190 other people (70 recently)

Ten video sharing services compared - DV Guru  save this
first posted by frenziminds on 2006-04-08 ... saved by 155 other people (64 recently)

How to pull an all-nighter  save this
first posted by cmontoya on 2006-04-05 ... saved by 100 other people (53 recently)

Windows to Ubuntu Transition Guide  save this
first posted by beachbum01 on 2006-04-07 ... saved by 260 other people (45 recently)

Vyew.com - Free Web-Based Collaboration  save this
first posted by hu_man01 on 2006-04-08 ... saved by 77 other people (41 recently)

Rube Goldberg devices  save this
first posted by shiniynew on 2006-04-07 ... saved by 115 other people (40 recently)

Mindfulness: The practice of being “here” | 43 Folders  save this
first posted by bradbeck on 2006-04-07 ... saved by 172 other people (32 recently)

Dr. Web Weblog - Collection of Web 2.0 Navigation Menus  save this
first posted by drweblan on 2006-04-07 ... saved by 100 other people (32 recently)

Tutorials  save this
first posted by toddco on 2006-04-08 ... saved by 50 other people (27 recently)
1 Million Users

6787 diggs

1 submission, made popular 6 days ago (blog.digg.com)

It's now been more than two years since the first story was submitted and dugg on Digg. Since then you guys have helped Digg move from a personal project amongst a group of friends to a huge online community. Now, your contributions in submitting, digging, and commenting on content have propelled Digg to a point I never dreamed of - as of today D More...

What's Digg?

Digg is all about user powered content. Everything is submitted and voted on by the Digg community. Share, discover, bookmark, and promote stuff that's important to you!

Top 10 in All Topics

3632 (Pic) A cartoon illustration of digg & other social media sites

3131 Ever Wondered Who The RIAA Really Are?

2459 The "300" Workout

2060 Over a million free photos

1927 Awesome Ipod mod

1812 First Congress Member To Come Out As Atheist

1701 Viacom is SUING YouTube for $1

1612 "Why It's Okay To Be An Atheist"

1528 "The Big Bang Theory" Partially Shoots First Few Episodes

1518 LA Mayor: "Los Angeles Won't Pay for a Parking Meter"
Listen Now

Every Last.fm radio stream is unique, personalised just for you. Here are a few ways to get started...

**Similar Artist Radio**

Enter the name of a band or artist you like to create your own radio station of similar music:

```
feathers
```

![Play Your Station!](image-url)
Ever since we started the Music Genome Project, our friends would ask:

**Can you help me discover more music that I'll like?**

Those questions often evolved into great conversations. Each friend told us their favorite artists and songs, explored the music we suggested, gave us feedback, and we in turn made new suggestions. Everybody started joking that we were now their personal DJs.

We created Pandora so that we can have that same kind of conversation with you.

Pandora Tip: Want to rename a station or edit your feedback? Just click the triangle next to a station name.
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We created **Pandora**,

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**Pandora Tip:** Want to rename a station or edit your feedback? Just click the triangle next to a station name.
Intelligence Augmentation, not Artificial Intelligence

We set out to have them make us smarter. Instead, we make *them* smarter.
Data is the Next “Intel Inside”

Applications are increasingly data-driven.

*Therefore*: Owning a unique, hard-to-recreate source of data may lead to an Intel-style single-source competitive advantage.
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GRACENOTE PRODUCTS

Consumers will expect more from the next generation of digital music products. Give it to them.

POWERS by GRACENOTE

See how today’s most advanced products enhance the listening experience with Gracenote.

NEWS, PRESS & EVENTS

16 March 06
MarketWatch - Gracenote video clip: Digital Music Everywhere

20 March 06
Sacramento Bee - Keeping tracks

15 March 06
Gracenote Selected by OnHollywood as Top 100 Private Company Award Winner. Recognized for Leadership in Emerging Technology

January 06
PC World - Software Aims to Help You Pick New Tunes

5 January 06
Gracenote and Muze Partner to Create Integrated Global Entertainment Data and Content Offering

5 January 06
Gracenote Introduces Discover™ Industry’s First Global Multi-Method Music Recommendation Engine
Owning Data Provides Huge Leverage

- But data owners be aware:
  - Web 2.0 sites are putting friendly front-ends on existing databases, and opening them to user contribution.
  - User-enhanced data can create new “Intel Inside” positions
MoveMyData.org
Because if you can’t move it, it’s not really yours

You own your content

The basic features and concept
Your content and data should be yours to manage and do with as you please. Your images, writing, tags, profile, blog entries, comments, testimonials, video, and music should be yours to download and move anywhere you want.

We will help ensure that no website ever holds your data hostage.

community content sites

- flickr
- youtube
- myspace
- blogger

Download your content
Upload your content
Welcome to chicagocrime.org

Currently listing crimes from November 2, 2005 to September 11, 2006.

Browse crimes by...

» Crime type
Examples: Arson - Homicide - Assault - Gambling

» Street
Browse streets to block level, and map nearby crimes.

» Date
Drill down to detailed hour-by-hour lists of all crime reports.

» Police district / beat
Not sure which district you're looking for? Find it on our map.

» ZIP code
Examples: 60615 - 60634 - 60659

» Ward
Examples: Ward 3 - Ward 23 - Ward 44

» Location
Examples: ATM - CTA train - Gas station - Bowling alley

» City map
Filter crimes by multiple criteria, and view them on one map.

» Route
Draw a line on the map of Chicago, and we'll display crimes along that route.

» Blotter
NEW FEATURE

Search by exact address...

Example: "1060 w. addison"

Site news

New block-level archive pages
May 9, 2006

Now that we're storing crime data (i.e., not deleting it any more after 90 days), we'll be making some changes to the site to make it easier to view older crime reports. Today we unveiled the first phase of this plan: Each block page, which displays only the latest 20 crimes, now has a link to a page with all crimes reported on that block since this site began collecting data Nov. 2, 2005. For example: 100 S. State St. has a link to all crimes on 100 S. State St.

New feature: Police blotter
March 21, 2006

Until now, this site has featured raw crime-report data, with no "stories behind the crimes." Thanks to help from the Chicago Journal newspaper, now we're displaying synopses of selected crimes. The new blotter page lists all crimes that have synopses, and each crime that has a synopsis will display it on its crime page (example). Synopses
Web 2.0 and the Semantic Web

• PageRank - semantic overloading, not semantic specification
• What would Google do with social network data from phone calls if it were Verizon?
• How does this compare with what social networking sites do? With FOAF?
For More Information

• What is Web 2.0?
http://www.oreillynet.com/go/web2
• http://tim.oreilly.com
• http://radar.oreilly.com