Dive Into® Web 2.0
(In Chapter 3)
Part One

1

Some Interesting Quotes

- "Network effects from user contributions are the key to market dominance in the Web 2.0 era."
  - ► Tim O'Reilly
- "Link by link, click by click, search is building possibly the most lasting, ponderous, and significant cultural artifact in the history of humankind: the Database of Intentions."
  - ► John Battelle, The Search

2

More Interesting Quotes

- "Web 2.0 is a massive social experiment...this is an opportunity to build a new kind of international understanding…citizen to citizen, person to person".
  - ► Lev Grossman, TIME
- "One of the powerful things about networking technology like the Internet or the Web or the Semantic Web...is that the things we've just done with them far surpass the imagination of the people who invented them."
  - ► Tim Berners-Lee, interviewed by Peter Moon, IDG Now

3

OBJECTIVES

In this chapter you will learn:
- The defining characteristics of Web 2.0.
- Why search is fundamental to Web 2.0.
- How Web 2.0 empowers the individual.
- The importance of collective intelligence and network effects.
- The significance and growth of blogging.
- Social networking, social media and social bookmarking.
- How tagging leads to folksonomies.
- How web services enable new applications to be quickly and easily "mashed up" from existing applications.
- Web 2.0 technologies.
- Web 2.0 Internet business and monetization models.
- The emerging Semantic Web (the "web of meaning").

4

Chapter 3 Sections

- 3.1 Introduction
- 3.2 What Is Web 2.0?
- 3.3 Search
- 3.4 Content Networks
- 3.5 User-Generated Content

5

3.1 Introduction

- 1993 - Mosaic browser introduced
  - ▶ Web exploded in popularity.
- 1990s – tremendous growth - "dot-com bubble"
- 2001 - bubble burst
- 2003 - people and businesses were using the web and developing web-based applications in a different way
  - ▶ Collaborative, community-based sites
  - ▶ Social networking, blogs, wikis, etc.

6

Growth of Web 2.0 - Key Factors

- Hardware - cheaper and faster
  - ► memory capacities and speeds increasing at a rapid rate
- Broadband Internet explosion
- Abundant open source software
  - ► Cheaper (often free) customizable software options
    - Easier to start new Web 2.0 companies
    - Decreases the cost of failure
- Easy-to-employ models available to monetize Web 2.0 business
  - ► i.e., this is cool but can we make any money from this?

7

3.2 What Is Web 2.0?

- Web 1.0 → "brochure web"
  - ► Web 1.0 is as a lecture
- Web 2.0 →
  - ► Web 2.0 is a conversation

8

Architecture of Participation

- Many Web 2.0 companies built on user-generated content
  - ► users create the content,
  - ► sites provide the platforms
- Harness collective intelligence
- Examples
  - ► MySpace
  - ► Facebook
  - ► Flickr
  - ► YouTube
  - ► Wikipedia

9

User-Centric

- User
  - contributes content
  - directs how media is delivered
  - decides which news and information outlets to trust
  - Success = lots of users
- Social bookmarking
  - del.icio.us
  - ma.gnolia
- Social media
  - Digg
  - Reddit
- Social networking
  - MySpace
  - Facebook
  - Bebo
  - LinkedIn
  - Second Life
  - Web 2.0 businesses leverage the Long Tail
    - Long Tail = economic model in which the market for non-hits could be significant and sometimes even greater than the market for big hits

10

Leverage the Long Tail

- Long Tail
  - Economic model
  - Cater to the market for non-hits
    - Low volume items or low interest items
    - Everyone needs just one
    - Worldwide – low interest accumulates to sufficient interest to justify and make a profit
  - Market for big hits is covered sufficiently with Web 1.0
    - High volume items or high interest items
    - All needs are met by one source
    - Fierce competition
- Market for non-hits could be significant and sometimes even greater than the market for big hits

11

Web 2.0 Technologies

- Ajax
- XHTML
- Cascading Style Sheets
- JavaScript, the Document Object Model
- XML
- XMLHttpRequest object
- Popular Ajax toolkits
  - Dojo
  - Script.aculo.us

12

Web 2.0 Technologies

- Rich Internet Applications (RIAs)
  - web applications that offer the responsiveness and GUI features of desktop applications
- Key tools for building RIAs
  - Adobe's Flex
  - Microsoft's Silverlight
  - ASP.NET Ajax
  - Sun's JavaServer Faces
- Other Web development tools and technologies
  - Adobe's Dreamweaver
  - JSON
  - web servers IIS and Apache
  - MySQL
  - PHP
  - ASP.NET
- Web services
  - allow you to incorporate functionality from existing applications into your own applications quickly and easily
  - Amazon Web Services
  - Google Maps web services
  - eBay web services

13

3.3 Search

- "Content is King"
- Search engines
  - primary tools people use to find information on the web
- Traffic to the major search engines growing rapidly
  - Americans conducted 8 billion search queries in June 2007, up 26% from the previous year
- Attention economy
  - constant flow of information in today's world causes attention to continually be diverted
  - Search engines help users quickly find and filter information

14

Google Search

- Google
  - Leading search company
  - Online advertising company
  - founded by Larry Page and Sergey Brin
- Google's success in search
  - PageRank algorithm
    - Number of links into the page, "quality" of linking sites, other factors = page rank value
  - Infrastructure of servers
- Google offers specialty search engines
  - images, news, videos, blogs, etc.
- Google web services
  - Build Google Maps and other Google services into your applications
  - AdWords, Google's pay-per-click (PPC) contextual advertising program
  - AdSense is Google's advertising program for publishers

15

Other Search Players

- Yahoo!
  - Yahoo! started in 1994 by Jerry Yang and David Filo as a web directory rather than a search engine
  - Yahoo! also expanded into other areas, becoming a popular provider of e-mail, user groups and more
  - Yahoo! acquired Overture (now Yahoo! Search Marketing
- MSN
  - MSN search was created in 1998, a year after Google was launched
  - MSN's Live Search includes a new search engine, index and
  - Advertising market through Microsoft adCenter
- Ask
  - Ask (formally known as AskJeeves.com)

16

Search Types

- Vertical Search
  - Vertical search engines are specialists
    - focus on specific topics
    - (Google and Yahoo are generalists, e.g.)
  - Goal: providing user with fewer, more relevant results
- Popular vertical search examples
  - Travel search (e.g., Kayak, Expedia)
  - Real-estate search (e.g., Zillow, Trulia)
  - Job search search (e.g., Indeed, Monster)
  - Shopping search (e.g., Shopzilla, MySimon)
- Location-Based Search
  - uses geographic information about the searcher to provide more relevant search results
  - Have you experienced this?

17

Search Evolution

- Customized Search Engines
  - Rollyo
  - build-your-own customized search engine website
  - allows you to explore, create and personalize search engines ("searchrolls") created by others
- Search Engine Optimization (SEO)
  - Process of designing and tuning your website to maximize your findability and improve your rankings in organic (non-paid) search engine results
    - Maximize traffic
    - SEO
- Link Building
  - Process of increasing search engine rankings and traffic by generating inbound links to a particular website
    - Search engine result pages (SERPs)
  - Reciprocal linking
  - Link baiting
  - Natural linking

18

More Search Evolution

- Search Engine Marketing (SEM)
  - ► Method of promoting your website to increase traffic and search results by raising the site's visibility on search engine results pages
- Search Engine Watch and Search Engine Land
  - ► Search Engine Watch is a search engine marketing resource site
- Search Engine Strategies Conferences
  - ► Search Engine Strategies is a global conference series focused on search engine advertising (including current SEO and SEM issues).
- Discovery
  - ► Refers to finding new content you would not have otherwise sought out

19

3.4 Content Networks

- Content networks
  - ► websites or collections of websites that provide information in various forms
  - ► articles, wikis, blogs, etc
  - ► filter the vast amounts of information on the Internet

20

Fig. 3.2 Content Networks

Content networks

About.com—Acquired by the *New York Times*, About is a collection of information on a wide variety of topics. About was founded in 1996 and provides over 500 guides written by topic experts. The guides include new content as well as links to other websites.
b5media—A blog network with over 200 blogs related to travel, entertainment, technology and more.
Corante—A blog network authored by leading commentators in technology, business, law, science, and culture.
Deitel—Deitel Resource Centers (currently about 80 sites and growing rapidly) include links to, and descriptions of, key tutorials, demos, free software tools, articles, e-books, whitepapers, videos, podcasts, blogs, RSS feeds and more. Resource Centers are grouped into major topic areas, including Web 2.0, Internet business, programming languages, software development and open source. See Fig. 2 in the Preface for a complete list of Resource Centers.
eHow—eHow claims over 35,000 articles explaining "how to do just about everything." The articles are written by members, and the site also features a section of "how to" videos.

21

Fig. 3.2 | Content Networks

Content networks

Gawker Media—A blog network that includes 14 blogs, such as Gizmodo, Gawker, Valleywag and Lifehacker. The blogs cover a range of topics including technology, gossip and more.

HowStuffWorks—HowStuffWorks offers articles explaining "how the world actually works." Articles are written by freelance writers, and experts from *Consumer Guide* and *Mobil Travel Guide.*

LifeTips—LifeTips provides short articles on both work and general life issues from hundreds of writers. Tips are voted on by readers (who can also mark their favorites for easy access).

9rules—A blog network with a wide range of blog topics. The site also includes social networking aspects.

Suite101—Suite101 offers thousands of articles on a variety of topics written by freelance writers. In addition to the articles, the site also provides discussion areas and free courses.

Weblogs, Inc.—A blog network of 90 blogs, including Engadget, Autoblog and Joystiq. Users can apply to write for one of the blogs (and get paid) or suggest topics for potential new blogs.
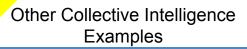
22

3.5 User-Generated Content

- user-generated content =
- key to success for many leading Web 2.0 companies
  - ► articles
  - ► home videos
  - ► photos
  - ► implicitly generated

23

Collective Intelligence

- Collaboration can result in smart ideas
- Wisdom of Crowds
  - ► Large diverse groups of people can be smarter than a small group of specialists

24

Other Collective Intelligence Examples

- *Craigslist*
  - ▶ Popular classified ads website that has radically changed the classified advertising market
  - ▶ Ad postings on Craigslist are free
  - ▶ Newspapers have experienced a decline in classified ad sales
  - ▶ Users can post comments about their experiences with a vendor

25

Wikis

- Users edit existing content and add new information
  - ▶ Wikipedia
  - ▶ Wikia
  - ▶ Media-Wiki open source software
  - ▶ SocialText
- Using wikis for project collaboration
  - ▶ reduces e-mails and phone calls among employees
  - ▶ allows tracking of changes to project content
- Collaborative Filtering
  - ▶ Users referee the content
    - Users promote valuable material
    - Users flag offensive, incorrect, or inappropriate material
  - ▶ Problems
    - Users might submit false or faulty information
    - Wikipedia → people deliberately add false information to entries
    - Web 2.0 companies rely on the community to help police their sites

26

Internet & World Wide Web: How to Program
by Deitel and Deitel

Dive Into® Web 2.0
(In Chapter 3)
Part One

27