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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*

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*

Dive Into[®] Web 2.0

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”).

Self-Review Exercises

3.1 Fill in the blanks in each of the following statements:

- a) _____ content refers to (legally) taking someone else's existing content and adding to it or changing it in some way.

ANS: Remixing.

- b) The term Web 2.0 was coined by _____ of O'Reilly® Media in 2003.

ANS: Dale Dougherty

- c) _____ are user-generated labels used to categorize content.

ANS: Tags.

- d) The major technologies in Ajax are _____, _____, _____, _____, _____ and _____.

ANS: XHTML, CSS, JavaScript, the DOM, XML, the XMLHttpRequest object.

- e) _____ are webtop applications that have responsiveness and functionality approaching that of desktop applications.

ANS: Rich Internet Applications (RIAs).

- f) Amazon's hardware and communications infrastructure web services are examples of _____. They enable businesses to pay for only the processing or storage space needed during any given period.

ANS: web-scale computing.

- g) The increased value of a network as its number of users grows is referred to as _____.

ANS: network effects.

- h) Two popular RIA frameworks are Adobe's _____ and Microsoft's _____.

ANS: Flex, Silverlight.

3.2 State whether each of the following is *true* or *false*. If *false*, explain why.

- a) Tagging is for personal organization of content only.

ANS: False. For example, tags are used on social bookmarking sites and are searchable by other users.

- b) The user is at the center of Web 2.0.

ANS: True.

- c) Location-based services always use GPS.

ANS: False. Location-based services often use GPS; however, there are other ways for a service to take your location into account (e.g., by IP address).

- d) Open source software is often called "free" because it does not cost money.

ANS: False. Open source software is free in terms of allowing access to the source code. It is not necessarily free of cost.

- e) Google's PageRank is determined by the number of page views a website receives.

ANS: False. The PageRank algorithm considers the number of links into a web page and the quality of the linking sites (among other factors) to determine the importance of the page. Google search also considers all of the content on the page, its fonts, its headers and the content of neighboring pages.

Exercises

3.3 Fill in the blanks in each of the following statements:

- a) _____ is an example of an agile development process.

ANS:

- b) The _____ is a design that encourages user interaction and community contributions.

ANS: architecture of participation.

c) Ruby on Rails was developed by _____.

ANS:

d) _____ systems add software to digital media to prevent piracy.

ANS:

e) _____ are attempts at consistent naming conventions.

ANS:

f) Wikis rely on the _____.

ANS:

3.4 State whether each of the following is *true* or *false*. If *false*, explain why.

a) Advertising is the most common Web 2.0 monetization model.

ANS:

b) Collaborative filtering is used by search engines.

ANS:

c) XML is an executable language.

ANS:

d) Most bloggers provide RSS feeds.

ANS:

e) Holding people's attention is difficult in today's society.

ANS:

3.5 Define each of the following terms:

a) collective intelligence.

ANS: The idea that collaboration and competition among large groups results in grand and intelligent ideas.

b) folksonomy.

ANS: A classification based on tagging content. Users tag the web content (web pages, photos, etc.), making it easier to find the content online. Folksonomies are formed on sites such as Flickr, Technorati and del.icio.us. Users can search tags for content that is identified in different (and sometimes more meaningful) ways than by traditional search engines.

c) permalink.

ANS: A URL that links to a specific blog entry instead of the blog's homepage. Links stay relevant even after the blog entry moves off the home page and into the archive.

d) tag cloud.

ANS: A weighted list of content tags on a website. A tag cloud is usually in alphabetical order, with the most popular tags often appearing in a larger or bold font. Each tag links to a page where you'll find all of the content on that site that has been "tagged" (by publishers and/or users) with that term. Tag clouds are used by many Web 2.0 companies, including Technorati, Flickr, del.icio.us and more.

e) web service.

ANS: A service provided online that can be called by another program across the Internet.

f) monetization.

ANS: Generating money through your website (e.g., using contextual advertising, affiliate programs, e-commerce and other revenue-generating models).

3.6 List some of the key factors that have attributed to the growth of Web 2.0.

ANS: First, hardware keeps getting cheaper and faster, with memory capacities and speeds increasing at a rapid rate. Second, broadband Internet use has exploded. Third, the availability of abundant open source software has resulted in cheaper (and often free), customizable software options. Fourth, there are many easy-to-employ models available to monetize Web 2.0 businesses.

3.7 Discuss some of the methods you can use to increase the findability of your website.

ANS: Search Engine Optimization (SEO) is the process of designing your website to maximize your findability and improve your rankings in organic (non-paid) search engine results. Techniques for SEO include: offering unique and quality content, using structural (semantic) markup and separating your content from presentation, providing proper titles and metadata, researching and implementing effective key words and phrases (that would attract users to your site), and having quality inbound links (from relevant pages that are regarded highly by search engines). Link building is the process of increasing search engine rankings and traffic by generating inbound links to a particular website. The three most practiced methods of building links include reciprocal linking, link baiting and natural linking. Search Engine Marketing (SEM) is the method of promoting your website to increase traffic and search results by raising its visibility on search engine results pages. SEM techniques include managing paid listings, developing online marketing strategies and submitting sites to directories.

3.8 In Section 3.3 we discussed how many Web 2.0 sites are enabling discovery—helping you find new content you would not have otherwise sought out. Pick three Web 2.0 sites and describe how they are enabling you to discover new content through their sites.

ANS:

3.9 Consider a picture of the Eiffel Tower taken at night. List 10 words you might use to tag this picture on a photosharing site such as Flickr so that others searching the site will find it.

—Paris, France, Gustave Eiffel, travel, vacation, Europe, architecture, night, Eiffel Tower, landmark, lights, romantic, beautiful, long exposure, digital.