

# Web 2.0 Basics

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“Web 2.0” is a buzzword. Like all buzzwords, it gained popularity because it’s useful for capturing the meaning of something. But it also has been overused and become something of a cliché. The technology cognoscenti have now moved on and are talking about Web 3.0 (the semantic Web) and even Web 4.0. But for most of us, “Web 2.0” accurately describes the Web we know and use.

The origins of the term are a bit disputed, but its most prominent early use was by O’Reilly Media, which sponsored the “Web 2.0” conference in 2004 (Wikipedia, “Web 2.0,” accessed 2009). The term “2.0” refers to the system used by software developers to signify new versions of software—that is, by assigning a new number (rather than using, say, 1.8 or 1.9), the developers signal that this software release has significant changes and differences. “Web 2.0,” then, was used to signify that the Web had begun a fundamental change in the way people were able to use it.

## **WHAT IS “WEB 2.0” ALL ABOUT?**

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There is no agreed-upon definition of “Web 2.0.” While O’Reilly Media may have popularized it, the term was not created by one company or type of software. Rather, it describes a confluence of changes in Web design and functionality that resulted in fundamental differences in the ways developers and users approach the Web. The most significant of these changes are the following:

- “Network as platform” or “cloud computing”—applications and data “live” on the Web, not on your local computer. This has two significant results for users: it decreases the need for computers with a lot of memory because less information and software are stored on your local sys-

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tem, and you can access both applications and data from anywhere you have an Internet connection.

- Open standards, open source, openness in general—Web applications using shared standards and releasing their code to developers results in greater interoperability between applications, as well as an explosion of opportunities for developers to create “add on” applications tailored to work on popular Web sites.
- Creation of syndicated content—use of RSS (described in the next section) allows sites to “push” customized content out to users rather than users having to visit individual sites to “pull” content out of them. This allows you to identify what information you want automatically delivered to you rather than having to regularly check for it on different Web sites.
- Customized Web experience for users—Web sites draw on user profile information to create customized Web views. Customization allows sites to present information that will be most relevant or that you have selected (for example, local weather reports or news headlines or recommendations for products or services).
- Broad use of interactivity—Web sites allow (and encourage) users to interact with posted content, using features such as commenting, tagging, ranking, making lists, and allowing many options for redistribution and sharing. The shift from the Web as primarily a vehicle for passively sharing published content to a vehicle for people to interact with and re-use that content is one of the most visible characteristics of Web 2.0.
- Prevalence of user-created content—the rise of sites like Wikipedia, Flickr, and YouTube, and tools like podcasting and blogging, which allow users to publish and share content, made individual people just as much a force in publishing on the Web as traditional information providers.
- Integration of user-to-user connection—broad-based use of the Web as a way to connect people to each other, not just to information sources. Sites like MySpace, Facebook, Twitter, and Second Life exist purely as a forum for users to connect with other users. In addition to the popularity of social networking sites, users have also come to expect social networking and sharing functions to be available on any site providing other Web 2.0 services (like Flickr and YouTube) and any major media or corporate site (like *The New York Times* or *The Washington Post*).

A good example of how these different elements come together is the hugely popular online retail site amazon.com. Once you create an account, it remembers you and presents you with a customized homepage when you enter the site. Based on the products you look at and buy on the site, amazon.com makes recommendations for other products it thinks you may also enjoy. You can customize your own experience by creating shopping or wish lists. You can sign up to have amazon.com contact you when products you are interested in become available. You can also interact with the information Amazon provides by rating products or writing a review. In addition to contributing reviews, you can also publish your own lists and recommendations to share with other users. If you have your own blog or Web site, you can even choose to add a widget to your site that promotes amazon.com products (and generates revenue for you).

In 2006, *Time* magazine selected “You” as its “Person of the Year,” recognizing the enormous changes Web 2.0 technologies and practices had made in the Web. In his cover story article, Lev Grossman summed up the changes:

It’s a story about community and collaboration on a scale never seen before. It’s about the cosmic compendium of knowledge Wikipedia and the million-channel people’s network YouTube and the online metropolis MySpace. It’s about the many wresting power from the few and helping one another for nothing and how that will not only change the world, but also change the way the world changes. (Grossman, 2006)

## **WEB 2.0 BUILDING BLOCKS**

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A technical discussion of the underpinnings of Web 2.0 would include references to protocols, software, APIs (application programming interfaces), and programming languages. This section will not delve into these technical matters but rather describe some common Web 2.0 tools that are user-facing.

### **RSS (or “Really Simple Syndication”)**

RSS enables people who create Web content to establish a “feed” for it, to which interested users can subscribe, meaning that they are automatically notified when new content is available. In more technical terms, RSS is:

a family of web feed formats used to publish frequently updated works—such as blog entries, news headlines, audio, and video—in a standardized format. An RSS document (which is called a “feed”, “web feed”, or

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“channel”) includes full or summarized text, plus metadata such as publishing dates and authorship. (Wikipedia, “RSS,” accessed 2009)

You can create an RSS feed for Web 2.0 products you create, like blogs and podcasts. When you visit sites like blogs, popular news sites, or virtually any kind of Web site that updates its content, you will probably see options for subscribing.

To conveniently manage and read the content you subscribe to, you will want to set up an account with a “feed reader” (also known as an “RSS reader” or “aggregator”) such as Google Reader ([www.google.com/reader](http://www.google.com/reader)) or Bloglines ([www.bloglines.com](http://www.bloglines.com)). (Increasingly, desktop e-mail systems are also offering support for subscribing to RSS feeds.) These readers collect the latest information from the feeds you subscribe to and then provide the updates to you in an easy-to-use interface.

### Tagging

A “tag” is a descriptive word or phrase applied to a piece of digital information, such as a Web page, blog post, or digital image, video, audio, or other electronic file. Tags are applied by creators and users of digital content and are used to help people find materials they are interested in. There are no formal standards for creating tags, so they are essentially user-applied keywords (as opposed to formal subject headings or hierarchical classifications). When a creator applies tags, the tags will probably describe the general content or special qualities of the digital object. User-supplied tags may operate in this way too, but they may also reflect the user’s own personal way of finding materials (such as their own abbreviations or categorization schemes, or just “good site” or “to do”). The ways in which tags are applied and used vary for different Web 2.0 tools, but they are a common feature of many of the tools you will read about in this book.

One of the more interesting ways to reuse tags is to create “tag clouds,” which are graphic representations of the tags used to describe something, with more frequently used tags appearing larger and in brighter colors. Figure 1-1 shows a tag cloud of words commonly used to describe Web 2.0.

### Social Bookmarking

Bookmarking has long been a feature of many Web browsers. Creating a bookmark for a Web page gives you a way to make a note of material that interests



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One of the earliest and most prominent of these bookmarking sites is Delicious (or [del.icio.us](http://del.icio.us); <http://delicious.com>), which is credited with coining the term “social bookmarking.” Another site is StumbleUpon ([www.stumbleupon.com](http://www.stumbleupon.com)), which works in a similar way but allows users to share reviews and recommendations of Web content. Digg ([www.digg.com](http://www.digg.com)) and Reddit ([www.reddit.com](http://www.reddit.com)) are “social news sites”; that is, they allow users to submit and vote on items like news stories or other links to Web resources. The service “AddThis” ([www.addthis.com](http://www.addthis.com); Figure 1-2) has created a widget (see Chapter 10) that provides you with a choice of using virtually any of the current social bookmarking tools to tag a Web page.

An interesting use of social bookmarking in an archival setting is the Delicious account established by the U.S. National Archives’ education staff

**Figure 1-2. Display of Social Networking Services Available on “AddThis”**

The image shows a screenshot of the AddThis 'Bookmark & Share' widget. At the top, it says 'Bookmark & Share' and 'AddThis.com'. Below that, it says 'Select a Service:'. There is a grid of 30 social networking service icons arranged in three columns and ten rows. The services listed are: AIM, Ask, Backflip, BallHype, Bebo, Blogmarks, Delicious, Digg, Diigo, Facebook, Fark, Faves, Favorites, FriendFeed, Google Bookmarks, Kaboodle, KIRTSY, Link-a-Gogo, LinkedIn, Live, Mister Wong, Mixx, Multiply, myAOL, MySpace, Netvibes, Netvouz, Newsvine, Propeller, Reddit, Segnalo, Simpy, Slashdot, Spurl, StumbleUpon, Tailrank, Technorati, Twitter, Yahoo Bookmarks, Yahoo Buzz, and Yarbarker. At the bottom, it says 'Get your own AddThis button!' and has a 'SHARE' button with a plus sign and a dropdown menu with icons for various services.

(<http://delicious.com/NationalArchivesEducation>) to share resources with the teachers who attend their workshops and other programs. Archives' staff use tags like "NHD08" to flag resources that relate to the theme of National History Day in conjunction with topical tags like "dictatorsvillains." Most of the resources tagged are digitized images or documents from the National Archives' own holdings, so the education staff are promoting the use of the archives' collections while providing a valuable service to teachers and students.

## **MYTHS AND MISCONCEPTIONS ABOUT WEB 2.0**

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Today, most people who use the Web regularly are accustomed to the term "Web 2.0" and the concepts it describes. Even people who don't use services like Twitter or Facebook have probably heard or read stories about them in the media. While one would think that by this time most people had overcome their suspicions about using these kinds of Web tools, you may still encounter people who have reservations. Some of the most common myths and misconceptions about Web 2.0 are discussed to help you address these issues.

### **"Those Sites Are Scary and Dangerous"**

People may have formed this opinion based on stories in the media about bad things happening to someone who shared too much personal information on social networking sites. Everyone should exercise the same kind of discretion on these new kinds of Web sites as they would in any other public forum, but for some people (particularly young people) the ease with which you can share information leads to lapses in judgment. Information you post in any Web forum can be shared, even if the forum itself is private. Be discrete about the information you share (including pictures and video). From an institutional perspective, there is little chance that a well-monitored presence in a Web 2.0 forum would lead to anything scary or dangerous. It's true that on many sites other people can post pictures or messages that your institution might not approve of (for example, comments on videos posted on YouTube or images on Flickr). If you are monitoring your presence, you will probably see them quickly and remove or modify them. Even if people see them before you have a chance to take them down, most users of Web 2.0 sites understand that an institution cannot be held responsible for the actions of private individuals. In addition, organizations like archives and historical organizations are not the most popular of Web 2.0 participants and so are unlikely targets for spam or vandalism.

### **“Only Kids Use That Stuff”**

While it’s true that many Web 2.0 tools originated as sites that were most commonly used by high school and college students, they have long since matured out of that stage of development. Recent studies by the Pew Internet & American Life Project show that:

- Forty-eight percent of Internet users have been to video-sharing sites such as YouTube and the daily traffic to such sites on a typical day has doubled in the past year (Rainie, 2008).
- The share of adult Internet users who have a profile on an online social network site has more than quadrupled in the past four years—from 8 percent in 2005 to 35 percent now (Lenhart, 2009).
- Twitter and similar services have been most avidly embraced by young adults. Nearly one in five (19 percent) online adults ages 18 to 24 have used Twitter and its ilk, as have 20 percent of online adults 25 to 34 (Lenhart and Fox, 2009).
- Currently, 19 percent of all Internet users say they have downloaded a podcast so that they could listen to it or view it later (Madden and Jones, 2008).

These and similar studies show that Web 2.0 tools are, indeed, more popular among younger people than among those over 35; however, their use is steadily increasing among older Web users. It’s also important to remember that, as time passes, the people who were “the kids” yesterday are today’s young professionals. In addition, anything that “kids” use, such as Twitter or Facebook, is also likely to be something that their parents and other family members start using to keep in touch with them. Web 2.0 tools certainly were used first and are used most heavily by the young, but it isn’t true by any means that they are the only people using them.

### **“It’s Just a Fad”**

Some people think that because the media hype about Web 2.0 and some of its sites was so prominent, the “buzz” can’t possibly be justified. They may also think that the huge numbers of users attracted by sites like YouTube, Twitter, and Facebook are too big to last and that when the novelty wears off the sites will wither and die. Although the media may have exaggerated the importance of Web 2.0 and overhyped some of its more popular sites, this has no bearing on

the fact that the way users interact with the Web has fundamentally changed. No individual Web site is guaranteed to last, and there is a good chance that many of the specific Web sites or tools discussed in this book will not exist five years from now. However, given their broad popularity (and the amount of money being invested in them), there is a good chance many of them will continue to exist and evolve for years to come. All of the Web 2.0 tools discussed in this book have been in existence and stable for several years. Although it's difficult to predict the longevity of any individual site or tool, the services being offered and the overall impact of Web 2.0 are here to stay.

### **"If I Give My Content Away, People Will Misuse It"**

This is a concern voiced more often by cultural institutions than by individuals, and it really centers on the issue of control over how their materials are used. Some institutions have been afraid to share digital content over the Web because they are concerned people will infringe on their copyright by redistributing it without proper credit or that people will deface or modify the content in an offensive or irresponsible way. It is certainly possible that either of these things can happen if you share your digital content. Some institutions, particularly in the early days of the Web, put watermarks on their digital images to address some of these kinds of concerns. There are no studies or assessments that identify the percentage of digital content cultural institutions have shared that has been misused. However, it is worth noting that the largest and most prominent cultural institutions in the world share images of their content online. They seem to think, as most organizations with an educational or outreach mandate do, that the opportunities presented by sharing their collections outweigh the potential risk.

### **"If I Give My Content Away, I'll Lose Money"**

This is another concern raised by organizations like archives and historical societies that include as part of their revenue stream profits made by charging for copies of items in their collections. Some organizations provide copies on a cost-recovery basis and so are not dependent on reproduction fees as a source of revenue. For other institutions, the loss of this revenue is a significant concern. Again, no surveys or studies have yet been done that show how sharing digital surrogates of collections affects income. For most archives, the quality of the images shared on the Web is not high enough to meet the standards needed for high-quality publication, so most people or organizations wanting

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to publish an image will still need to purchase a high-resolution digital version. It's true that people who want to have a digital image of a picture or document for their own reference purposes would not need to purchase one if a copy were available online. If revenue from people purchasing reference copies constitutes a significant source of income for your institution, you may want to take that into account in deciding what images to include in your Web 2.0 projects. However, the majority of organizations who have shared their materials would probably say that the benefits they've gained from the exposure and the value the public has gained from having access to their collections far outweigh any revenue they may have lost.

These myths and misconceptions about Web 2.0 are rapidly fading away, and many people are already turning their attention to Web 3.0. Over time the term Web 2.0 will fall out of fashion, and tools like RSS, tags, and social networking may be replaced by things that are even more powerful or simple to use. But the concepts of openness and sharing on the Web that that term embodies are here to stay, and for the foreseeable future Web 2.0 is the Web we will be using. All archives and historical organizations need to become accustomed to operating in this new environment and begin to explore its diverse opportunities for interacting with their users.

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