

What Is Web 2.0?

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Ask a dozen tech pundits to describe Web 2.0 and you're likely to get two dozen explanations as to what it is. The precise definition remains open to debate — and in some ways, that's exactly the point. This much is clear: Web 2.0 represents an important shift in the way digital information is created, shared, stored, distributed, and manipulated. In the years ahead, it will have a significant impact in the way businesses use both the Internet and enterprise-level IT applications.

As the name suggests, Web 2.0 describes a set of next-generation Internet technologies. These protocols and tools make it easier to create online applications that behave dynamically, much like traditional PC-based software. They're also highly social, encouraging users to manipulate and interact with content in new ways. Web 2.0 pushes computing power off the desktop and onto the Internet, which means less time and money spent on PC software administration. As a general rule, Web 2.0 tools are also less expensive than traditional software — and many are even free. Because they're Web-based, all you need to get started is an up-to-date browser.

Key Stats

- **Buzz phrase coined:** 2004, by Tim O'Reilly of tech publisher O'Reilly Media
- **Thumbnail definition:** Web 2.0 is a set of Web-based software services that encourage users to become more involved in the creation and manipulation of data.
- **Enabling technologies:** AJAX, blogs, RSS, wikis, XML, Atom
- **Prominent Web 2.0 brands:** digg, Flickr, Google Apps, LinkedIn, Salesforce.com, Socialtext, YouTube, Wikipedia
- **Investment:** Web 2.0 startups attracted \$844 million in venture capital investment during 2006, more than twice as much as in 2005. (Source: VentureOne)

Why It Matters Now

In 1984, Sun Microsystems co-founder John Gage coined the phrase "the network is the computer" to describe his vision for the future of information technology. This was a bold statement at the time, because it anticipated a future in which data networks would be powerful enough to supplant mainframes and desktop PCs as a primary IT resource.

Fast-forward to the present: Though it's taken more than two decades for the prediction to come true, Web 2.0 is at last turning the network into a vibrant computing platform. Today's Web-based applications are fast and dynamic, and they behave much like software applications installed on desktop computers. For example, Google Spreadsheets is a spreadsheet tool that works much like

Microsoft Excel, with three big differences: It's Web-based, so users don't need to download or install any software; it's collaborative, so multiple users can work on one spreadsheet at the same time; and (best of all) it's free.

In a Web 2.0 world, instead of merely reading a newsletter, for example, you might begin to publish one of your own. If you're frustrated by the way your current software compiles data, Web 2.0 services can make it easier to display the data in a different way. Having versioning problems with shared documents? Web 2.0 allows groups of people to work on a document or spreadsheet simultaneously, while in the background a computer keeps track of who made what changes where and when.

In general, the key characteristics of Web 2.0 are:

- Web-based applications can be accessed from anywhere
- Simple applications solve specific problems
- Value lies in content, not the software used to display content
- Data can be readily shared
- Distribution is bottom-up, not top-down
- Employees and customers can access and use tools on their own
- Social tools encourage people to create, collaborate, edit, categorize, exchange, and promote information
- Network effects are encouraged; the more people who contribute, the better the content gets

Still confused? This clever [video](#) explains what makes Web 2.0 different from Web 1.0.

All of this has major implications for the future of information technology and personal communications. Web 2.0 creates new ways for large groups of people to collaborate and exchange information while reducing the importance of the PC itself as an information-delivery platform. When both the applications and the data that feed into them reside online, a variety of devices can function as information terminals: your smart phone, your music player, the computer you use today, and whatever computer you'll use next year. Web 2.0 not only makes all this possible, it also makes it inexpensive and easy to deploy.

Why It Matters to You

Although many of the most famous Web 2.0 tools are consumer applications — YouTube, Flickr, and MySpace come quickly to mind — there are two main reasons why Web 2.0 is relevant to business people.

The first has to do with reducing the costs associated with traditional enterprise applications. As any IT manager will tell you, it's expensive to install, configure, maintain, and upgrade essential software on personal computers and company servers — and even more so if you have lots of employees with lots of different computing needs. Web 2.0 tools eliminate much of this hassle and expense because Web 2.0 applications reside on servers maintained by the vendors themselves.

Web 2.0 is also changing the way information is created, used, shared, and manipulated. Thanks in part to Web 2.0 technologies, the barriers between a corporation (including its CEO, board, managers, and employees) and the consumer have never been so thin. Taking advantage of this reality will require a major attitude shift on the part of many companies and the people who run them. Hierarchy and direct control are giving way to notions of collaboration, creativity, transparency, and mass participation, and the effects of this change are just beginning to make themselves felt.

Web 2.0 offers many potential benefits for the business world — but it's a different world indeed. For example, in 2006, General Motors invited consumers to create their own commercials for the Chevrolet Tahoe SUV, using GM-supplied video and the creators' choice of music and text. The effort generated plenty of online traffic, plenty of buzz, and (as might have been expected) plenty of commercials that GM wished had never seen the light of day. But compared to a traditional ad campaign, the effort was inexpensive, it exposed the Chevy Tahoe to a new audience, and it worked — sales of the vehicle were strong compared to the same period the year before.

The Strong Points

Philosophically, Web 2.0 is all about simplicity. Practically, it decouples computing from stand-alone computers — a shift that dramatically reduces software deployment and administrative costs. It uses common software protocols to foster the free exchange of information between different tools and groups of users (minimizing the "silo" effect created when data becomes trapped inside a single technology platform or functional group). Lastly, because it encourages large-scale collaboration, Web 2.0 facilitates new forms of problem-solving that can provide business managers with valuable ideas and insights.

The Weak Spots

The hype surrounding Web 2.0 can be off-putting — and confusing. Some veteran technologists even argue that Web 2.0 is little more than a catchy new name for a cluster of technologies that have been around for quite some time.

Both of these criticisms are relevant to any manager who is evaluating Web 2.0 services for use inside your company. The fuzzy nature of the term means that some vendors will tout themselves as being "Web 2.0," just to get attention — regardless of the extent to which their offering really is dynamic, interactive, or built around accepted Web 2.0 protocols. Meanwhile, the influx of venture capital means that more and more Web 2.0 startups are entering the marketplace — and not all of them will survive. Before making any substantial investment in a Web 2.0-based tool, do your due diligence to assess the risks and minimize your company's exposure to unpleasant surprises.

Key Players

Michael Arrington: Just as restaurants, movie producers, and musicians keep an eye on what the critics have to say, so, too, do Web 2.0 startups. No one's word carries more weight than that of Arrington, who publishes his thoughts on his [TechCrunch blog](#).

Mark Benioff: The founder and CEO of [Salesforce.com](#), Benioff was touting the benefits of his company's Web-based customer relationship management (CRM) tools years before the phrase "Web 2.0" was invented. Thanks in part to Benioff's talent for marketing and self-promotion, Salesforce.com is credited with having fatally undermined the business model of Siebel, one of its former rivals.

Tim O'Reilly: The founder of tech publisher O'Reilly Media and a respected industry visionary, O'Reilly helped coin the term "Web 2.0" in 2004 and he's still considered a leading thinker on the subject. O'Reilly's [most recent definition of Web 2.0](#) describes it as "the business revolution in the computer industry caused by the move to the Internet as platform, and an attempt to understand the rules for success on that new platform. Chief among those rules is this: Build applications that harness network effects to get better the more people use them."

Venture capitalists: Much of the most interesting activity in Web 2.0 development comes from entrepreneurial startups, and these are usually funded by VC investment. In 2006, the most active investors in Web 2.0 startups were Benchmark Capital, Draper Fisher Jurvetson, Sequoia Capital, and Omidyar Network, according to [VentureOne](#).

How to Talk About It

Apart from the concept itself, some specific Web 2.0 technologies are also important to understand. These include:

AJAX: An acronym derived from "Asynchronous JavaScript and XML." AJAX is an important underlying technology used to create interactive Web applications. Ajax is what enables Web 2.0 sites to behave dynamically, so that they feel more like computer programs than static web pages. Like the way Google Maps lets you drag elements across the page? That's AJAX in action.

Atom: A format for the syndication of online content, atom functions as a newer alternative to RSS (described below).

Blog: Originally derived from the word "weblog," a blog is a simple content website created with inexpensive self-publishing tools. Blogs are the backbone of Web 2.0's democratic spirit.

Mashups: Websites or applications that combine content from one or more sources. For example, [Cellreception.com](#) combines Google Maps with a database of 124,000 cell phone tower locations to help users determine where mobile coverage is strong — and where it isn't.

RSS: Shorthand for "Real Simple Syndication," RSS is a protocol that makes it easy for computer users to receive content from their favorite providers whenever the content is updated. Instead of having to remember to visit a website to read a favorite column, watch a video, or listen to an audio program, RSS lets a user subscribe to the content so it's delivered automatically. The flow of content the user receives is called an "RSS feed."

Social media: A generic term used to describe Web-based tools that harness the power of collaboration and group interaction. This can take many forms, from the personal web pages of [MySpace](#) to the virtual worlds of [Second Life](#) to the professional networking popular on [LinkedIn](#).

Tags: User-generated keywords used to describe online content. Tags make it easier for both humans and search engines to find relevant and related information.

Wikis: A dynamic Web document that allows users to add, change, or edit the content displayed on the page. The user-created [Wikipedia](#) online encyclopedia is the most famous example.

XML: An abbreviation for "Extensible Markup Language," XML is a programming code for online data that preserves the structure and formatting of a digital document regardless of whatever application is used to read it. XML is an important enabling technology for RSS feeds (described above).

Additional Resources

["What Is Web 2.0"](#): an influential 2005 blog post by Tim O'Reilly

[All Things Web 2.0](#): Website with a directory of Web 2.0 services, categorized by function

[Go2Web20](#): Another useful Web 2.0 services directory, Go2Web20 also walks the talk by using Web 2.0 technologies such as AJAX and tagging

[TechCrunch](#): Blog by Michael Arrington dedicated to profiling and reviewing Web 2.0 products and companies.

["Web 2.0 ... The Machine is Us/ing Us"](#): Video by Kansas State University professor Michael Wesch that cleverly illustrates how Web 2.0 continues the evolution of the Internet