Exploring the New Internet

# REVOLUTION, TAKE TWO

Modern websites bear little resemblence to their legacy predecessors. We'll show you why the new web is different and how you can benefit from the system of technologies we know collectively as Web 2.0.

**BY CARSTEN SCHNOBER AND JOE CASAD**

**W**ikipedia, Google, and Myspace are shooting stars in the constellation of web content providers as we move on into a new millennium. These sites have one thing in common: a radical renunciation of the legacy concepts associated with the old World Wide Web. The companies embrace new technologies, and a new way of thinking that has come to be called Web 2.0. You'll see some examples of new Internet technologies in this month's Linux Magazine cover story.

## A Brief History

Academics were the first users of World Wide Web; the web rested easily upon the foundation of preceding technologies, such as archie and gopher, and it provided an efficient means for scholars to share their work. In the mid-90s, private companies started using the web as an inexpensive and highly effective platform for sales and marketing.

Communication on the early web was typically one way – content providers offered information to content users. From a technical point viewpoint, however, the Internet has always offered support for bidirectional communication. It wasn't long before developers started to experiment with integrating this bidirectional communication into web technologies.

By the year 2001, a majority of the population in industrialized countries had Internet access. At the same time, a crop of new-style websites was begin-ning to appear, with a look and feel that differed vastly from legacy sites. In 2004, the publishing company O'Reilly hosted a conference on the new World Wide Web. O'Reilly argued that the companies and products that survived the crash of the dot-com bubble had some traits in common, and they asked whether a new web was emerging from the ashes of the old failed paradigm. In choosing a title for the conference O'Reilly coined the term Web 2.0.

According to Tim O'Reilly, "Web 2.0 doesn't have a hard boundary, but rather, a gravitational core. You can visualize Web 2.0 as a set of principles and practices that tie together a veritable solar system of sites that demonstrate some or all of those principles…" In one sense, Web 2.0 is a design philosophy that evolved from a set of very inventive programming tools. In another sense, Web 2.0 is about community, communication, and flexibility for both the user and the developer.

## The Web 2.0 Landscape

Some prominent examples should help clarify the principles of Web 2.0. Users can publish their photos on Flickr [1] (Figure 1), their videos on Youtube [2], and links to their favorite pages (social bookmarks) on del.icio.us [3]. Myspace [4] gives users a complete platform where they can publish any kind of content, including Weblogs (blogs), photos, videos, and music.

All of these examples are run by commercial enterprises that provide services free of charge. Revenues are typically generated by hosting ads that appear alongside content posted by users, and more often than not, the ads will mention products related to the content of the page. This makes the number of users very important: if more users build Myspace pages, more users will visit Myspace, which will lead to more ad revenue for the company.

**Figure 1: Users can upload their photos to Flickr, and visitors view the photos in a web browser just as if the application were running on their local machine.**

In the Web 2.0 world, producers and viewers categorize photos (Flickr), videos (Youtube), or links (del.icio.us) based on keywords. You could use a search function to look for all the links with a tag of, say, "Linux." Cross-references between entries occur, as many pages tagged with "Linux" will also be included in the "Open Source" category, for example. These cross-references take users to other pages that they will most likely be interested in as they surf a wave of content with similar tagging.

Links between users on social networks grow in a similar way, and this has given rise to another term for the new web: the Social Web. Last.fm [5] (Figure 2) embodies the spirit of the Social Web concept. The Last.fm site collects information on the kind of music users listen to on their PCs.

Players with Last.fm pass the name of every track to which they listen onto the server. In turn, the server evaluates correlations between your interests and the interests of other users, recommending tracks based on the results of this analysis. If you log into your Last.fm account via the web interface, Last.fm will introduce you to other users with a similar taste in music, thus automatically helping you find musical soulmates.

Wikis and weblogs, or blogs for short, are other important features of today's Internet. Wikis let groups of users build collaborative content with minimal technical overheard. Blogs are the Web 2.0

counterpart of personal homepages. A weblog will typically include diary-style entries, images, or other elements.

Web 2.0 applications often rely on a phenomenon that is grandiloquently referred to as collective intelligence. The sheer volume of Wikipedia visitors, for instance, helps expose incorrect or missing information. Of course, some critics see this decentralized principle as a victory of quantity over quality. In Web 2.0, a contribution is considered good if a few million visitors view it, no matter how knowledgeable those visitors might be. But few would question the influence

of the new web as a tool for building community.

## What's in This Issue?

Previous issues of Linux Magazine have included articles on blogs [7], podcasts [8], and other Web 2.0 topics such as Flickr [9] and Last.fm [10]. This month, we begin with a look at an important technology that is at the heart of the Web 2.0 revolution. Ajax (Asynchronous Javascript and XML) is a combination of web programming technologies that have been around for many years: Javascript, XMLHttpRequest, and DHTML (Dynamic HTML). The short explanation for the importance of Ajax is that Ajax technology lets users update specific parts of a web page (DHTML) without forcing a reload of the whole page. The long answer is that Ajax has unlocked a new potential for the role of web applications.

Some Ajax-based web applications – such as Google Mail [11] and Google Maps [12] – are nearly as fast as conventional desktop apps. Web applications such as Ajaxwrite [8] (Figure 3) take the promise of Ajax a step farther. Ajaxwrite is a word processor that operates from the Internet. Its vendor, Ajaxlaunch, has announced that it will be developing a full set of household applications with Ajax in the near future.

This month, we'll also examine another great Web 2.0 innovation with our roundup of small wiki applications. If
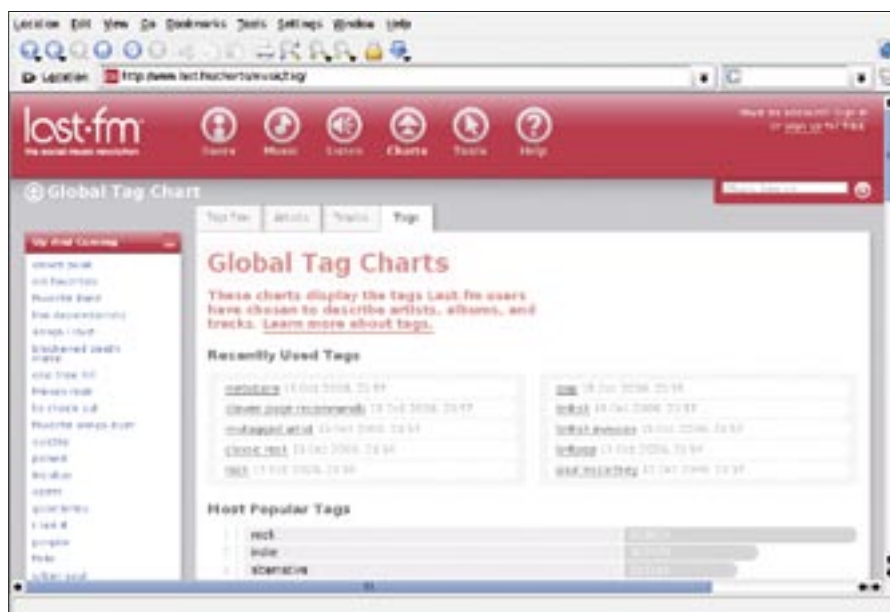


**Figure 2: Last.fm automatically evaluates a user's taste in music, which gives the site the ability to make very specific musical recommendations.**

you don't need the power of a full data-base-driven wiki platform, you'll be interested in this look at simpler wiki alternatives. Our final cover story provides a glimpse at how the Web 2.0 philosophy is affecting the way we think about ordinary desktop applications. TiddlyWiki is a wiki-like tool designed for a single desktop user.

We hope you enjoy this month's Web 2.0 cover story. ■



**Figure 3: Ajaxwrite launches a full-fledged word processor in a web browser. Thanks to Ajax, Java or Flash plugins are not required.**

## INFO

[1] Flickr: *http://www.flickr.com*

[2] Youtube: *http://www.youtube.com*

[3] del.icio.us: *http://del.icio.us*

[4] Myspace: *http://www.myspace.com*

[5] Last.fm: *http://www.last.fm*

[6] Wikipedia: *http://www.wikipedia.org*

[7] Linux Magazine, Issue #55, "Wiki and Blog," June 2005

[8] "Sound Saver: Recording podcasts with Audacity," Linux Magazine, May 2006

[9] "Personal Playlist: Creating a virtual radio station with Last.fm," Linux Magazine, May 2006

[10] "Photo Copier: Managing photos on Flickr.com with Kflickr," Linux Magazine, August 2006

[11] Google Mail: *http://mail.google.com*

[12] Google Maps: *http://maps.google.com*