

Web 2.0 and Beyond

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Abstract

The Internet is growing at astounding rates and so are the programs and tools that it uses. This report offers a look into the new and exciting advancements the Internet is making and designates it with a version number not unlike programs do when they evolve on the desktop environment. O'Reilly Media popularized a definition of the evolving Internet as "Web Version 2.0" back in 2004 and has grown to become one of the biggest "buzzwords" found on the Internet [4].

1. INTRODUCTION

In one form or another, everybody has some sort of familiarity with the Internet and the World Wide Web. Quite simply, the Internet is a network of interconnected computer networks [2] and the Web is a computer network consisting of a collection of internet sites that offer text, graphics, sound, and animation resources [8]. The easiest way to interpret the differences between the two is that the Internet refers to the physical hardware connections while the Web refers to the software people use while online. The Web is not to be confused with the applications on your desktop that take you to the Web like Firefox or Internet Explorer. In a rough sense, the Web is interpreted by those desktop browsers and brought to you in a format you can read, click, and interact with.

1.1 History

The history of the Web runs deep within the history of the Internet and is beyond the scope of this report. What's important is that around 1992, the Web started to quickly pick up steam and users from across the globe started to log on by the millions. One possible reason that so many people started to use the Web was the fact that it makes communication and sharing information easier based on the many available tools it had to offer. Without these tools, there wouldn't be much of a purpose for users to actually use the Web. And it's the tools that help setup the foundation for what "Web 2.0" actually represents.

2. TOOLS

The tools referred to here are not the kind of tools you would find in the shed out in the backyard.

These tools are what users take advantage of when they want to share a video, send email, store files, shop, or chat instantly online with their friend on the other side of the globe. These common tools make communication and sharing instant all with the click of a few buttons.

2.1 Relating Tools

Stepping back to the tools in the backyard shed, there are various instruments such as stainless steel knives and heat-treated steel hammers. These tools have a long history behind them as they evolved from chiseled out rocks and wooden blocks. They didn't start out as the effective, strong tools that they are today. This concept is essentially what "Web 2.0" is about: old tools becoming new, better tools through an "update".

Most people are familiar with the term "update" when referring to the desktop software on their computer. The first version of the software was probably clumsy and not very well defined. Through updates from version 1.0 to version 2.0, the software is less clumsy and well defined. The same concept applies to the Web. Now, with this analogy in place, an attempt at defining what Web 2.0 is, is now in place.

3. DEFINING WEB 2.0

The problem with trying to give the Web a single version number is that the Web refers to thousands of different applications, each changing individually. So, instead a conceptual, generic name is given that encompass the overall structure and organization of the Web. This name is "Web 2.0" and it has become one of the Internet's largest "buzzwords" (a fashion word to create excitement or significance).

3.1 Definition

Coined by Dale Dougherty and publicized by O'Reilly Media in 2004, Web 2.0 defines a new generation of communication, sharing, and interacting with the Web [4]. The following is a quote from Tim O'Reilly as he tries to define what Web 2.0 is:

Web 2.0 is 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. (This is what I've elsewhere called "harnessing collective intelligence.") [5]

From a users standpoint, this simply means that in 2004, the Web made a shift into a user contributed network, or

collective intelligence of individual users. Dr. Michael Wesch described this in a video he created that outlines how the Web is not necessarily using us, but rather we are the web collectively. The video is fittingly titled “The Machine is Us/ing Us.” [7]. This shift was essentially the move from Web version 1.0 to Web version 2.0.

4. THE WEB BEFORE AND NOW

Using the term Web 1.0 is a bit misleading because the Web was never conceptualized as a version number until now. If there were such a thing as Web 1.0, it could be thought of as everything that was before Web 2.0 obsoleted it. Web 1.0 is still around but nobody wants to use it anymore given the new tools (just like that old wooden block hammer).

4.1 User Contributions

As mentioned before, the biggest change from the two is how much the web user actually participates in helping create the web. Referring to Figure 1, a typical Web 1.0 website is controlled by a single person (webmaster) who is in charge of the content. Visitors can view the website by stumbling upon it without much interaction. A typical Web 2.0 website on the other hand is controlled not only by the webmaster, but by visitors who can contribute to the overall site and make it better. Other visitors will visit this website through socializing and Really Simple Syndicated (RSS) feeds. This enriches and enhances the websites into something that totally obsoletes Web 1.0. The characteristics of a socialized and user contributed website naturally contributes to the overall traffic and popularity of it.

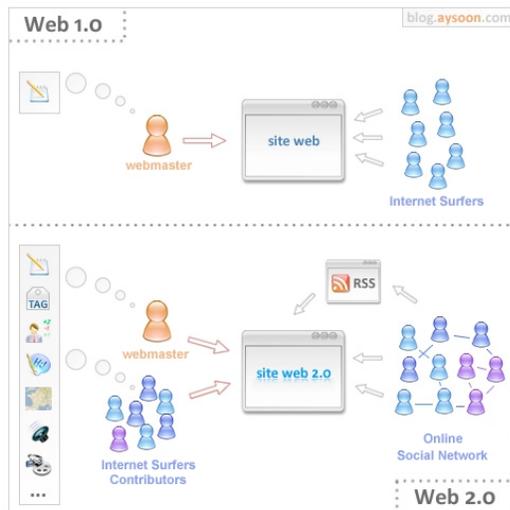


Figure 1: Web 1.0 vs Web 2.0 [1]

4.2 Web 2.0 Statistics And Popularity

In a report done by Mary Madden and Susannah Fox of the Pew Internet Project, comparisons are made by example of what's happening to the popularity of Web 1.0 websites and Web 2.0 websites. When looking at the trends for reference websites, one can see very quickly that user created and contributed websites are growing much faster than one that is only managed by a single webmaster. Specifically, the two examples of reference websites are Encarta Encyclopedia and Wikipedia. Referring to Figure 2, Wikipedia, a user-contributed Web 2.0 website, is “soaring” above the dwindling Encarta, a non-user contributed Web 1.0 website.

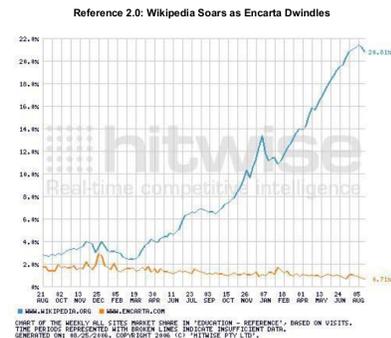


Figure 2: Popularity of Encarta vs Wikipedia [3]

Many other website follow this trend. To name another example, MySpace (a personal homepage website) has grown in popularity leaps and bounds above Geocities (see Figure 3).

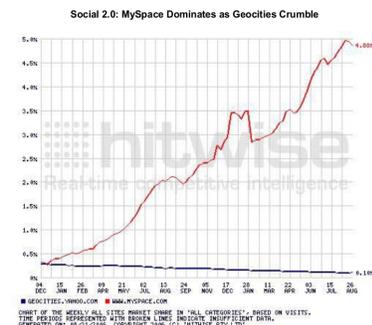


Figure 3: Popularity of MySpace vs Geocities[3]

It quickly becomes apparent that Web 2.0 has certainly made an impact on the web and the way users use it. To make the concept of Web 1.0 vs Web 2.0 concrete, a comparison of website examples is organized into Table 1 below:

Topic	Web 1.0	Web 2.0
Document Collaboration	<i>E-Mail Attachments</i>	<i>Google Documents Online</i>
Web Browsing	<i>Direct Domain Name</i>	<i>Search Engine</i>
Overall Organization	<i>Category Listing</i>	<i>Tagging</i>
Information and Reference	<i>Encyclopedia Online</i>	<i>Wikipedia</i>
Communication	<i>Mailing Lists</i>	<i>Forums</i>
Personal Homepages	<i>Geocities</i>	<i>MySpace and Facebook</i>
Peer to Peer File Sharing	<i>Napster</i>	<i>Bittorrent</i>
Music and Entertainment	<i>Physical Trip to Music Store</i>	<i>iTunes, Amazon mp3, etc...</i>
Image Sharing	<i>Ofoto (Kodak Gallery)</i>	<i>Flickr (Yahoo)</i>
“One-Click” File Hosting	<i>RapidShare</i>	<i>MediaFire</i>
Video Sharing	<i>E-Mail Attachment</i>	<i>YouTube</i>

Table 1: Comparison of Web 1.0 and 2.0 services. [1]

It has been four years since Web 2.0 has been introduced and technologically speaking, that's almost an eternity. Web 2.0 has evolved into something even more robust, aesthetic, and a better quality than it was before. This isn't a popular or professionally developed concept, but rather it's an opinion and will make for the rest of the discussion of this report.

5. BEYOND WEB 2.0

The differences between Web 2.0 and Web 2.5 are subtle and not near as dramatic as the difference between Web 1.0 and Web 2.0. The conceptual idea is that Web 2.5 builds upon what Web 2.0 is all about and adds new concepts to the way users experience the Web. These concepts include OS independence, open source, and more efficient, secure development as well as better aesthetics, robustness, and better quality.

5.1 OS Independence

OS Independence is the ability for a program or Web application to run on any operating system the user may be on whether it be Windows, Mac OS, Linux/Unix, FreeBSD, or any others. This is a very important concept about Web 2.5. Many websites which are considered to

be Web 2.0 keep their doors closed to any users who are running Mac OS or Linux and simply disallow them access inside. Web 2.5 sites have made careful consideration and huge efforts in designing their sites to be OS Independent so they can reach out to as many users as possible, therefore getting an increase in user contributions. In order to accomplish this, many of the tools need to be opened up and shared. This in a rough sense is being open source.

5.2 Open Source

Open source is another important aspect of what it means to be a part of Web 2.5. In order to explain what open source means, the term source code needs to be clarified. The code that is used to create the websites, especially the multimedia that is displayed on the website is called the source code. This code is generally put into a black box so that nobody can see what's inside. When this black box is opened for all to see, then it becomes open source. This is beneficial to everybody because there are not as many restrictions on the code and people are free to modify it, make it better, and tailor it to a specific purpose. This also helps with OS independence. For example, Adobe made the step from Web 2.0 to Web 2.5 by opening their .swf and .flv formats which will help developers in making it cross-platform or OS independent [6].

5.3 Efficiency And Security

Efficiency and security are almost directly tied with open source and OS independence. With the ability for thousands or even tens of thousands of eyes to view the source code on any platform will allow them to catch inadequacies or security holes and fix them quickly. This will naturally lead to a very secure, efficient, and robust set of Web 2.5 tools for end users.

5.4 Aesthetics And Quality

Not everything about Web 2.5 is structural however. Other important details will be noticeable by the end user immediately such as better aesthetics and higher quality material or multimedia that is brought to their computer screens through a particular website. Ease of use will also be a central theme to Web 2.5 with better research on how menus and navigation should flow throughout the website. The tools that are now considered Web 2.0 will be replaced or upgraded to the Web 2.5 “standards” just like what happened in the transition from Web 1.0 to Web 2.0. Examples of these include what's listed in Table 2 below:

Topic	Web 2.0	Web 2.5
Video Sharing	<i>YouTube (low resolution)</i>	<i>Vimeo (HD Resolution)</i>
Personal Blogging	<i>MySpace (lower aesthetics)</i>	<i>Wordpress (higher aesthetics)</i>
Music Downloads	<i>Itunes (Digital rights management)</i>	<i>Amazon MP3 (Freedom to use)</i>
Social Bookmarking	<i>Slashdot (lower aesthetics)</i>	<i>Digg (higher aesthetics)</i>
Information Sharing	<i>Experts Exchange (Non-Free answers)</i>	<i>Ehow (Free answers and tutorials)</i>

Table 2: Comparison of Web 2.0 and 2.5 services.

In the opinion of the report, Web 2.5 will bring exciting changes in how users use the Web in their everyday lives. With the capability of any web application to run securely and efficiently on any operating system because of its open source characteristics and its refined quality and aesthetics, Web 2.5 will be something to look forward to in the near future.

6. CONCLUSIONS

The Web is in a constant state of change and refinement and will continue to be as long as it is around. The tools that are used on the Web go through upgrades as the web changes and evolves. In order to grasp these advancements, a generalized concept was created to define the changes of the Web and thus, the buzzword "Web 2.0" was coined. Web 2.0 attempts to encompass everything that the Web has transitioned towards and obsoletes anything that was a part of "Web 1.0", if there was such a thing. As time passes on, even Web 2.0 will be obsoleted by another "version" of the Web. Exactly when that will occur is beyond the scope of this report, but in order to better understand what is happening now with the Web, another conceptual version number can be used to describe the changes: "Web 2.5". Web 2.5 is an incremental version number to designate what was after 2.0 and what is before 3.0. This will continue indefinitely as the Web continues to progress and evolve into something that only future generations of users will see.

In the meantime, more emphasis will be placed on user interaction and these users will happily create, shape, and organize the Web without even realizing it. The Web is full of exciting changes of which most are happening everyday before our eyes, and we can only hope to keep up with them and what will come in the future.

7. REFERENCES

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