Web 2.0 Services

The web is used as a combination of applications, according to W3C there is a need for applications to communicate between each other and this is what Web Services are for. A Web 2.0 SW is considered as service instead of as a product since it is based on several applications combined together to reuse functionalities of each of them. This modularity makes Web 2.0 services more flexible and easier to update [Gomero, 2006]. Pioneer Web 2.0 services were eBay and Napster which were basically the two web services that enabled user socialization, participation and sharing information among them. According to wikipedia it was "the first widely-used P2P music sharing service", it made a huge impact on how people used the Web since it allowed music lovers to easily share MP3 format song files between each other. It was the first application in which the web offer for consumers was created by the own consumers and it had a different business model which was very innovative: free content posted by people instead of companies. According to Tim O'Reilly, "Network effects from user contributions are the key to market dominance in the Web 2.0 era."

Continuing wih the comparision with the Solar System, Tim O'Reilly says that we can visualize Web 2.0 as a set of principles and practices that "tie together a true solar system of sites" that at varying distance from that core have some or all of the characteristics (according to Gamero, MacManus & Porter and O'Reilly himself):

- Control over data.
- Innovative user that is now part of the development team.
- Collaborative and social orientation.
- Scattered processes.
- Collective tagging (folskonomy.)
- Leverages the "long tail" concept.
- Multi-device SW, ubiquous services.
- Light user interfaces.
- Writing semantic markup (transition to XML.)
- Services instead of applications.
- Remixing content.
- Shift to programming (separation of structure and style.)
- It is on a perpetual β state.
- Integrated applications create the service.
- Rich user experience.

Services classification

Services can be seen from five different angles according to:

- their objective (*why*),
- type of creator (*who*),
- the way they are organized (*how*),
- the type of data they have (what) and their posting method (where).

These dimensions follow the same criteria Fumero [2005] uses to classify blogs. They can be reused to classify Web 2.0 services in general.

Publishing Criteria	Description
Social	Drivers for a blog can be either personal or professional.
Purpose	Horizontal (generic) or vertical (specific.)
Page Structure	Hypertext blogs and conversational blogs.
Content	Text, multimedia (AudioBlogs, PhotoBlogs, VideoBlogs).
Posting	Content can be uploaded from a mobile or fixed device.

Overview of main web 2.0 services

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Only services in which the user is an active participant of the web can be considered to be Web 2.0: those are the ones in which the user both reads and writes. From 1996 till the early 2000's the Web was dominated by "those who could gain access to a web server and who had the will to learn web publishing" [Cavanaugh, 2002]. Nowadays users have gained control over the web and have created themselves new services which are not business oriented but whose goal is sharing content/information between each other, and a means to express themselves. Since these users are not experts in technology, one of the common features to all services is Ease of Use.

Wikis

Wikis date back to 1994-1995 although the wiki phenomenon happened in 2001 when Wikipedia was born [Schwall, 2003]. The concept of the wiki was created by Cunningham [2001], a software developer who was looking for a new documentation system that was better than traditional word processors by being able to trace a document's history, allowing revision and control in a user-friendly, automated way. The name wikis comes from the Hawaiian term "wiki-wiki" which means very fast or quick. Wiki websites inherit the same characteristics of a normal hypertext, i.e., it is based on web hypertext technology and on top of this, wikis allow each visitor the opportunity to add and edit pages by a mouse click [Schwall, 2003].

Wikis are open systems that anyone can modifiy which is why the Neutral Point of View (NPOV) was created to have a sort of politically correct filter on the content and there is no copyright issues since it is under the Free Documentation License, the GNU FDL [Schwall, 2003]. Wikis technology is internet based. Dynamic web pages produced by a web server using a wiki script which can be programmed in scripting programming languages such as Perl or PHP while data is stored in databases or in plain text files like XML [Schwall, 2003]. More advanced web technologies are not used on wikis. But there is some work going on with the InterWiki project to merge wikis with other technoogies such as RSS or blogs [Schwall, 2003]. There is also a lack of technology standarization which causes difficulties on migrating from one wiki platform to another, for storing data, and to create rules for markups and communication between them [Schwall, 2003]. Wikis structure is similar to traditional web pages; their main difference is who is creating and maintaining wiki pages, and how [Jaramillo, 2006].

Wikis are used in different manners, some visitors just read content sporadically, others search for updates on a regular basis and others add or edit texts [Schwall, 2003]. If a user wants to edit content on pages he/she can use the "Edit Page" link that is found on every wiki page. The one page that cannot be modified is the "Recent Changes" page which is a special wiki page produced in real time [Schwall, 2003]. Wikis allow users to create articles and papers in a collective way from any given web [Jaramillo, 2006]. The net structure is built by articles referring to other articles. To create a link to another article the name of the article needs to be inserted in the form of a WikiWord in order for the script to create a link, its format is a word written with either one capital letter inside or with square brackets around it. If the WikiWord does not exist, a new page is created, i.e. there can be no stand-alone pages [Schwall, 2003]. Their objective is to generate and organize content and knowledge [Jaramillo, 2006].

The largest existing wiki is the wikipedia with more than 152000 articles which is an evolution of Nupedia, another online encyclopedia [Schwall, 2003]. It is also the most famous one, being created and mantained by the volunteers around the globe. It has more than 2,2 million users and articles included in more than 150 languages. It is known as the mother of all wikis and it has been around for 5 years already. According to wikipedia there are 1 million wikis worldwide [Jaramillo, 2006] for any subject. This service is the best example of the Web 2.0 togetherness of collaboration between people.

Blogs

According to Fumero [2005], the Blog concept first appeared in 1993-94 and it was not extended until 1997-98 when David Winer's and Peter Merhlolz's blogs appeared. Blogs were initially named weblogs in 1997 by Jorn Barger, although they were later on named simply Blogs. 1999 constituted a turning point year in the blogsphere: the first web site dedicated to blogs appears, "Eaton Web Portal" , later on in July the first blog publishing web applications appears, "Pitas" and in August the first free publishing service appears, "Blogger" from Pyra Labs [Fumero, 2005].

A blog has two dimensions, the individual and the relational one [Estalella, 2005]. They are a link in the cyberspace between its creators and its readers and between the blog and other blogs. Wikipedia's definition of a blog is a "user generated website where entries are made in journal style and displayed in a reverse chronological order." They are a hierarchy of text, images, multimedia objects and data that are sorted chronologically and are supported by a content distribution system that is capable of supplying the author with functionality to distribute these contents as frequently as needed. [Fumero, 2005]. Entries are organized chronologically in reverse order creating a journal, and content is sindicated to facilitate its difussion [Van Der Henst, 2005]. Even though a blog might seem similar to other internet services such as chats or forums, it is essentially different because it has no fixed boundaries[Estalella, 2005]. The way information is organized, independently from its topic is what differentiates blogs. Bloggers share the format which provides a framework that is universal and this is what makes the blog special and different from traditional web content.

It is not what we write about what creates blogs but rather how we write on the Web: reverse chronological order, frequency, etc. This document structure is what enables the creation of social networks: the conversations, blog-rolling lists, etc [Hourihan, 2002].

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Technically web pages for Blogs all share the same template of basic functional elements: access to blog files, link indexes (blogroll) and a theme index [Fumero, 2005].

A blog entry typically consists of the following data according to wikipedia:

- Title, the main title, or headline of the post.
- Body, main content of the post.
- Permalink, the URL of the full, individual article.
- Post Date, date and time the post was published.

It might also include the following data: comments, categories/tags which are subjects, links to other sites which are trackbacks or pingbacks. Blogs are usually textual although some focus on photographs (photoblog), sketchblog, videos (vlog), or audio (podcasting), and are part of social media [wikipedia]. According to Technorati search engine there are more than 60 million blogs worldwide and there are over 175,000 new every day [Technoarti].

Even though blogs have a technological nature, they are used to create new social neworks and new types of cyber-diaries which have a sociological driver. Bloggers can publish instantaneuosly in a free scope any idea they wish [Sáez Vacas, 2005] which is increasing the dynamism in the web since it enables users to interact real-time to its content. In a way Blogs are returning communication power to people who on the bottom-line are actually the recipients of the message [Sáez Vacas, 2005].

Blikis

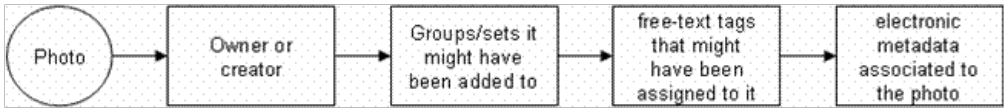
Blikis are hybrids combining the “best of both worlds” of Wikis and Blog services. According to wikipedia it looks more like a blog than a wiki (with reverse-chronological order, date-labeled, entries.) Blikis which are also called WikiLog, Wog, WikiWeblog, Wikiblog, or Bloki are blogs with wiki support which means that articles posted can be edited by users which are authorized or sometimes by anyone. The two services were combined in order to make the blogs more interactive since it employs the utility that wikis have of making connection between ideas, which turns blog posts into wiki articles maintaining the blog’s nature. The main difference between blogs and wikis is that the former works as a monologue that readers can add information to and the later is active and collaborative in the sense that users can modify it.

Flickr

Flickr is an online photo management and sharing blog application that was launched on 2004 [Answers.com]. It is a a photoblog which usually includes photos and associated user comments, Flickr is a cyber-social phenomenom that has driven users to share photos between a user community [Fumero, 2005].

The pictures that are posted on the blog can be shared within a closed group, individually or globally (this by creating groups). Pictures can be posted from any mobile or fixed device. It allows users to push their photos in many ways, on the Flickr website, in RSS feeds, by email, in other blogs by posting to outside, etc. Flickr has a smart way of organizing photos in a collaborative way by giving accesss to your photos to external people that are chosen by the users that can add comments, notes and tags to them. The metadata added is also searchable [Flickr.com].

Every other Flickr user is potentially a contact of every other user. Photos from contacts are automatically aggregated on the users' customized page for contacts. Every photo in Flickr can have anotations and tags added to them, by the person who uploaded them and by anyone else. Photos are shared between all users that can add metadata over them; this is what makes Flickr a social service. Moreover, photos can also be added to groups, users can join groups or create their own groups [Turnbull, 2005]. At Flickr an image is the basic unit for photo sharing that can be grouped into sets. Its database ensures that images are associated with different data.



The process of associating data to pictures is simple. In order to post photos in Flickr users must be members of the website. The essential building block of Flickr is individual photos that are uploaded via “photostream” and that are stored in a reversed chronological way, [Turnbull, 2005] since it is a blog service.

Flickr has two upload methods according to Turnbul [2005]:

1. basic upload that web pages usually have and
2. bookmarklet which allows to choose the photo and updates the whole page by just one click.

Technology behind Flickr is PHP, XML, Perl, ImageMagick, MySQL, Java, Apache Web Server 2 and Macromedia Flash according to one of the company’s developers, Carl Henderson [Answers.com]. Most views that are seen in Flickr (photostreams, contacts, group pools) have their own syndication feed in RSS and Atom formats which creates another way of viewing photos

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compatible with feed aggregators.

Del.icio.us It is a collective service that was launched in 2003 [wikipedia]. Delicious (the way the name is pronounced) and is defined, according to Wikipedia, as “a social bookmarking web service for storing, sharing, and discovering web bookmarks”. Its basic funtionalities are: Storage, Sharing and Discovering.

Detail of each functionality can be found in the service’s website http://www.delicious.com/about/.

Functionality	Description
Store	links of websites and later on access them from any computer on the web.
Share	links with other known users or with the del.icio.us community.
Discover	new things such as bookmarks that have been stored by other users

The way to use del.icio.us is by importing or adding bookmarks which can be done ubiquitously.

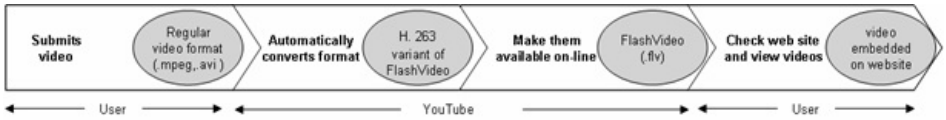
- Importing implies to upload bookmarks that are already stored in the web browser into del.icio.us. Adding is done by a single click when browsing a web page that the user wants to store. At the time the page is added, the user must fill in some information about it regarding: description of the site which is a link to it, notes (short summary) and tags that link to other sites with those topics. Other information is added by default to the bookmark: recommended tags, your networks, popular tags including total number of bookmarks, how many people saved them and when was it stored.
- Viewing bookmarks is done with a click on the bookmark functionality in the site’s page.
- Sharing bookmarks is done by giving the link to the users site inside del.icio.us or by checking the link rolls.
- Exploring is done in the site’s home page, which includes the most popular links and tags to watch

Users can tag each one of their bookmarks with numbers or keywords and a combined view of users bookmarks is available. The site has a "hotlist", "popular" and "recent" pages which makes it an effective tool to share information and to find out which are the latest trends. Everything that is posted is public by default, however, users can mark bookmarks (own and imported) as private. One of the uses of this service is as “linkrolls, tagrolls and network badges to display their links and information on their weblogs” [wikipedia]. Technology behind del.icio.us is a simple HTML interface, self-descriptive URLs,a REST API and RSS feeds for web syndication. Although the source code of the site is not available, user's own data are freely downloadable through the API in an XML or JSON format that can be exported to a standard browser bookmarks format [wikipedia].

YouTube

According to wikipedia, “YouTube is a popular free video sharing Web site which lets users upload, view, and share video clips.” The service was created in 2005 and on summer 2006 there were 100 million clips viewed every day and 65,000 new videos uploaded every 24hours [wikipedia]. Thanks to this service, the media content model has changed. It has now more to do with pull rather than push, users can “reach into the network and check out something the way we do in a library today” [Negroponte, 1996].

YouTube is very easy to use, all users need to do is upload their videos to the website in a very easy process according to wikipedia and YouTube’s web page,



Users can upload, tag and share videos globally. Videos are grouped by categories, timeframe, and top hits. YouTube has the following functionalities:

- Browse millions of videos uploaded by any user
- Find, join and create video groups to share with other users with similar interests
- Customize user experience by subscribing to member videos, saving favorites, and creating playlists.
- Integrate YouTube videos on other websites.
- Make videos public or private.

Video playback technology behind YouTube is Macromedia's FlashPlayer 7 and uses the Sorenson Spark H.263 video codec. The video quality is comparable to established playback technologies such as Windows Media Player, Apple’s Quicktime Player and Realplayer. For its visualization it requires Flash 7 plug-in (or higher) which is generally present on almost all Internet connected computers; it can also be freely downloaded and installed from Flash’s websiste [wikipedia].

mySpace

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The site was launched in 2003 [wikipedia]. According to the definition on the service's webpage, MySpace is an online community that lets users meet friends' friends. It creates a private community in which content can be shared, photos, journals and interests with network of friends and friends of friends. The site reported 60 million registered users on February 2006 [Silversein, 2006].

MySpace is a type of a community culture that makes the web a "medium of selective social interaction and symbolic belonging" [Castells, 2002]. Using MySpace is as simple as any other internet community, users register themselves by signing up and creating a profile on which they can describe themselves and upload their content for others to see. Profiles can also contain a blog [wikipedia] After signing up, users can invite friends to join their personal network or search the site to find their member friends and communicate with friends or friends' friends.

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