Ranking Techniques for Social Networking Sites based on Popularity

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Abstract:

Web contains large number of information in it. Extracting necessary information from the web becomes difficult task. Search engines help to retrieve information from the web. But the information retrieval by the search engine is not so efficient because it contains relevant and irrelevant information in it. So, ranking becomes an important task to be achieved. Nowadays, Social networking sites play an important role in the web. The influence of social networking sites affects the efficiency of information retrieval. Search Engine's Search results are positively affected by social signals such as tweets, facebook. In this paper, we present some efficient techniques for ranking social networking sites based on their popularity.

*Keywords***:** Social Networking; information retrieval; Search engine; Social signals.

1. Introduction:

The World Wide Web is an important data source for millions of people in the world. Obtaining information from the web is a challenging task. Search engines help the user to surf the web. When a user wants to find any information from the web, the user uses his favorite search engine, issues queries and clicks on the returned pages [Cho and Adams (2003)]. It is obvious that search results returned by the search engines are a mixture of relevant and irrelevant information. A user cannot read all web pages returned to the user's query, so the user gets help from search engines to focus on a small number of pages worth looking at.

Social networks are the developing sites in the web. The development of social sites affects the information retrieval efficiency of the Search engine. Social networking Sites is the social relations among people, who Shares interest and or activities. Users can upload pictures of themselves to their profiles, post blog entries for other users to read, search for other users with similar interests and compile and share list of contacts[Mercy Paul Selvan, Chandra Sekar, and Priya Dharshini (2012)].

There are so many Social networking sites available today. It is admitted by Bing and others that the Social signals affect the search engine's operation. In this paper, we propose some techniques to rank the Social Networking sites based on its popularity.

The structure of this paper is as follows. In section 2, we discuss some basic concepts like Social networking and 'Sharing' Criteria. In section 3, ranking techniques for Social networking sites are discussed. In section 4, we conclude this paper.

2. Social Networking and 'Sharing' Criteria:

2.1 Social Networking:

The tendency of people to come together and form groups is inherent in the structure of society;and the ways in which such groups take shape and evolve over time is a theme that runs through large parts of social science research [Coleman(1990)]. Social networking site is an online community which reflects social networks among people, who share interests or activities. There are so many Social networking sites in the web. Some networking sites like Facebook, Google+, and twitter are very popular   among people living World Wide. Fig 1 shows some of the social networking sites.

Fig 1: Social networking sites

 Fig 1 shows some social sites familiar to the public. The main role of social networking is to gather people and make them interact with each other and to share their ideas or activities via personal web pages. Most social network services are web based and provide means for users to interact over internet. Fig 1 shows the gathering of people by Social networking sites.

Fig 2: Gathering of people by Social Networking site

 Fig 2 shows the social site gathers people across the world. People are connected to each other friendly but not respective to any particular divisions. Social networking sites helps for both personal and business purpose. Social networking sites allow the users to share ideas, interest and to post the blog entries within their individual networks [Poorna Chandar, Mayank Sharma and Vijaya Saradhi (2011)]. These social networking sites helps in many ways like developing business by building the brand image of the company, to share exchanges in scientific knowledge, and

also act as a communication tool between teacher and students. It is true that posting messages is the main purpose of social networking sites. Downloading music, uploading music, posting photos, blogging are also considered as the main use of social networks and these utilities make the users in a Social network very interactive. Fig 3 shows the use of social networks.
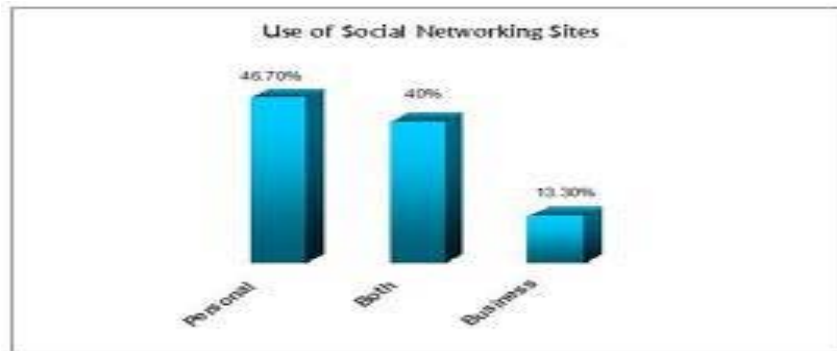

Fig 3: Use of Social Networking Sites

From the Figure 3, it is obvious that Social Networking sites help both the individual and also the business in many ways.

2.2 Sharing Criteria:

There are billions of web pages and blogs available in the web and they come with Sharing Criteria. Sharing Criteria is nothing but the Sharing Buttons. The web pages designed with the buttons such as Share This, tweet, Like, etc which helps the user to share the content of the web page in their favorite social sites. Let us briefly discuss some frequently used buttons.

2.2.1 Like button:

Over 350,000 sites were using the Like button[Gelles and David(2010)].These buttons are the feature of social networking sites which lets users indicate that they like the posted content, such as status updates, comments, photos, links shared by friends, and advertisements. It also enables participating websites to display a button which enables sharing the sites content with friends [Arrington and Michael (2010)].When a user clicks these buttons, the content appears in their friends' News Feeds. The button also displays the number of users that liked each piece of content, and may show a full or partial list of those users. These buttons also allows social networking sites owners to see how many users and which of their friends like the page. Fig 4 shows the Like button.

LIKE

Fig 4: Like Button

2.2.2 Share This Button:

This is one of the most designed buttons in the web page and it helps the user to share the content of the web page in their favorite social networking site. The Share This button is an all-in-one widget that lets people share any content

on the Web with friends. The widget can also keep an account of personal contacts so that users can send an e-mail, IM, or text message with favorite links to friends [Source: NET]. The button can be deployed on any site to track the sharing of content. Customized widgets are available for leading blog publisher sites including Blogger, TypePad and WordPress.

Fig 5: Share This Button

2.2.3 Google +:

Google+ integrates social services such as Google Profiles and Google Buzz, and introduces new services identified as Circles, Hangouts and Sparks. Google+ is available as a website and on mobile devices. Sources such as The New York Times have declared it Google's biggest attempt to rival the social network Facebook, which has over 800 million users.

The service 'Circles' enables users to organize contacts into groups for sharing across various Google products and services. Although other users can view a list of people in a user's collection of circles, they cannot view the names of those circles. The privacy settings also allow users to hide the users in their circles as well as who have them in their circle. Organization is done through a drag-and-drop interface. This system replaces the typical friend's list function used by sites such as Facebook. Since September 26, 2011 users can share circles; it's a one-time share, so if the creator of the circle updates the members, people's shared copies won't be updated.

Fig 6: Google +

3. Ranking Social Networks:

Nowadays search engines are changing and social media plays a huge part of that change. When we go to a search engine to find out interesting information, it's clear that social media is helping search engines deliver more immediacy and more relevant results. There are so many social networking sites available today. It is admitted by Google and Bing that signals such as tweets, Facebook positively affect the search results. Social media makes results even better. But at the same time it possesses a drawback that these signals cause traffic. However, it is acceptable that the social networks help the search system to improve the retrieval efficiency.

There are so many sites available today .It is important to rank them. We suggest some techniques by which the Social Networking Sites could be rated based on:

3.1 Number of Members:

When a social site is created and released in the web, people starts using it. If the site provides many special features and it is friendlier to the user, the site gets popularized and many other users also start following it. Each social networking site has hundreds or thousands of members and each member in the site forms friends of their interest. The increase in the number of members popularizes the social networking site and also increases the rank of the site.

3.2 Designer's Interest:

The designer who is designing the web page considers some sharing buttons like Google+ or facebook. From this it could be estimated that the buttons designed by the designer makes the user to share the web page in their favorite

social networking. The designer's design of a web page shows the familiarity of the particular social site and also it increases the rank of the particular social site.

3.3 Sharing Criteria:

Social networks produce an immense amount of data about what real people like enough to share with their friends. It is estimated that people share 30 billion pieces of content on Facebook and 5 billion tweets – about a quarter of which contain links to content - per month. There are so many social networks like Facebook, Orkut, Twitter, MySpace, etc present in the web. Nowadays the web page comes with many options to share the content with their favorite social networks.

Each web page could have many sharing buttons based on the design of the web page.. The web page which is shared by a particular social site is to be calculated so that it is easy to calculate how many users share the web page in the favorite social site and so we can find the popularity of the social site.

$$P(S) = \frac{n}{t}$$

Where P is the popularity of the Social networking site, S is the Social networking site, n is the no of times shared in a site, and t is the Total no of times a page shared.

4. Conclusion:

In this paper, we explained some techniques to find the popularity of the Social Networking site. It is admitted by Google and Bing that search results are positively affected by social signals such as tweets, facebook. We explained that based on the number of members in the site and also the design of the web page we could rank the sites. The web pages which are shared by the Social signals such as twitter, facebook, etc affect regular search results. It is obvious that sharing the web pages with social networking sites really improves the results.

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