The Future of Social Networking

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Abstract

Social networks offer a way for people around the world to communicate with each other. Users can share their information and meet new people with shared interests. These networks are currently very popular, having hundreds of millions of users. However, there are also problems and challenges that need to be addressed. In this paper, we will discuss what are the biggest challenges for social networks. We will also estimate the future of social networking, mostly based on the current situation and the latest innovations.

KEYWORDS: social networks, future, business, challenges, security, innovation

1 Introduction

The popularity of social networks has exploded in the past few years. There are several networks which currently have millions of users: Facebook, Myspace, Bebo, Flixster, Friendster, LinkedIn, and several others. It is estimated that currently at least 300 million people use social networks, and that number is still growing. [39]

Social networks have existed in one form or another throughout human history, between families and friends. The Internet expanded this networking even before the current social networks: e-mails, newsgroups and discussion forums on the Internet have formed networks around specific topics. They have not been officially classified as social networks as they are defined today, but in practice they work on the same principles as the current networks. [14]

The basic idea behind each of these networks is to connect people. These people usually share a common interest, but in some cases their aspiration is simply to meet new people. There are also social networks where the content of the site is the core of the service, for example on Youtube. However, this paper focuses on the social networks where interconnecting people is the most important object of the network.

The broad aim of this investigation is to explore the future of social networking. In Chapter 2 we will look at how social networks are turning into a business: what methods can be used to profit from them, and can this drive for profit impact negatively on the users? Then in Chapter 3 we will look into some challenges that need to be dealt with, including security issues and the fact that some social networks are becoming boring. Finally in Chapter 4, we will speculate on the evolution of social networks. This speculation is done on the basis of latest innovations, which will indicate the direction where social networking is going.

2 Social networking as a business

Social networking is a fast growing business. Different kinds of companies constantly strive to find new ways of making money from the network users. It has been estimated that the revenues generated by social networking services will be $965m in 2008, and rise to $2.4bn by 2012. Most of these revenues originate from advertising. Also many of the networks themselves have turned into valuable companies. A few of the network sites have been estimated to be worth hundreds of millions, or even billions of dollars. [39, 13]

2.1 Advertising

There is a lot of money in the business of advertising. Social networks have huge numbers of users, so they are a prime target for advertisers. However, it seems that advertising in a social network is not nearly as effective as the advertisers presumed it to be. Users do not generally trust the social networks enough to encourage them to buy products advertised on the sites. [9]

To combat this problem, the advertisers have transformed the way the adverts are presented to the users. One new form of advertising is to use product recommendations by the user's online friends. The thinking here is that people trust their friends a lot more than a website. Thus, if a user has used a product or service, he can recommend it to his online friends. But even this has turned out to be unsuccessful, because friends in social networks are not often friends in real life, and therefore they do not trust each other that much either. Another reason is that people simply do not like advertisements very much, and often completely ignore them. [9]

In addition to using friends as advertisers, the networks have also used adverts which are directed to specific users or user groups. This method tries to improve the traditional advertising, where the same adverts are delivered to everyone and most people are not interested in the product or service. When using individualized advertising, the user is targeted only with adverts that have a high probability of interesting especially him. Because the user has given his information to the site, the site can use that information to its advantage. This is done by first checking the interests of the user: hobbies, favourite music, recently seen movies, etc. Then with the help of the information, the user is targeted with adverts that would most likely interest him.

It seems that at the moment these individualized adverts are not that effective. One reason is that a lot of the information about the user can not be easily used to determine what kind of products he would be interested in. But as the algo-

rithms for user analysis improve, the user's information can be interpreted better. This could mean that in the future the adverts will be targeted more accurately to each user. [23]

The most recent idea in the advertising business is a social network called Yuwie. Basically it works like all other social networks, except it pays the users a small portion of its advertising revenues. When a user views pages on Yuwie or other users visit his pages on Yuwie, the user earns money. The user also earns money by recommending the site to his friends and getting them to register. The more friends register and the more page views they generate, the more money the user earns. [4]

People have reported that they have actually received their earned money from Yuwie. However, the whole scheme seems to be a bit uncertain to work in the long run. Most of the users will not earn that much, and joining a social network only to make a few bucks does not really seem like a good way to form strong friendships. However, from the advertiser's point of view Yuwie does a good job in getting potential customers relatively easy. In only a few months it has attracted over half a million users. It will be interesting to see how long can a site like this last, and who will actually profit from it. [30]

2.2   Extra services

At the moment social networks are free of charge to users. However, it is possible that in the future some extra services will be added for a small price. For example, services such as personalized radio, premium account or improved security control could be offered to people who are willing to pay for them. It is hard to estimate what percentage of users would actually pay for these services, because they are accustomed themselves to getting everything for free. Nevertheless, it is plausible that the site owners will at least try to implement chargeable services to see if there is a market for them. [20, 1]

Let's take the security control as an example service. As we will later discuss in Sec. 3.2, security is a very important issue in social networking. So there is definitely a need for a security control service that protects user's computer from malware and also user's private information. On the other hand, selling this kind of service is not an easy task. For a start, most people do not understand that their privacy even needs to be protected, until they find out that their private information has been exploited. Perhaps at first this security control service could be targeted at only those who care about their computer and privacy enough to pay for protecting them. After this initial stage, the experiences of those early users could be used to raise the level of awareness about security issues to other people also. [25]

F-Secure recently made an application for Facebook, to check that the user's antivirus programs are up to date and to scan for security holes. Although this application is currently free, in the future there might be other similar third party applications that would cost something to the user. [19]

Some social networking sites have already started offering a few extra features for a small fee. For example, Facebook offers their users the possibility to give "gifts" to each other through Facebook. In reality this gift is a small picture that will be shown on the receiver's profile, so it's not really that useful. Nevertheless, Facebook does charge one dollar for each sent gift. These gifts have been in use for a year, and people have actually spent millions of dollars on them. So if some users are willing to pay for this relatively useless service, they should be quite eager to pay for services that actually provide a real purpose. [29]

2.3   Social networking at work

Social networking during business hours is considered by some to motivate the employees and in some cases even help them to make important business contacts. On the other hand, social networks can cost a company money when employees spend their business hours on a social network site instead of doing their job. [37]

It is hard to say which of these two factors is more important. There is no clear answer to whether or not social networks should be used at work, and mostly it depends on the type of company and the need for making work contacts. In the near future, companies will have to make decisions based on these two factors: to either limit the use of social networks during business hours, or to embrace it as an important tool. [40]

Some companies have already made their decision on this issue. Many of them have decided to either limit or completely ban the use of social networks at work. They have blocked websites such as Facebook so they can not be accessed from the work place. Some companies have even threatened that using social networks at work might lead to getting fired. [31]

Although the idea behind banning these sites is good to some extent, the implementation of the idea hasn't been that successful. It has been researched that employers have actually overreacted in this issue, and banning the sites is not the best solution. In fact, banning the sites might even cause problems by breaking a good relation between the employer and the employee. [41]

So instead of deciding whether to ban the sites or to allow total freedom, perhaps a compromise in this issue could be the optimum solution. The use of social networks would be allowed, but only to a certain degree. The employer and the employee should decide together something that is acceptable to both of them. If the time spent on the sites clearly distracts the actual work, then it is time to cut down on the socializing.

If social networks are used for making business contacts, there are several networks that can be used for this purpose. Perhaps the two most important are LinkedIn and Facebook. LinkedIn is specially targeted for making business contacts. Facebook on the other hand was originally made for college students, but it is today also a popular place for business people, because of its huge amount of users. Both LinkedIn and Facebook are both good for looking for a new job and information about the job, but they can also help when looking for old business associates. In addition, Facebook is great tool for communicating within the work team, whereas LinkedIn is a good place to seek help for IT problems. [33]

3 Challenges in social networks

There are a lot of challenges that are already causing some social networks to work inefficiently. Eventually, these problems could lose the networks a lot of customers, or even force the site to shut down. It is important to understand what are the most important problems, so perhaps they can be resolved in the future.

3.1 Social networks are becoming boring

Studies show that social networks should serve a purpose. This means that there should be something that connects the users to each other. Usually this is a common interest such as employers meeting employees, old school friends reconnecting, or users with shared hobbies. [14]

The problem that some of the current networks have is that they do not have anything that truly connects the users. People are just adding other people to their friend list without knowing them or having anything in common. This kind of activity might work for a while, but eventually it is bound to fail. Having hundreds of unknown people as friends is not going to work, if they don't have something to share with each other. [22]

Of course, many of the current social networks have already realized that having shared interest is important. As a result of this, they have based their network on some specific idea. However, even for the networks that are currently extremely popular, it is important to constantly seek out ways of keeping the customers happy and connected to each other. Because the ideas that work in social networks today might not work that well in 5 or 10 years from now.

Let's take LinkedIn as an example. LinkedIn made their network to work as place for business and professional contacts. However, LinkedIn also has problems in keeping its customers interested. Many users try to add business contacts that are not connected to them in any way. This kind of behaviour leads to the exact same problems as in networks that serve a purpose. The only difference here is that the network actually has a purpose, but if it's not used properly, it won't work properly either. To combat this problem, there have been suggestions that people should follow a certain etiquette in the network. For example, one should only add friends or acquaintances that they have actually met or had some mutual business with. [11, 38]

3.2 Security issues

Security related issues are also big challenges. By this we mean mainly privacy issues, but also vulnerabilities that can occur in the networks. There has already been a lot of cases where a user's private information has been acquired from social networks. This information has been exploited in different ways, such as selling it to spammers or harassing the user. But the most dangerous issue has been identity theft. In Canada, Great Britain and United States especially there are millions of identity theft cases each year, leading to billions of dollars of losses. Although most of the identity thefts have been committed using traditional ways of stealing letters and bills from people's garbage, the amount of identity theft carried out with the help of social networks is clearly increasing. [15]

So how can these privacy issues, especially identity theft, be solved in the future? At least in the United States there are already services such as LifeLock and TrustedId which try to prevent identity theft, in return for a monthly fee. Basically these services monitor the usage of their customers account. For example every time the user's credit card is charged, the service makes sure that it was a legitimate charge and not a fraud. [27]

One problem with services like this is that people who give out their private information online probably won't even think about things like privacy and identity theft. They most likely would not pay to protect themselves from these threats that they are not aware of. Many of them allow anyone to see their profile consisting of their name, e-mail, birth date, home address, and dozens of other pieces of information that can be exploited. Others restrict their personal information to only their friends to see. However, even this is useless if they recklessly allow anyone to be their friend, as many people do. [34, 10]

Of course, one could ask that why not make it much more difficult for the criminals to steal identity? One example of the current situation is that the criminal can easily open a bank account using the stolen identity. Why not make it impossible to open a bank account using just a few basic pieces of information that can be quite easily acquired? That would be the best solution, but that is not in the hands of the social networks, or the users. So until identity theft is made very hard for the criminals, users just have to be very careful on what information they reveal about themselves. And what about the people who do not realize that their privacy is in danger? The least the sites could do, would be to start informing their customers better about the risks of releasing private information online. [18]

Some of the social networks do have decent privacy control options, so that users can choose what information will be shown to his friends or to everyone else. Nevertheless, these privacy controls need to be improved. Currently at least Facebook is in the process of improving its privacy control. Even if the privacy control is improved, there is still a problem that most people do not know or care about changing their privacy settings. For example, only 25 percent of Facebook users have actually used their privacy control options. This means that most people have default settings on, which often allow outsiders to see some or even all information about the user. [5, 8]

Besides leaking information to other users, social networks can also give or sell information to third parties such as advertisers. Usually it is written in the site's privacy policy if information can be shared to others. Sometimes the privacy policy does not tell whether or not giving information is allowed, or the document can be very unclear about this. In these cases it might impossible for the user to forbid the usage of his personal information. [5]

Besides privacy issues, there are also other security problems, for example malware and vulnerabilities. Malware such as viruses and trojans are not yet a big issue in social networks, but they are a potential threat in the future. Trojans can be used to gain access to people's computer, and

steal their passwords, credit card numbers, and once again also making identity theft possible.

On some sites, the user profiles can be even used to spread malware. An example case was in MySpace, where a trojan was downloaded on user's computer when trying to view the profile of a malicious user. Studies show that most people download files from other peoples profiles or web pages in social networks. Therefore, an attacker doesn't necessarily even need to exploit a vulnerability to force people to download a virus or trojan. He can just put a malware file on his profile and disguise it as some kind of interesting application, and people will download it of their own choice. [26, 32, 34]

4   Changes, trends and innovations

The social networks we discuss in this paper are only a few years old. Even in this short period of time, they have evolved quite a lot. For example, they have adjusted to the requirements of the users when needed. However, these networks are not nearly ready yet. Social networks are still evolving a lot.

In addition to the issues that we will discuss in this chapter, there will most likely be entirely new inventions in the future that cannot be predicted beforehand. It is possible that there will be groundbreaking innovations which will change the way social networks work, and perhaps increase the popularity and amount of users even more. On the other hand, it is also possible that social networks are just a passing trend, and their popularity will slowly fade away. In this chapter we will evaluate the latest trends to demonstrate some of the things that are becoming popular lately or in the near future.

4.1   Mobile phones

A lot of people use social networks very actively. However, they can not access the networks when there is no computer with Internet connection available. A solution for this problem is to use mobile phones for connecting to social networks. This gives users a chance to access social networks anywhere. This is especially important in Asia where most of the Internet connections are established with mobile phones. [36]

In addition, the use of mobile phones could also offer some interesting new features for the social network users. For example with the help of GPS, a tracking service could show the users where their friends are. In addition, for users who want to use mobile phones without Internet connection, some simple SMS services could be provided. For example, the site could send a text message to the user to inform about upcoming events, or the user could send a text message to the site for his friends to see. [36, 6]

Existing social networks have recently realized the importance of having mobile access to their service. For example, LinkedIn made a lighter version of their site for mobile users. Also new services have been established only for the purpose of mobile social networking. For example, a new social network called Itsmy is built only for mobile phones. It already has over a million users, so clearly social networking using mobile phones could become very popular in the future. [16, 36]

4.2   Portal sites

Some of the biggest portals such as Yahoo, AOL and Google are an important part of the social networking. They provide services such as web-based e-mail and instant messaging. These services help people to start using social networks and manage their usage. In the future, these portals might become even a bigger factor in social networking. For example, these portals could implement new features to make it even easier to access social networks through the them. [17, 35]

Some of the portals could even form their own social networks, and become very popular with their huge userbase. In fact, Google and Yahoo are planning on extending their current services (iGoogle and MyYahoo) to social networking. These services already have millions of users, and connections between those users. Therefore implementing a social network should be easier using those existing relationships, instead of starting everything from scratch. [17, 35]

Of course, it is not guaranteed that a portal could easily set up a social network and become a huge success. Many people might need some reason to change from their current social network to a new one. Therefore, another possibility is that some of the current social networks will try to transform into portal sites themselves, while still keeping their main focus on the social networking. They would already have the users on the site, and if they succeed in making a good portal site, they would attract even more users. [21]

4.3   Implicit social networks

Current social networks work in an explicit way. This means that user needs to manually search and add people to their friend list. User also needs to actively add information about everything he wants people to know about his activities. This kind of manual adding is in principle quite simple, but it can consume a lot of the user's time. [28, 6]

A totally new way would be to make an implicit social network. It would work so that the user would not need to manually add information about himself. Instead, the site would add the necessary information automatically, based on the actions of the user. For example, if the user e-mails or calls someone online several times, then the person he is contacting could be classified as a friend. Or if the user spends money buying music online, and listens to the music, then that particular music could be added to his list of interests for everyone to see. [28, 6]

Perhaps the most likely implementation will be a combination of an explicit and implicit network. This would mean that the user adds part of his information by himself, and other parts are filled in automatically by the site, based on the user's actions. Currently there are no implicit social networks, but they are being currently planned and have a good chance of becoming reality in the future. [6]

4.4   Tribler

One way to make use of social networking, is to combine it with another service. This is exactly what has been done with an application called Tribler. It is a peer to peer file sharing system, where users also form social networks with each other. This clearly differs from the way that peer to

peer networks normally work, where users are anonymous to each other and they are not really even interested who the other users in the network are. In Tribler the users can have friends, who usually have interest in same kind of content, for example similar interest in movies, tv-series and music. [24, 3]

One upside in Tribler is that users can discuss about their common interests in the same network where they share the content. This way they do not need to use two applications, one for sharing and one for chatting. Another thing is that having these smaller social networks inside a large network can actually increase the performance of the whole network. For example Tribler is intended to make friends share content between each other more fairly, and friends can be used to assist download files faster. We won't go in to details of this, but studies show that connections between friends can help to increase the efficiency of both finding and sharing files. [24, 3]

One problem with an application like Tribler is that making users known to each other is not only a good thing. For example, people might not want to use Tribler for sharing copyrighted files because they want to remain anonymous when doing this. However, Tribler can be used for sharing legal files without a fear. In the future we could very well see more applications like Tribler, where a social network is combined into another service.

4.5   OpenSocial

Many users are members in more than one social network. This also means they have to login to each network they want to use, and manage the discussions in each of those networks separately. In order to make it easier for users to control the networks they use, the networks need to be connected somehow. One solution for this problem is OpenSocial, which provides an interface for social networks. Using this interface, different networks are able to connect their users and applications together. [7]

OpenSocial was implemented by Google, and it was released in the end of 2007. Examples of networks that have implemented the use of OpenSocial are MySpace, Friendster and LinkedIn. Basically using social networks through OpenSocial works like using any common social network, such as Facebook. The difference is that in Facebook users communicate only with other Facebook users, and run applications available only in Facebook. In OpenSocial the users are also able to contact people from other networks. [7]

Let's take an example of a user who is a member of LinkedIn (which works with OpenSocial). When using LinkedIn the user can communicate with users of that network as normal. In addition to this, the user can also communicate with users from all the other networks that work with OpenSocial. This helps the user save a lot of time by only needing to use one interface that uses OpenSocial to connect to the other networks.

OpenSocial is just a few months old, it only works with some networks, and it does have some problems that need to be fixed. However, it is an important first step in binding social networks together. It will be interesting to see how this co-operation between networks will advance in the future.

There will probably be more services similar to OpenSocial, connecting even more networks together. Will eventually most of the networks be connected to each other in some way? Probably not, because there is still a need for having closed communities that are focused on specific areas, and do not want to expand outside their own network. Also, some of the social networks might not want to share their user information to their competitors.

4.6   Ning

Although there are a lot of different social networks, there is still definitely a need for more of them. Many people want to use a network that is specialized in a specific topic. The solution to this problem is a platform called Ning. Using the Ning platform, it is now possible for the users to create their own social network. The founder of a new network can control the settings of the network. For example the network can be set public so that everyone can see the pages, or private so that only the members of the particular network can see the pages. [2]

This kind of system gives users a lot of freedom in their own networks. Although there are some modifications that can be done in regular networks, Ning gives much more choices to users to customize their own network. Of course, these user networks still work on top of the Ning platform. They are not independent and they do receive adverts through Ning. However, these user networks give something to think about to the large social networks: if they do not respect the users and give them what they want, the users can easily leave and build their own network with the features they want. [2]

The idea of Ning is quite interesting, especially in comparison to the OpenSocial. Ning splits networks into smaller networks, and OpenSocial connects networks to each other. In a way these ideas might sound contradictory, but they are not. Even Ning is part of the OpenSocial, so it is also possible for the people using networks under Ning platform, to connect to other networks. [12]

5   Conclusion

It is almost impossible to evaluate the future needs of the users, or to predict new innovations that nobody has yet even thought of. Instead of making difficult predictions about the future, we made estimations based on topics that are currently important and interesting. These topics are most likely to be even more significant in the future. This is especially true for business opportunities such as advertisement. It will probably be even more important in the future when the network owners discover better ways to get money from the users. Therefore those who do come up with the great new innovations, are most likely to be future millionaires.

We stated that there are challenges that need to be looked into, in order to prevent social networks from dying. Some of these challenges have already caused problems to the networks, for example security issues. In the future these problems might get even worse. We also presented a few of the latest applications that have been implemented in social networks. These inventions show that social networks are con-

stantly developing. The future of social networking is still open, and the possibilities are endless.

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