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**The economics of social networks:
The winner takes it all?**

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The economics of social networks: The winner takes it all?¹

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Abstract

We look at the economics of social networks. Key economic features of these are positive network effects, giving rise to positive feedback effects that may lead to a winner-takes-it-all market. Social networks' revenues are collected from online advertising; social networks thus constitute two-sided markets. Two-sided markets with ad-financing enhance the winner-takes-it-all effect. However, for many young people, social networks are parts of their image. They may want to be where the right people are, not where all people are. Social networks are virtual communities, places to meet other people. As for offline communities, e.g., nightclubs, it may be important to be a part of a new and trendy community. This may give rise to negative network effects – so-called snob effects; a consumer wants an exclusive or unique product or service. Such a night-club-effect opposes the positive network effects, and may thus limit the winner-takes-it all feature of social networks, suggesting that a 'Facebook-monopoly' is not necessarily the most likely scenario.

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The winner takes it all, the loser standing small

ABBA

Introduction

During March 2010, Facebook has grown to become number one in the U.S. regarding web visits, now also bigger than Google.² Manager of international growth in Facebook, Javier Oliván, look forward to ‘Facebook’s next step: attaining world dominance’.³ We discuss some economic features that may prevent social networks as Facebook from growing into monopoly.

The take-off of international social network services such as Facebook, MySpace, and Twitter, as well as more regional social network services as Blink (Norway), Nettby (Norway), Lunarstorm (Sweden) and Playahead (Sweden), have been given a lot of attention. Conventional media companies, in particular newspapers (online and printed), have considered social networks as a new type of rival. Young people use their time on social networks rather than to read newspapers. In turn, advertisers go where young people go.

The most important activity on a social network is communication among the members through sharing of content, comments, and messaging. This implies that social networking has economic features analogous to communication services such as text-messaging, instant messaging and telephony. The value of being a member of a social network depends on the number of other people that are using the same social network service. The important feature is that users are suppliers of content as well as consumers of content. This is commonly named as *network effects*. The challenge is then to ensure that a critical mass of users connect to the network. The presence of network effects implies that positive feedback effects are working for the largest network; the strong becomes stronger and the weak becomes weaker. This, in turn, implies that the winner-takes-it-all.

Social networks do not charge their members, and one reason may obviously be that social networks still are in their infancy. However, the majority of the revenues for social networks are obtained from advertising (the exception is dating services and niche products that charge the users). Hence, social networks have the same business model as online newspapers. Both

² Up until now Google has held the number one spot. However, Facebook is now responsible for 7.07 percent of web visits in the US, whereas Google is now responsible for approximately 7.03 percent of US web visits <http://www.product-reviews.net/2010/03/17/google-vs-facebook-facebook-more-visited-in-the-us/>.

³ Dagens Näringsliv, March 6, 2010, p.45.

online newspapers and social networks may be described as two-sided platforms; the providers need to ensure that both users and advertisers are on board. On the one side, the advertisers benefit from the presence of users of social networks. The more users, the higher is advertisers' willingness to pay for ads. On the other side, users of social network services may dislike the presence of ads. This feature of a two-sided market is found in other advertising financed media markets such as television and newspapers, and indicates that most social networks will not charge their members even in a matured market. Since advertisers prefer a large number of members, this may further strengthen the winner-takes-all characteristic.

There are also some features that may prevent a Facebook-monopoly where the winner takes it all. Social networks have become a place to meet; an online café, a nightclub or a reunion of old class-mates. This makes social networks different from communication services like telephony, text-messaging, and e-mail. As for an offline café or nightclub, we send a signal about image and personality through where we go. This is particularly pronounced by young people that use their membership and activity on social networks as a signal of their personality. We want to go where people we want to meet are, but not necessarily where everyone is.

People are not very loyal towards a nightclub, in particular youngsters. When the trendsetters move from a nightclub, other people follow. On some social networks we find trendsetters. They are the most active users, and when they leave other users follow. This is often described as snob effects; a negative network effect. Innovators want to be the first to use a new and trendy club; offline as well as online. Such negative network effects might prevent that a Facebook-monopoly is maintained for a long period. Furthermore, the two-sided market feature, where memberships are offered for free to attract users (and thereby advertisers) make it costless for users to be active at more than one social network (multi-homing).

A recent study by Ofcom (2008) finds that even though Facebook is still growing, they lose members both in absolute and relative numbers in the age group 18-24. Thus, the growth comes through new but older members. The question is: How can a social network keep its number one position without losing its trendsetters? We discuss three Scandinavian cases, and show that there is a significant challenge related to maintaining success for social networks. Swedish Playahead, went from a dominant position and lost their market in less than two years, closing down January 2010. The Swedish number one Lunarstorm has through

acquisition of Bilddagboken and repackaging been able to keep its dominant position. In Norway, Blink was the first social network that achieved a critical mass of users. A few years later, Nettby took over the number one position after a surprisingly quick failure of the previous number one – Blink. Below we discuss that the night-club effect may be one explanation for this development. If this effect is significant in general, we do not expect that a permanent Facebook-monopoly will arise. It will make it hard to maintain dominance.

The rest of the article is organized as follows. First, we give a brief overview over social network services. Second, we discuss the economics of social network services. Third we discuss the Scandinavian cases mentioned above. Finally, we conclude with management recommendations.

Social network services – a brief overview⁴

Social networks create virtual communities that enable the members to communicate and share content. Typically each user creates a profile, and the main activity is different types of communication with the other members. In most social networks the users must confirm that they are ‘friends’ before they are linked together. Communication is the most popular activity in social networks (Ofcom, 2008), and social networks enable the users to share different types of content, where members act both as suppliers and consumers of content.

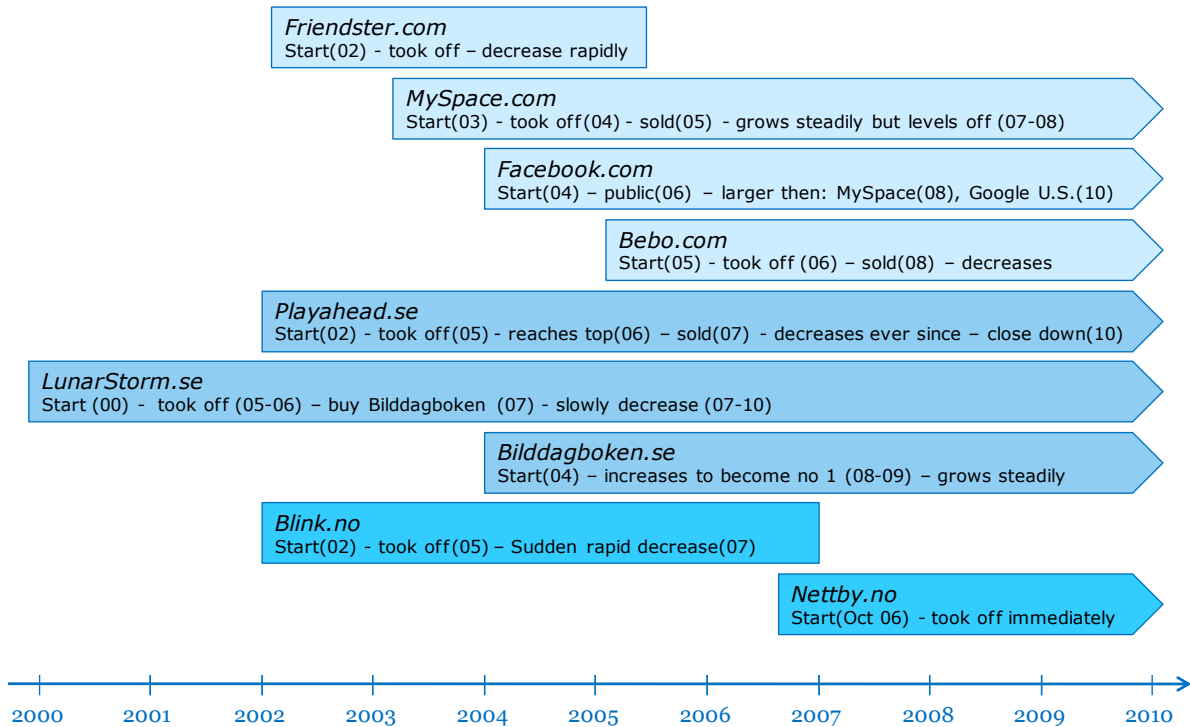
Facebook, Bebo, Twitter and MySpace are social networks used almost worldwide. According to Boyd and Ellison (2007, p. 4) ‘... *Friendster, MySpace, and Facebook, [are the] three key SNSs that shaped the business, cultural, and research landscape.*’ In addition to these multinational social networks, we have seen that domestic social networks have achieved significant success. Blink and Nettby are examples of social networks that have achieved significant success in the Norwegian market; mainly towards young people. In Sweden LunarStorm, Bilddagboken and Playahead are social networks that have been successful for a period. In Figure 1 below we show the evolvement of the big multinational social networks as well as the domestic social networks in Norway and Sweden.

Whereas Friendster was the first real large international social network to take off as early as in 2003, they failed to accommodate continued growth. Their failure came from not investing in new capacity and instead being forced to restrict their core users’ access and

⁴ For more comprehensive overviews; see Storsul et al (2008) and Ofcom (2008).

expressiveness. After 2-3 years they lost most of their users in the U.S. (Boyd and Ellison, 2007).⁵

Figure 1 The development of social networks.



MySpace is still very large but is now number two as compared to Facebook that by March 2010 according to themselves has grown to 400 million members. Bebo was launched in 2005 and took off already during 2006. Early 2008 AOL acquired Bebo for \$850 million. Bebo was then the second largest social network in the U.K. (its largest market) after Facebook having 40 million users.⁶

The Swedish Lunarstorm was actually among the first social networks to be started and reached its peak in 2005/2006. In 2007 they bought Bilddagboken and during the next two years they ‘transferred’ their customer base to this new product, that as of 2010 together with

⁵ For instance, they removed so-called ‘fakesters’, profiles of known artists that regular users made up to improve on their own profiles popularity. These fakesters grew to become immensely popular and when Friendster decided to remove these, their popularity went down drastically. They also removed real profiles with ‘unrealistic pictures’. All this censoring was not well received by the users (Boyd og Ellison, 2007).

⁶ See: <http://techcrunch.com/2008/03/13/aol-buys-bebo-for-750-million/>

Facebook dominates the Swedish market. Playahead was the large number two network in Sweden by 2005 but has since fallen to become very small and finally closed down in January 2010. In Norway Blink was the first social network to attain national dominance. By 2005 they had grown to outperform all other competitors by a large distance. However, a very strange fall in users took place during 2007 where it seems as the users moved into the new national social network Nettby in large numbers. This change in national dominance will be discussed more later, but we note two interesting features from Norway. To our knowledge (i) Blink's sudden fall in users is not seen in any other comparable network and (ii) Nettby is the only social network that did not go through a relatively long start-up period with gradual growth until critical size is reached and continued growth ensured through positive network effects.

Social networks currently do not charge users for membership. The business model used by most commercial social networks is to offer membership for free (no "cover charge") and revenues are collected from online advertising. If a social network charges users, the number of users will fall. First, this would reduce users' value, since the main activity is communication with other members. Second, since social networks sell advertising on their side, they are seeking a large number of members in order to be more attractive for advertisers. The exception from this business model is primarily social networks providing online dating services (such as Match). Online dating networks usually require an access fee. The simple explanation is probably that consumers' willingness to pay is higher for having a date than for having contact with former classmates.

As emphasized above, members of social networks are both suppliers and consumers of content. They are, however, heterogeneous when it comes to the amount of content they supply. Bughin (2007) shows that 5 to 10% of the users produce as much as 50% of the content. In several social networks we have super-users that have a role as trendsetters and moderators, and they obviously play an important role for whether a social network becomes a success or not. For the Norwegian social network Blink the 2% most popular profiles received 36.2% of all visits. Light users of social networks follow where the super-users go. The super-users would have a large impact on the other users' behavior. We also observe that social networks, in particular social network for teenagers, try to make super-users more loyal by giving them a more official role as (unpaid) moderators.

The economics of social network services

We discuss why size matters for social network services. In economic theory it is common to distinguish between increasing returns on the supply side and on the demand side, as illustrated in Figure 2.⁷

	Scale	Scope
Supply side	Decreasing average costs	Gains from joint production
Demand side	Network effects	Complementarities

Figure 2: Increasing returns on the supply and demand side.

There are *economies of scale on the supply side* if the average costs fall when each single product or service is produced in large volumes. There is little doubt that the economies of scale are significant for digital content and digital communication services in general, but this feature is probably not a significant obstacle for an entrant in the market for social networks.

Likewise, there are *economies of scope on the supply side* if it is cost efficient to produce several different products or services within one and the same firm. For social network services we believe that the potential for supply side economies of scope is limited.

We thus concentrate on demand side effects; complementarities and network effects. Thereafter, we describe why we expect that social networks will be offered for free also in a matured market. The reason is that social networks are so-called two-sided platforms.

Complementarities

Economies of scope on the demand side are commonly described by the term complementarities. Two goods or events are complements if they mutually reinforce each other. If increased sales of component A increases the sales of component B, which in turn increases the sales of component A, these two goods are complements. For our purpose we can say that two goods are complements if a price reduction or a quality improvement of one of them increases the demand for both goods. A lower price on the Playstation 3 (PS3) consol, for instance, is likely to stimulate sales of PS3 games, and vice versa.

A question is then whether an online newspaper and a social network are complements? An interesting feature of the Norwegian market for social network services is that two of the most successful local social networks, Blink and Nettby, are developed by media companies;

⁷ Shapiro and Varian (1998) offer a comprehensive introduction with a large number of applications.

Dagbladet and VG, respectively. Dagbladet and VG run the two largest Norwegian online newspapers, dagbladet.no and vg.no.

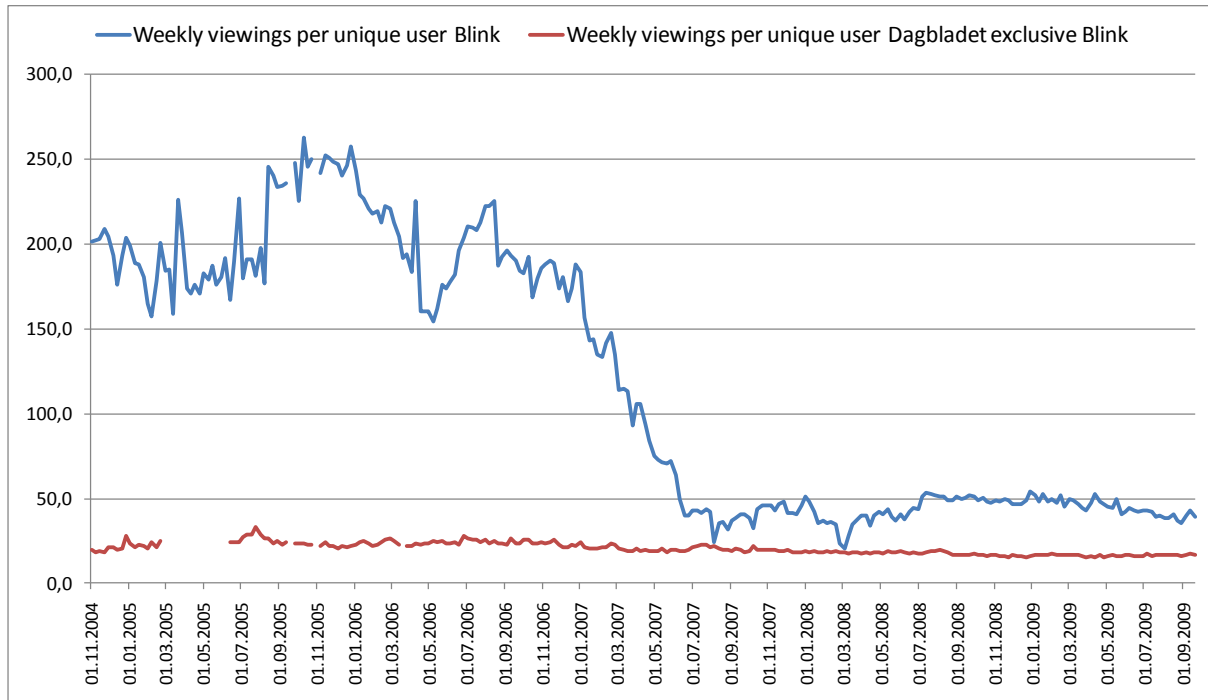
What is particular in Norway and Sweden is furthermore that newspapers have very strong online positions. In Norway VG.no had 3.7 million unique weekly visitors by the end of 2009, whereas the number two (MSN) had 2.9. In Sweden Aftonbladet (joint ownership with VG) has a strong number 2 position with 4.9 million weekly visitors.⁸ Having newspapers as the largest online sites is unique for Sweden and Norway, this is not seen in any other country.

It has been argued that the social networks Blink and Nettby have had an important impact on the traffic on the online newspapers dagbladet.no and vg.no, respectively. However, it seems like the reason for this is that the official traffic (the number of views) on the online newspaper, dagbladet.no and vg.no, incorporates the number of views on social networks, Blink and Nettby. We have undertaken an analysis where we separate the traffic on the social network Blink from the traffic on the newspaper Dagbladet. The analysis shows that the increase in the traffic on Dagbladet's social network Blink did not increase the number of readers on Dagbladet's online newspaper. In the figure below we illustrate the number of weekly views per unique user of dagbladet.no and Blink.

We note the following features. The traffic on dagbladet.no is quite stable in this period, and the increase in traffic on the social network Blink has no statistically significant impact on the online newspaper dagbladet.no. Moreover, we note that the traffic volume on the social network Blink is significantly larger than the volume on the online newspaper dagbladet.no. While an average user of the online newspaper has 20-30 views per week, users of the social network Blink had 250 views per week. This corresponds to findings from surveys (see e.g. Storsul et al, 2008).

⁸ TNS Gallup and KIA Index, week 50, 2009.

Figure 3 Weekly viewings per unique user for dagbladet.no (ex. Blink) and Blink from 2004 to 2009. (Source: Dagbladet and TNS Metrix)



Both Dagbladet and VG have argued that their online newspapers have been important in order to recruit users to their social networks. While advertising in online newspapers obviously may be achieved by social networks without cross-ownership with media companies, we observe that both Dagbladet and VG have given their own social networks huge attention in their online and printed newspapers.

A further and stronger argument for these newspapers to run social networks is to obtain the number one position. What we observe is that both newspapers only make total viewing numbers (social network plus newspaper) public on a weekly basis. When Blink was dominating, Dagbladet had the number one position in Norway. Now VG including the social network, Nettby, is far larger than Dagbladet. However if disregard the social network viewings, the relative positions of the newspapers are much more equal. The number one position seems to be very attractive when it comes to attracting advertising.

In July 2005, News Corporation (owned by Robert Murdoch) acquired Myspace for 580 millions USD. News Corporation owns Fox Broadcasting and several other media companies, and the core ambition with the acquisition was to achieve economies of scope between social

network services and media content. However, so far News Corporation has had difficulties in achieving these efficiency gains.

Network effects

Positive network effects

In this section we will focus on economies of scale on the demand side, which is placed at the lower left corner of Figure 2. This kind of increasing returns is commonly named as *network effects*, and takes place when the unit value of a product or a system is increasing in the number of users.

It is common to distinguish between direct and indirect network effects. For instance, we have direct network effects between owners of telephones; the more people that have installed a telephone, the greater its value. An example of indirect network effects; a large number of PS3 users imply that there will be a large demand for PS3 compatible games. This in turn tends to generate a large variety of PS3-games, which increases the user value of the PS3 consol. For both direct and indirect network effects, market size – the number of users – increase the value (and the willingness to pay) for being connected to the network.

A social network constitutes a communication platform for sharing of content and direct communication, and is thus a network service like telephony, text messaging, instant messaging or e-mail, where it is reasonable to assume that the value for each user increases in the number of other users. Other things equal, the first few users that possibly connect to the network have a low willingness to pay. The reason for this is simply that they have few people to communicate with. However, users' willingness to pay for network access increases as more users have access to the network. The challenge is then to ensure that a critical mass of users connect to the network. When a critical mass of users is achieved, we typically observe a steep increase in users and usage. Each user that enters the network imposes a positive externality since she increases the value of the system.

Over the last hundred years a large number of network systems have apparently reached a critical mass and become successful. Examples of this are conventional telephones, fax machines, and – more recently – text messaging, e-mail, instant messaging and social network services. However, a number of other services have experienced a different destiny, and not reached a critical mass. These services are for obvious reasons less well known. The picture

telephone is one example of a service that some industrialists predicted would be owned by the common man and woman, but that instead suffered a silent death (see Rohlfs, 2001).

How significant are network effects for social network services? Communication is an important activity within social networks (Ofcom, 2008), and the number of users is crucial for the individual value of being a member of a given social network. Hence, we have direct network effects. In addition to direct communication the social networks give the users the ability to post different types of content, which give rise to indirect network effects. Users of social networks are heterogeneous when it comes to the amount of content they post. So-called moderators or super-users deliver the majority of the content. As emphasized above, these super-users are essential for a social network. If super-users leave a social network, the other users will probably follow soon.

Compatibility

This leads us to an important question for network services; the degree of compatibility between networks. Compatibility refers to the quality (and price) for communication between networks.⁹ A high degree of compatibility implies that a user of network A may communicate with users of network B with the same quality level (and price) as she can communicate with other users of network A. One communication network where we observe high degree of compatibility is text-messaging. The price and quality of a text message has usually not depended on which network the receiver is connected to. If we consider mobile voice calls, the quality likewise does not depend on whether the person you call is connected to the same operator or the rival, but in the majority of European countries the mobile charges are higher for off-net than on-net calls. The latter may be seen as an imperfect degree of compatibility.

For social network services the degree of compatibility is typically low; direct communication between users of social network A and social network B is not possible. Low degree of compatibility does, all other things equal, imply that it becomes harder to achieve a critical mass of users. The network effects imply that the users' utility is increasing in the number of other users and the degree of compatibility between networks. The combination of low degree of compatibility and network effects will, all other things equal, make the market tippy. There

⁹ Compatibility is named interconnection within telecommunications, interoperability regarding software and interlinking within the airline markets. See discussion by Rohlfs (2001).

are positive feedback effects; the strong becomes stronger and the weak becomes weaker. The positive feedback mechanism may thus lead to a winner-takes-it-all market. Though this is certainly an extreme outcome, we often observe that the system that captures the larger share of the market becomes highly profitable.

Negative network effects – snob effects

Until now we have focused on positive network effects; the more users, the better. For many young people, social networks are parts of their image. They may want to be where the right people are, not where all people are. Social networks are virtual communities, places to meet other people. As for offline communities, it may be important to be a part of a new and trendy community. This may give rise to negative network effects – so-called *snob effects*; a consumer wants an exclusive or unique product.

The explanation may be the same as, for instance, nightclubs. For a new and trendy nightclub that achieves a critical mass of users, everyone wants to be there. After a (short) period, the trendsetters do not want to be where everyone else is, and they move on to the next *hot* club. It seems like a lot of social networks have experienced this night-club-effect. If we consider the development in Figure 1 above, we notice that a period after take-off some members start to leave the network. Snob effects may be one explanation, and this may limit the demand side economies of scale for social networks. In particular, this is the case for youth. How cool is Facebook when a teenager receives a friend request from grandmother? Actually we now see younger people creating two profiles on Facebook, one with their real name used for family and one with a fake name but with a ‘real’ content used for friends. Storsul et al (2008) and Ofcom (2008) accentuate that youngsters are also less loyal towards a social network than older people. Even multinational social networks like MySpace, Bebo, and Facebook, despite growth, have experienced a reduction in the number of users in the group between 18 and 24 (Ofcom, 2008).

The role of the super-users may be crucial. First, they are active users with a high level of views. Second, they provide most of the content, which in turn leads to views from other users. As mentioned earlier, a small percentage of users may receive most of the visits. For Blink, 2% of the users received 36.2% of the visits. As most advertising is sold on a per view basis, this makes super-users very valuable to social networks. An informal survey of 125 advertising prices for placements on Norwegian web-sites showed that only per-view prices were offered in 91 (or 73 %) of the advertising placements. In the remaining 34 cases (or 27

%) both per-view and per-click prices were offered for the same advertising placement. This suggests that per-view is the dominant pricing method.¹⁰

Suppose that the super-users that offer the majority of the content want to be exclusive in the way that they do not wish to be where everyone is. Then super-users would be the first to leave a social network that becomes a success. Light users would follow, since super-users provide the majority of the content. All other things equal, this would increase the threat on established social networks from entrants. In contrast, if a social network succeed in making the super-users to loyal moderators it may be very difficult for entrants to achieve a critical mass of members. A clientele of loyal super-user would be extremely valuable for a social network.

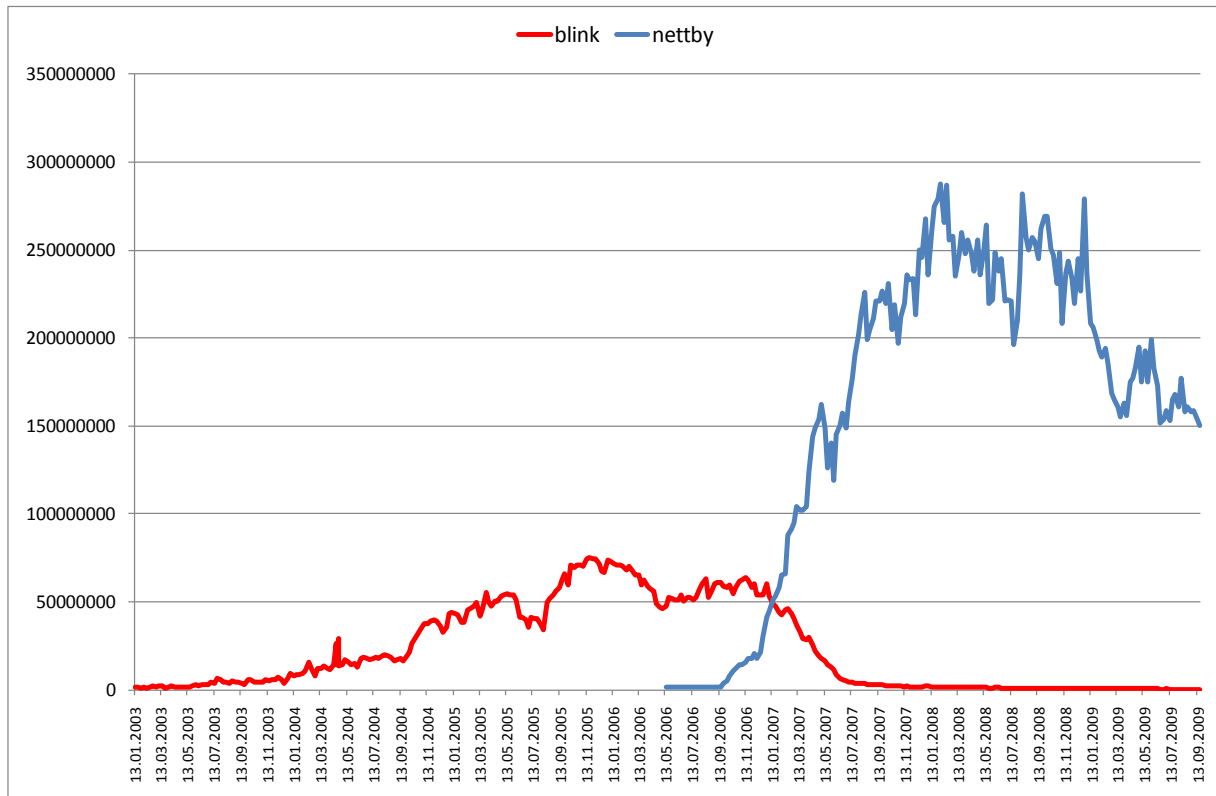
If a new social network succeeds in ‘stealing’ the super-users from an established social network, we may expect a rapid transfer of users from an established social network to an entrant. The symptoms of this for the established network would most likely be an initial drop in views per user as significant amounts of content generation would stop as super-users migrated to the rival network. A simultaneous small drop in unique log-ins might be expected to accompany this effect as the super-users (few in numbers, but vital in content generations) no longer would be logging in at the established network. The ripple effect would subsequently be a massive loss of lighter users and further drop in views per user as these also migrate to the rival network.

An interesting illustration is the fight between the two Norwegian social networks Blink and Nettby; both with teenagers as the target group. Blink was the leading social network in Norway for teenagers in the infancy of social networking; see Figure 1 above.

In Figure 4, we illustrate the development in views for Blink (red) and Nettby (blue). As expected for a network service, and as observed for other social networks, as well, Blink used quite some time before a critical mass was achieved. In contrast, Nettby almost immediately became a success and achieved a critical mass of users. This distinguishes Nettby from the development observed for other social networks (even a success like Facebook used several years before a critical mass of users was achieved). What seemingly happened was that Blink users abruptly switched to Nettby. From Figure 3 we also see that views per unique

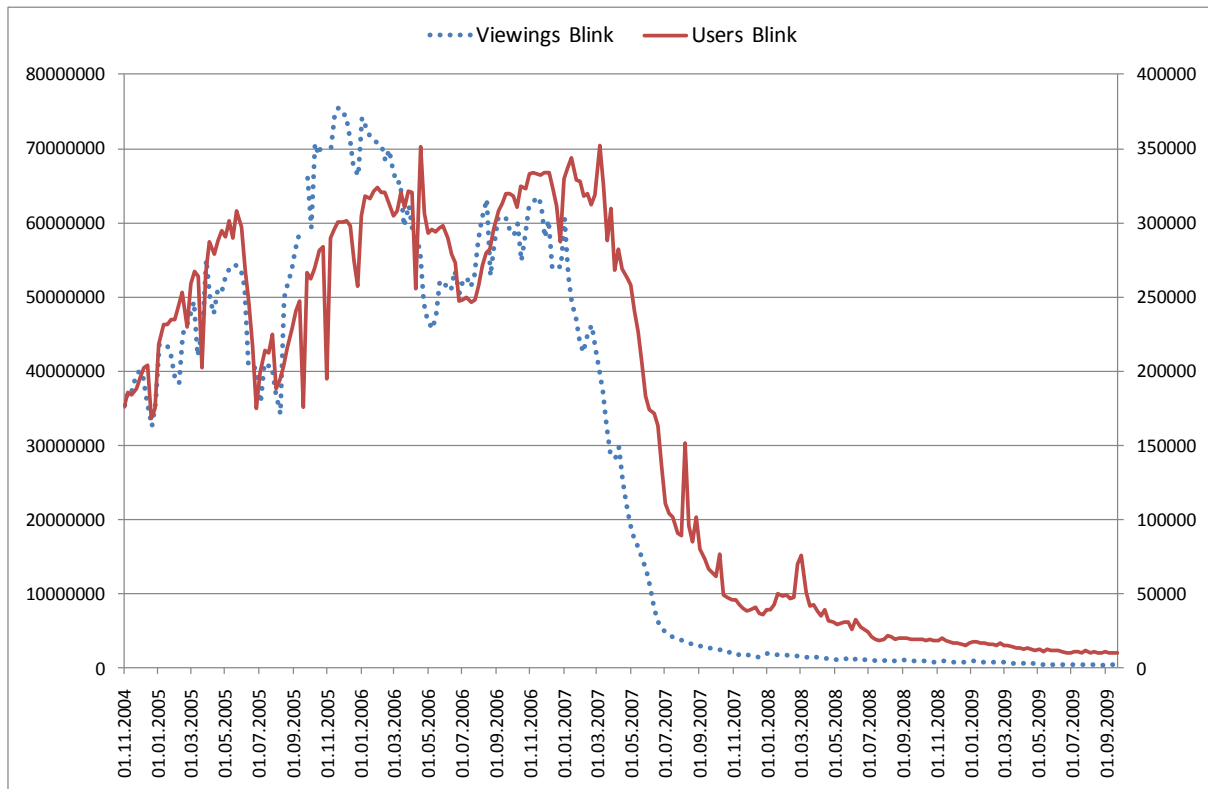
¹⁰ Based on prices listed on www.annonsepriser.no, a portal for advertising prices on Norwegian web sites, on November 29, 2009.

Figure 4 The development in weekly unique viewings for Blink and Nettby 2003-2009. Source: TNS Metrix.)¹¹



user on Blink started to decline in the fall of 2006 with the entrance of Nettby, and then dropped dramatically during the first half of 2007. This is consistent with the hypothesis that super-users were the first to migrate to Nettby, then followed by lighter users. This is also what we see when looking at the development in users and viewings, where indeed the viewing numbers decreased five months prior to the decrease in users. This is shown in Figure 5.

¹¹ Figures for Nettby are not publicly available. To obtain figures for viewings for Nettby we have therefore used public figures for weekly viewings and weekly unique users for VG to calculate what share of the viewings Nettby had. As Dagbladet (Figure 3) VG has had a very stable number of viewings per user prior to Nettby's introduction. For the pre Nettby period (13.01.2003-08.05.2006) the average viewings was 31.56 pages per user with a standard error of only 5.29 and min max of 21.89 and 47.74 respectively. We use this average number and multiply it by the total number of users and the residual viewings is ascribed to Nettby. This is a conservative estimate and in the ball park of what Nettby themselves suggest on their home page during the fall of 2009. The same method is used to provide numbers for Blink for the first two years (2003-2004), again refer to Figure 3 where the underlying Blink and Dagbladet numbers are presented.

Figure 5 Weekly viewings and users for Blink from 2004 to 2009. (Source: TNS Metrix)

The owner of Blink argued that Nettby had duplicated Blink's software. The dispute was solved through a settlement. We do not go into the case here, but what seems to be the case is that important users (that we label super-users) were moved from Blink to Nettby almost immediately. This may be a key explanation why Nettby managed to achieve a critical mass of users so fast after the service was launched in the market.

Another likely trait of super-users is that they are particularly demanding when it comes to functionality of the social network. They clearly have a special interest in the network and spend significant amounts of time on it. It is also likely that they are well informed of competing networks and constantly searching for better and new functions to support their social activities. They may also address the social network administrator and request such changes. Furthermore, it is likely that super-users may form groups within the network as they share a strong interest for this form of social interaction and all spend significant amounts of time on the social network .

Suppose that super-users are well-informed, highly-interactive, and very demanding when it comes to network functionality. This would make it imperative for network administrators to

cater to them. Responsiveness to their requests for additional functionality, or objections to loss of functionality, may foster a stronger sense of ownership and loyalty to the network. On the other hand, failure to do so may have serious consequences as their particular interest in and heavy use of the network, may lead them to take strong offense to the loss of functionalities. Furthermore, as moderators, they quickly reach a large audience of users on the network and may influence or reinforce opinions. Unwelcome restrictions or reductions in functionality, like those imposed by Friendster as mentioned earlier, would hence, most likely, lead super-users to leave more quickly than regular users. Furthermore, they may broadcast information of what they consider superior networks upon their departure, thus taking followers with them and speeding up a migration of users. This would make it imperative for the network administrator to pay special attention to the contentment of super-users.

A Two-sided market – the reason why memberships are free?

The majority of social networks do not charge users. Free access may be one tool used to achieve a critical mass of users in presence of network effects. Should we then expect that mature social networks as Facebook start to charge users? No, another feature of social networks implies that we expect that also matured social networks would be offered for free. A provider of a social network service serves two groups; users and advertisers. Each group's usage influences the other group, thus we have a so-called two-sided market. A social network needs to recruit both sides of the market to be successful; and therefore understand the effect the number of ads has on the number of users (users typically dislike ads), and the effect the number of users has on the demand for ads.

This feature resembles other two-sided markets; one example is an online newspaper where advertisers and readers have preferences with regard to the size of the other group. The more readers, the higher are the benefits for the advertisers. On the other side, readers typically dislike ads, and the more ads the lower is the readers' utility from an online newspaper.¹² Another similar example is Google; Google links advertisers and searchers.

¹² Other examples of two-sided markets are credit cards, composed of cardholders and merchants (Rochet and Tirole, 2001), yellow pages, composed of advertisers and consumers, operating systems (end-users and developers).

Hence, we have economies or diseconomies of scale that often are called inter-group network effects. This is different from the intra-group network effects discussed above, where members of a group have preferences for the size of their own group.¹³

In social networks users are not charged for accessing the network, instead the common business model for social networks is to rely solely on advertising. For the advertisers, the more users the better, and since users typically dislike ads, ads may be considered an indirect price for the users. We thus have a positive network effect from the members of the social network to the advertisers, while there is a negative network effect from the advertisers to the users of social networks. Pricing strategy is challenging in two-sided markets. Social networks and online newspapers use the same business model. Users are given access to social networks as well as online newspapers for free. All other things equal, such a strategy would attract more users, and the other side, the advertisers' willingness to pay for ads increase with the number of users. At the same time, too many ads would reduce usage since users dislike ads. Giving access to users for free may thus be considered a strategy to create demand for ads, and this may not be a temporary outcome. The two-sided market feature of social networks implies that even a 'Facebook-monopoly' will not charge users. This is analogous to what we observe for Google; despite its strong position, it does not charge searchers. The reason is that they want a large number of users in order to attract advertisers.

The two-sided market structure may also give further rise to the winner-takes-it-all outcome. When revenues are collected from advertising, size becomes important to attract advertisers. All other things equal, the advertisers go to the largest social network.

The choice of charging users or not obviously depends on how price sensitive users are. For mass-market social network services (e.g. Facebook) users are probably very price sensitive. A lot of members would leave the network if it starts to charge users. For these social networks, it is not likely that charging for memberships is profitable. This contrasts with what we observe for niche social networks on online dating. They are charging members. As accentuated above, the reason is probably that users have a higher willingness to pay for a date than for having contact with old classmates.

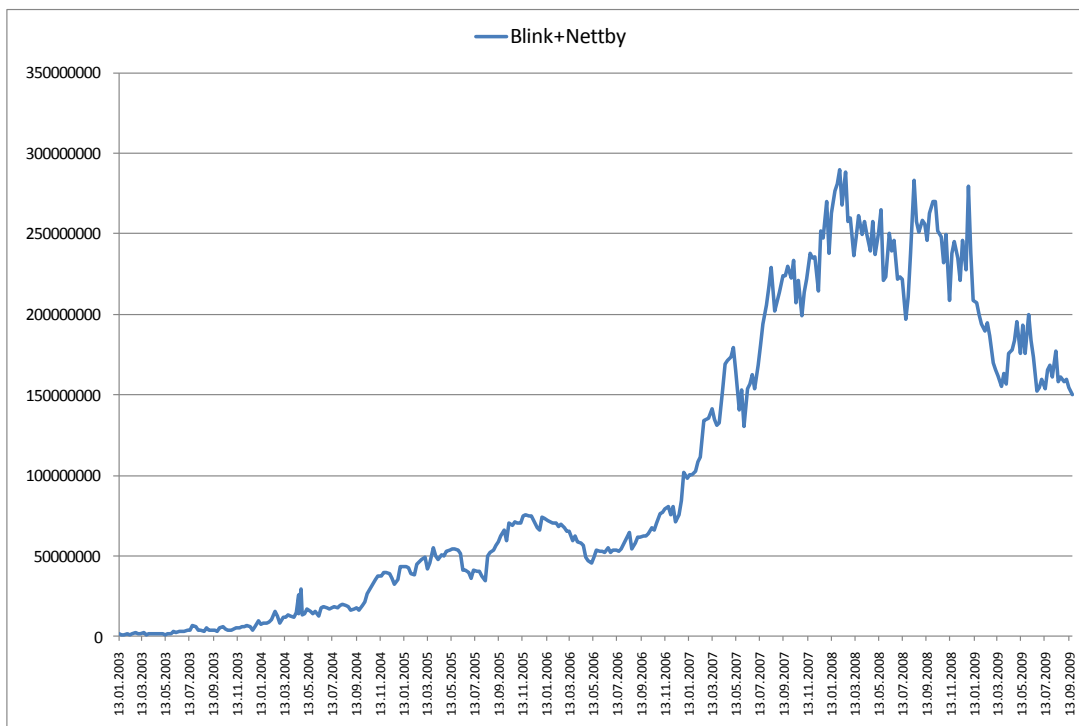
¹³ For overviews of the literature on two-sided markets, see e.g. Rochet and Tirole (2006). Eisenmann et al (2006) provide a guide to business strategies in two-sided markets. Nilssen (2009) analyzes the TV-market as a two-sided market.

Some lessons from Scandinavian social networks

If negative network externalities (the night-club-effect) play a significant role, social networks face a challenge on how to stay on top and not lose their position. When focusing on social networks in Norway and Sweden, we observe that they face a significant challenge on how to stay on top.

In Norway, apparently Blink did not succeed in meeting this challenge, but is this the whole story? The surprising and sudden decrease experienced by Blink together with the surprisingly high growth of Nettby can be looked at in alternative way. The two social networks have large similarities, and the major change, in addition to a new name, was a new graphical design. If we assume that the super-users did migrate in large numbers from Blink to Nettby, the picture that emerges is a development that resembles what we have seen for other social networks. This is what is illustrated in Figure 6 where we aggregate the viewings of Blink and Nettby.

Figure 6: The development in combined weekly viewings for Blink and Nettby for the period 2003-2009.

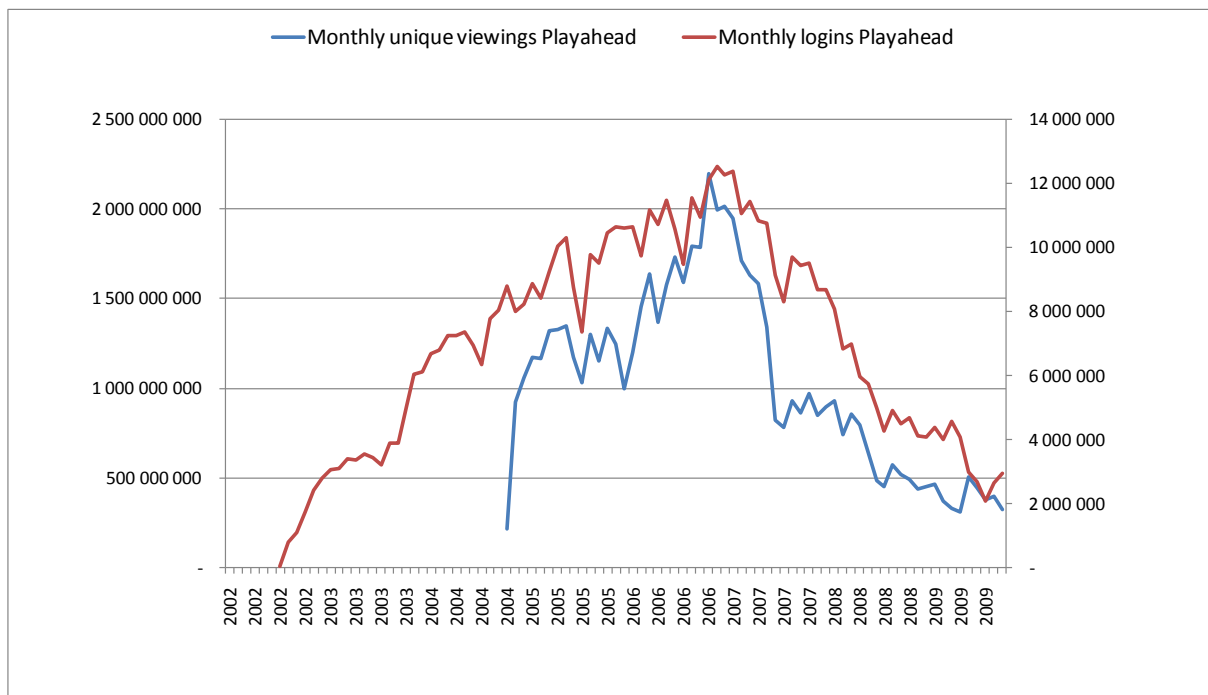


While the take-off of Nettby and the fall of Blink are different than a typical network service, we now observe that the aggregate use of Blink and Nettby performs as expected for a social

network service. Thus, if what happened was some sort of take over where the new product Nettby just was a repackaged version of the old product Blink, also the Norwegian case resembles what has happened elsewhere.

Turning to the Swedish market, the two dominating players chose quite different strategies. Playahead continued more or less with the same concept as they had when they were on top in December 2006 with more than 2 billion monthly viewings. Playahead was considered a very promising social network and was bought by MTG in the beginning of 2007 for 100 million SEK. However, keeping the product more or less ‘as is’ turned out to be a bad strategy. Already one year later, in December 2007, Playahead had lost 55% of its viewings and this fall continued until they closed down the network in January 2010.¹⁴ The development in viewings and logins are shown in Figure 7. Note that the drop in viewings precedes and exceeds (both in absolute and relative terms) the drop in logins. This is consistent with super-users being the first to migrate, and lighter users following as discussed earlier.

Figure 7 Monthly unique viewings (left axis) and logins (right axis) for Playahead 2002 to 2009. (Source: Playahead’s old homepage.)

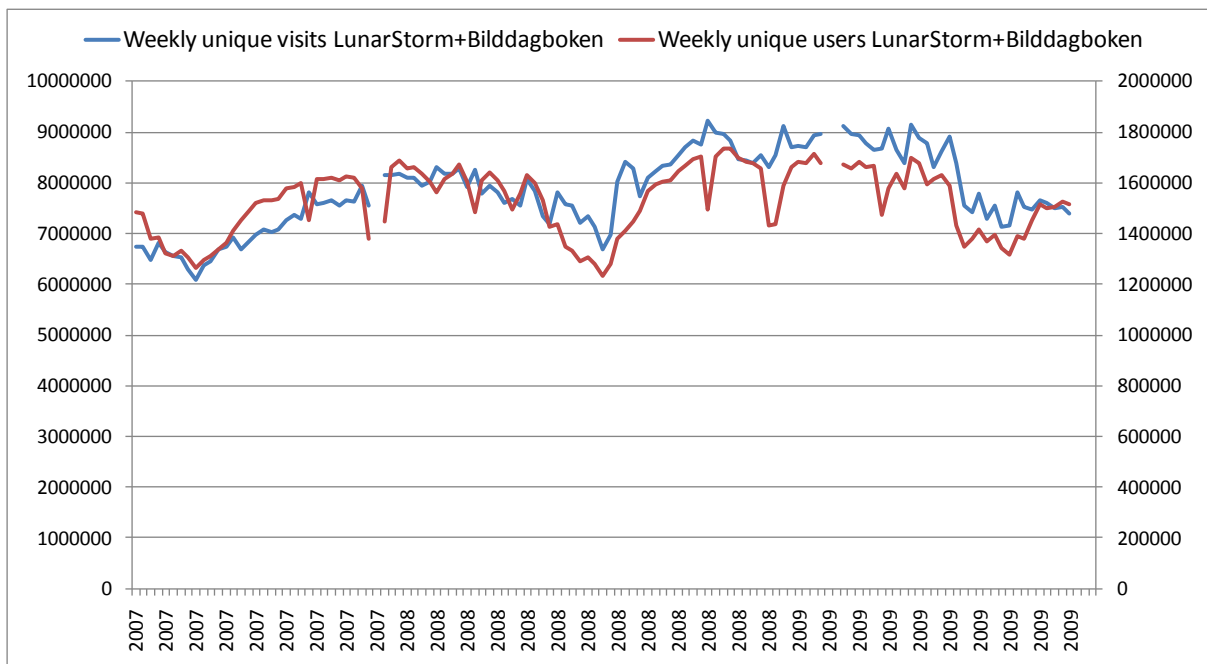


The other dominating player that started already in 2000, Lunarstorm, seems to have had a very different strategy to maintain its position. Lunarstorm also kept its main product, but in

¹⁴ See Dagensmedia.se: <http://www.dagensmedia.se/nyheter/dig/article116689.ece>

addition, they acquired Bilddagboken. The majority of Lunarstorm's users seem to have been transferred into this new concept, Bilddagboken, at the same time keeping the old network intact. LunarStorm reached its highest usage in 2006. If we look at the period from week 21 in 2007 until week 43 in 2009, Lunarstorm (now including also their acquisition Bilddagboken) was able to keep its number one position and even increase the usage by 5.2% annually. This is shown in Figure 8.

Figure 8 Weekly unique visits and users for the aggregated Lunarstorm and Bilddagboken in 2007 to 2009 (Source: KIA index, <http://www.kiaindex.net/>).



In sum we conjecture that the different social networks have chosen different strategies. The development of the social networks in Norway and Sweden indicates that it is difficult to stay on top, and this is consistent with the existence of night-club-effects. In particular young people, consider social networks as a part of their image. As a consequence, we may not expect that a permanent social network monopoly will evolve. However, an open question is whether the owner of the most popular social network (or night-club) today, has an advantage or a disadvantage when it comes to introduce the next *hot* network. The lessons from Norway and Sweden are mixed.

Conclusion

Key economic features of social networks are positive intra-group network effects (users' valuation increases with the number of members) and low degree of compatibility (members of network A cannot communicate with members of network B). All other things equal, these effects give rise to positive feedback effects; the strong becomes stronger and the weak becomes weaker. The positive feedback mechanism may lead to a winner-takes-it-all market, in particular in a market with low degree of compatibility between networks. A high market share would then be a competitive advantage for a large network when fighting to attract more users.

Few social networks charge their members, and their revenues are collected from online advertising; social networks thus constitute so-called two-sided markets (inter-group network effects). Social networks want to attract more users in order to be more attractive for the advertisers. There is, however, a tradeoff, since users typically dislike advertising. This feature of a two-sided market with ad-financing would further lead to a winner-takes-it-all market.

For many young people, social networks are part of their image. They may want to be where the right people are, not where all people are. Social networks are virtual communities, places to meet other people. As for offline communities, e.g., nightclubs, it may be important to be part of a new and trendy community. This may give rise to negative network effects – so-called *snob effects*; a consumer wants an exclusive or unique product or service. We observe a development consistent with this for several social networks which seem to have experienced this night-club-effect; after a period, the trendsetters or super-users do not want to be where everyone is, and they move on to the next *hot* online or offline club. This effect may oppose the positive network effects, and may thus limit the winner-takes-it-all feature of social networks, and we would probably not observe a 'Facebook-monopoly'.

A possible strategy for management would be to pre-empt the loss of super-users or trendsetters by attempting to launch the next hot network or acquiring a rising star to increase the likelihood of maintaining the number one position. This is consistent with what we observed for Lunarstorm which acquired the rising star, Bilddagboken, and remained on top. From our work with social networks, we also find the supposition credible that super-users

are well-informed, highly-interactive, and very demanding when it comes to network functionality. This would make it imperative that management pays special attention to them, interact with them, and follow up their requests for additional functionality. If not, super-users may be quick to leave for a better option, and other users soon follow.

From the Scandinavian cases we find that the social networks face a significant challenge on how to stay on top. One potential explanation is that there exist significant negative network externalities (night-club-effects). Another possible explanation is that super-users are always on the search for better network functionality and quick to migrate when they find it. One explanation does not rule out the other. Regardless, management of social networks faces greater challenges than under regular network effects and the likelihood that the winner-takes-it-all is potentially small.

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