UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

# Value Creation in Online Social Networks

## The Importance of Looking Beyond Financial Information

**Master Thesis, 30 HP, Spring 2011**
**Industrial and Financial Management**

**2011-05-27**

**Authors:**
Jenny Niclasson, 880817
Andreas Rickman, 870327

**Supervisor:** Stefan Sjögren,
PhD, Assistant professor

# ACKNOWLEDGEMENTS

# ABSTRACT

This thesis emphasizes value drivers that are characteristic for online social networks in order to discuss whether or not market values of such companies are realistic. The motive behind this is the current discussion of overvalued social networks such as Facebook and Twitter. The thesis begins with a definition of online social networks and continues with a brief review of the current situation on the market. Further, existing valuation methods for online social networking companies are introduced. This discussion evolves into defining the aim of the thesis. The next part of the study helps to understand the issue through a theory chapter which also contains two working hypothesis that supports the analysis. The empirical chapter consists of two different approaches. Firstly, interviews with analysts that work with the valuation of these kinds of companies on a daily basis and an interview with the founder of one of the first social networks ever – Lunarstorm – have been conducted. Secondly, a case study has been conducted, examining acquisitions of the two Swedish online social networks Lunarstorm and Playahead. The results from the empirics along with the theory end up in an analysis where the importance of value drivers not taken into consideration in traditional valuations is discussed.

The main benefit from this study is its contribution to a greater understanding for what drives the expected values of online social networks to its height. Throughout the interviews, the respondents have indicated that there are additional value drivers beyond financial information, such as platform theory and network externalities, that affect the firm value in these companies. The conducted case study of Lunarstorm and Playahead, where the valuations based on solely financial statements were below their true market values, supports this argument. However, due to that the results rely on only two companies included in the case study, no general conclusions throughout the industry of online social networks can be drawn.

# TABLE OF CONTENTS

# 1. INTRODUCTION

*This thesis concerns the valuation process of online social networks - how the expectations of future cash flows arise and how these predictions are transformed into firm value. The paper is focusing on Swedish online social networks and their small scale operations in order to try to apply and draw more general conclusions on large scaled companies such as Facebook.*

## 1.1 BACKGROUND

Online social networks are platforms where people can interact with each other through the Internet. These networks enable people to connect and communicate through their computers or mobile phones. There are different types of online social networks, for example blogs, chat rooms or social platforms such as Facebook (Oxford Reference Online). In this thesis, online social networks are defined according to Boyed and Ellison (2008) as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system". In some material the terms "social network sites" and "communities" are mentioned, and in this thesis they are equated with online social networks.

In October 1995 the term Internet was defined by the Federal Networking Council (FNC) as a global information system (Leiner et al. 2009). Since Internet's public establishment in the mid 1990's, it has faced a quick development and today there is hardly anyone who is not affected by this worldwide network. The enormous scope of the Internet has made it possible for people all around the world to get connected. It has created new possibilities for people when it comes to communication, information seeking and reductions in transaction costs.

As more people were connected to the Internet, the emergence of online social networks started to take place. The first modern social network was established in 1997 and was called SixDegrees.com. This site enabled members to create their own profile, add friends etcetera. However, this social network was not able to survive as a business and was closed in the year 2000. This failure was probably a result of too few people connected to the network and thus was not value adding enough. SixDegrees.com seemed to be ahead of its time (Boyd & Ellison 2008).

Since then, many online social networks have been established as the accessibility to the Internet has increased. Some of these platforms have been able to create a sustainable network, while others have faced reduced popularity with time. Some popular online social networks that have experienced huge popularity in recent years are MySpace, LinkedIn, Playahead and Lunarstorm.

Lunarstorm and Playahead are two Swedish online social networks that had their glory days in the early 2000s. Lunarstorm was the most popular social network and had as much as 1.2 million members between 12 and 25 years old (Lunarworks Annual Report, 2005). Playahead

did not reach as many users, but still was a very popular site with approximately 530 000 members between 13 and 26 years old (Playahead Annual Report 2006). In 2006 and 2007 respectively, the companies were acquired by the larger media companies CLS Holding and MTG AB. Lunarstorm was acquired for 372 MSEK (CLS Holding plc. Annual Report & Accounts, 2006) and Playahead for 115 MSEK (MTG AB Annual Report 2007). These were gigantic amounts paid for young companies that both had experienced initial years of negative earnings. Later on, the companies turned out to be unsuccessful acquisitions where both Lunarstorm and Playahead faced bankruptcies.

More recently, online social networks such as Facebook and Twitter have gone through a rapid growth in attracting the interest of millions of people all around the world. Therefore, this type of communication can be considered to be a major trend in the society today. Facebook was founded in February 2004 and in December the same year the platform had almost one million users. Since then, the number of users has increased exponentially and since July 2010 Facebook has more than half a billion users worldwide (Facebook, 2011). Twitter has not reached the same amount of users; in September 2010, 175 million people were registered on the community (Twitter 2011). As the number of users has increased so has also the interest from investors. Since the foundation of Facebook, the company has received several offers from both investment firms and other companies interested in take-overs (Grocer 2011). The latest investment in Facebook amounted to $500 million and was made by Goldman Sachs. This investment implies a market value of Facebook equal to $50 billion (Craig & Sorkin 2011). In December 2010 Twitter raised new capital which valued the company to $3.7 billion (Grocer 2011).

The gigantic purchase prices in these companies have started a discussion whether potential market values in online social networks are realistic or not. There are analysts arguing that the invested amounts are unrealistic and indicate a new IT bubble (The Economist 2010).

Generally, the process of estimating the true value of a company is made through evaluation of past cash flows and estimations of future ones. This is implementable when dealing with companies whose financial statements are open to the public. However, this approach gets harder for analysts and the public to manage when valuing private companies with no public information, rapidly growing companies where the financial statements do not give a true picture of today's situation or companies that have made big reconstructions of management or operations recently. In such cases there is not enough information to estimate the company's true value resulting in the need to estimate some parameters individually. In addition, there might be other parameters affecting the market value of a company that do not raise any cash flows. These parameters might be intangible assets, such as trademarks and number of users, which need to be valued externally and then added to the final value (Damodaran 2002).

Online social networks are young, rapid growing and often private companies which complicate the valuation process since the historic information is not sufficient. Occasionally, the lack of history in one specific company can be overcome by examining the history of the specific industry and other, older companies within it. Although a specific company has a

short history, the industry in which it operates in might have a longer history from which assumptions can be made. However, online social networks such as Facebook belong to an industry that is constantly evolving and it is therefore difficult to find similar businesses to compare with. Moreover, online social networks seem to have additional value drivers from ordinary companies. They operate as social platforms where network externalities are an important factor. Network externalities imply that the number of users play an important role in the valuing process; the more users connected to a network the bigger the utility of the platform (Katz & Shapiro 1985).

Many of today's large online social networks, for example Facebook and Twitter are private companies that do not release much information about their financial statements. According to United States Security and Exchange Commission (SEC), a company is facing increased disclosure requirements if it has more than 500 registered shareholders and has had more than $10 million worth in total assets for the last three years. When a company reaches this limit, it must file information about its operations, financial statements, competitive situation and so on (U.S. SEC, 2011). Today, a discussion whether SEC shall relax the requirements for when public disclosure is mandatory is going on (Pepitone, 2011). Such a revision would facilitate further for those companies that wish to remain private, such as Facebook, but also impair users' insights.


## 1.2 PROBLEM FORMULATION

The area of how to estimate the true value of online social networks is an up-to-date and interesting question since the number of these types of companies has increased dramatically in recent years and retained great interest from investors. It is preferable to get a proper understanding of how the value in these companies is created. Many of the companies have incredibly high market values even though their revenues sometimes are below costs. In these cases there seem to be other value drivers in addition to the information derived from financial statements. One fundamental factor is of course the belief that the company is going to be profitable in the future. It is in the interest of potential investors, but also to users and society as a whole to get an understanding of how the valuation of these types of companies is accomplished. Investors need to get an accurate estimation of a company in order to be able to offer a reasonable price for a stake in the company. Other companies that might be interested in this value creation are banks, since they have to appreciate the true value of the company in order to grant its loans. If an online social network company should go public, an Initial Public Offering (IPO) needs to be accomplished and it is extremely important to get a realistic appraisal of the company. When a company gets introduced on the stock market it also becomes in private investors' and analysts' interest to make assumptions on whether the share price is over- or undervalued.

There is some previous research within the problem area (Gupta, Lehman and Stuart 2004; Gupta 2009; Kossecki 2009) where models of how to estimate the value of online social networks depending on the number of users and other factors are presented. However, online social networks in general are a relatively new phenomenon where more studies can be made.

Even though previous research shows many aspects of how to estimate the value of the number of users etcetera, there is no information about what is really driving business values to its height. With this study we hope to gather more information of what actually triggers the value in this kind of companies in order to get a better understanding of how to put a reasonable price tag on them. Are there only traditional values derived from financial statements that determine the value in online social networks, or are there other value drivers that contribute to the high market values? Additional value drivers might be strategic justifications, network effects and platform theory. These are raising the expectations of future cash flows which are reflected in the high market values. A further question then becomes whether these high expectations are reasonable and realistic or if today's high market values of online social networks are overvalued.

During time, many online social networks has come and gone, but today the market is dominated by large, global companies such as Facebook and Twitter. However, due to the lack of information available, we have limited the data collection for the empirics into only consider Swedish online social networks and analysts. By this, the study of smaller communities aims at being applicable on larger ones.

## 1.3 AIM
The aim of this thesis is to conduct a cause and effect study in order to emphasize value drivers that, in particular, have effect on the market value of online social networks.

## 1.4 OUTLINE
***Chapter 1 – Introduction.*** Contains an introduction to online social networks and will give the reader background information to this phenomenon. The chapter also contains a problem discussion presenting the study's research question and the purpose of the study.

***Chapter 2 – Methodology.*** Discusses and motivates the choices of methodology in the study. Further, the chapter describes the practical implementation of the study, the use of primary and secondary data and the handling of interviews. The methodology ends with a discussion of the reliability and validity of the study.

***Chapter 3 – Frame of References.*** Aims at giving the reader a broader knowledge and literature review of the research area. The chapter starts with a literature review and describes the characteristics of online social networks and presents alternative valuation methods for this kind of companies. Thereafter, additional theories that might help explain the value in online social networks are introduced. Finally, the frame of references is concluded by the setting of working hypothesis to work from.

***Chapter 4 – Empirics.*** Summarizes the results from the empirical research conducted through interviews. The aim of this chapter is to give a deeper understanding of how online social networks operate as well as identify the main factors that create value in the communities. The chapter also contains a case study with valuation of two Swedish online social networks.

*Chapter 5 – Analysis.* Discusses the findings from the empirics and relates it to theories in the frame of references.

*Chapter 6 – Conclusion.* Summarizes the main findings from the study, its limitations and suggestions for further research.

# 2. METHODOLOGY

*This chapter aims to address the methodology of the study and describe how the research question has been investigated and information gathered. Further, the chapter considers the selection of interviewees and also discusses the reliability and validity of the study.*

## 2.1 CHOICE OF METHODOLOGY

We are experiencing that there is a lack of knowledge in the chosen problem field and therefore an *explorative study* is implemented in this thesis. According to Patel and Davidson (2003) this is preferable when there are information deficiencies in the problem area. Previous research covers much of the basics of online social networks, but when it comes to a deeper understanding of what actually drives their market values, previous research is not that extended. Therefore, in accordance with the purpose of the study, the goal is to gather as much information as possible within the problem area in order to attain new knowledge and substantiate further research. In addition to overview previous research, the study will rely on interviews and reviews of financial reports through a case study on the two Swedish online social networks Lunarstorm and Playahead. This aims at creating a greater understanding of the function and value creation in online social networks and promoting further research within the area.

## 2.2 DATA COLLECTION

Our thesis is depending on both primary and secondary data, which is advantageous since the application of both types of data can control and support each other in the results of the study (Jacobsen 2002).

*Primary data* is gathered through interviews with experts within the area of online social networks, and analysts specialized in Internet companies. These interviews are designed to cover a strategic and financial point of view of online social networks. Because of the limited number of online social networks in Sweden, there are few experienced people within this area, making interviews a favorable alternative before, for example, surveys. It is preferable to collect this data directly since it can generate specific answers in accordance with our research question, which is the main advantage of primary data (Blumberg et al. 2008).

*Secondary data* is predominantly used in the introduction and frame of references in order to get a wide perspective of previous research and information about the studied area. These sections of the thesis are more general and therefore secondary data is advantageous. Drawbacks with secondary data is that it is not conducted in accordance with our specific research question (Blumberg et al. 2008) and therefore the data need to be studied more critically (Jacobsen 2002). However, we are aware of these drawbacks and by only relying on peer reviewed articles and well-cited authors when using secondary data, these disadvantages are reduced.

The first source of information has been various databases specified in Economics and Science, such as *Business Source Premier, EDGAR, Emerald Management Xtra Plus, Web of Science* and *EconLit*. In order to find relevant articles keywords such as *online social network, two sided market, platform, valuation, value creation* and *network externalities* have been used. Further, secondary data in the form of financial statements is used in the case study. This aims at giving a deeper understanding of the online social networks studied which is needed in order to perform a proper valuation of the companies. The annual reports of the studied companies have been reached through the database *Retriever.*

A second approach to finding relevant literature has been to review the list of references of interesting articles. In addition, valuable information about literature has been received from Assistant Professor Stefan Sjögren at Gothenburg University, School of Business, Economics and Law. Finally, Gothenburg University Library has accommodated the need for printed sources.

## 2.3 SELECTION OF INTERVIEWEES

The process of selecting people for interviews began with the decision to collect empirical data based on two aspects. Firstly, the strategic perspective of how online social networks function and secondly, the financial dimension focusing on what areas that create value in online communities. The interviewees have been limited into only consider persons in Sweden in order to facilitate contact with the respondents and the process of data collection.

To cover the strategic aspect of online social networks Rickard Eriksson, founder of one of the world's first online community, namely Lunarstorm, was contacted. He developed Lunarstorm's website entirely on his own and thus has considerable experience in how these types of networks operate. Today, Eriksson lectures a lot in the area and has received nominations and awards such as "Information Technology Person of The Year" and "The Internet Prize" as well as rankings such as "Most Powerful Person In Telecom Industry" (http://rickarderiksson.me/). With this background we consider Rickard Eriksson as the most knowledgeable and experienced person in Sweden in the field of how online social networks operate. We had the opportunity to meet Eriksson at his office in Varberg.

To get the economic aspect covered two analysts concentrated in the area of Internet and media companies have been interviewed, namely Urban Ekelund at Vero Kommunikation AB and Jan Glevén at Redeye.

Urban Ekelund is the former "Chief Analyst" at, and co-founder of Redeye, an equity research firm and financial advisor with focus primarily on growth companies. Ekelund has also been working as a journalist at different business newspapers. Today Ekelund works at Vero Kommunikation AB were he concentrates at financial communication. Jan Glevén is an equity analyst at Redeye and follows Internet and media companies.

In 2006, Redeye conducted a valuation of Lunarstorm why we thought that these two analysts would possess information of this valuation. Unfortunately, they did not have any insight in

the valuation, but their knowledge in growth companies, in particular Internet companies, contributed to important understandings of the industry.

Throughout the study, it has been difficult to reach respondents that want to participate in the study. Many of the analysts and people familiar in the problem area did not want to take part of the study as they did not consider themselves sufficiently knowledgeable in the area. However, many of those asked wanted to take part of the study as it was conducted.

MTG and CLS Holding, the companies that acquired Playahead and Lunarstorm respectively, declined to participate in the study.

## 2.4 CONDUCTING TECHNIQUE

The interviews in this study were conducted by using a low degree of standardization as well as structuring in order to get a deeper understanding of the respondents' experiences. By applying a more open approach the respondent has the possibility to raise questions that he or she considers important, but that the interviewer has not thought about. In addition, an open approach makes the respondent more active in the interview. One possible drawback with an open approach is that the respondent's influence enables him or her to adapt the answers to the image he or she wants to create by him-/herself or the discussed topic. It is important that the interviewer is critical and have control over the meeting despite the transparency.

A primarily wish was to conduct the interviews in person in order to establish a better contact with the respondents and facilitate an in-depth interview. However, due to time constraints as well as the distance between interviewers and respondents, the interviews with the analysts had to be carried out via e-mail since also telephone interviews were difficult to implement.

## 2.5 CASE STUDY

The case study covers valuations on the two Swedish online social networks Playahead and Lunarstorm and aims at comparing the market values of the studied companies with the firm values generated when only relying on the information from the financial statements. This creates a possibility to draw conclusions of whether there are additional value drivers affecting the expected cash flows and therefore also firm value. The valuations are conducted using the Discounted Cash Flow Model, leading to a Free Cash Flow to Firm for both companies. Since both Playahead and Lunarstorm are young technology firms, operating on the Internet, the valuations are established through a spreadsheet designed by Aswath Damodaran (http://pages.stern.nyu.edu/~adamodar/). This spreadsheet is constructed for simplifying the estimation of high growth companies, especially dotcom firms. In this model, important variables have been estimated for each company. How these estimations were made is discussed further in the empirics.

### 2.5.1 Case Study Limitations and Drawbacks

This case study has drawbacks that need to be discussed before proceeding further. The valuations are based on free cash flows calculated from the information available in the companies' annual reports. Due to the relative short lifetime of both companies, the data available is not optimal for a DCF valuation. For Lunarstorm, which was acquired in the beginning of 2006, the valuation is based on free cash flows between the years 2000 to 2005. It can be assumed these are the years CLS Holding had available when doing their valuation as well, but a 10 year period of time would probably give a more accurate and less sensitive valuation.

In the case of Playahead, it was even more difficult. The company, which was acquired in the beginning of 2007, only had relevant information for the years 2004 and 2006 available. Prior to this, the company owning Playahead had additional activities disturbing the image of Playahead's financial performance. We assume that MTG AB had information available for 2003 to include in their valuation. However, it is assumed that the year of 2002 had too short time of operations to be relevant from a valuation point of view. Three years is a short span of time to do a proper valuation, but the fact that MTG AB only had one additional year available, we believe the valuation can contribute to illustrating the purpose of our case study.

### 2.6 RESEARCH ETHICS

Research ethics focuses on the need to conduct research in a morally justifiable and responsible manner. One important aspect is the ethical treatment of participants in the study. It is very important to protect the respondents to prevent them from suffer embarrassment, loss of privacy and the risk of being hung out (Blumberg et al. 2008).

In this study, the respondents have been selected carefully for their knowledge and experience. Before publication, every respondent has received the offer to proofread the text and offered anonymity when desired.

### 2.7 RELIABILITY AND VALIDITY

The quality of a study is directly affected by the quality in gathered information, especially when dealing with primary but also when it comes to secondary data. The quality of a study can therefore be evaluated through its *reliability* and *validity*. Below, the terms are further described and applied to our study.

### 2.7.1 Reliability

The reliability of a study measures the dependability of the study and the possibility for reaching the same results if the study were to be replicated (Blumberg et al. 2008). The open and unstructured interview, where all discussed areas and questions are not covered in the questionnaire, complicates a replication of the study. However, in the case of uncertainties, confirming questions have been asked in order to ensure that the answers were understood correctly. Further, the interview was recorded and transcribed in order to be able to

concentrate on the respondent and have the possibility to return to the interview later. Together the actions mentioned above should contribute to an increased credibility of the study.

A drawback of this study is that the interviews with analysts had to be conducted through email. This reduces the personal contact with the respondent and impairs the ability to ask supplementary questions. This type of interview also makes it more difficult to control for the respondent's own interpretation of the question. To reduce these misinterpretations, the questions have been formulated more thoroughly.

In addition, the chosen analysts are very knowledgeable in their field and we consider their participation as strength for the study. Also Rickard Eriksson's experience from Lunarstorm makes him a very qualified person, contributing to further credibility to the study.


**2.7.2 Validity**

One main drawback of the study is the difficulty in generalizing the results since the number of respondents and the scope of the study is relatively small. This is however a common implication of qualitative studies (Bryman, 2011). To reduce this disadvantage, the empirics have been designed as broad as possible by obtaining results from different perspectives. With many years of experience in online social networks, Rickard Eriksson has provided information of how online social networks function. In addition, analysts more familiar with the financial perspective have supplied information about the valuation of these types of companies. Finally, the case study gives a more explorative perspective on the value drivers in online social networks.

Actions such as interviews with very knowledgeable people, transcription, confirming questions and proofreading from respondents are all factors contributing to an increased internal validity.

# 3. FRAME OF REFERENCES

*This chapter consists of three parts. Firstly, it covers a literature review on previous research within the area of company valuation. It describes how to value ordinary companies, the limitation of those models and how these limitations have been transformed and adopted to online social networks. Secondly, characteristics of online social networks and theories that can explain their high market values will be described. Finally, the chapter discusses limitations of previous research and presents working hypotheses of the study to work from.*

## 3.1 LITTERATURE REVIEW

### 3.1.1 Characteristics of Online Social Networks

Damodaran (2010) discusses the emergence of technology firms and how their characteristics diverge from ordinary companies. New technology firms are often young companies with a short history and reticent financial statements that do not disclose much information about their assets. In addition, these companies are often new in the industry and the absence of similar companies makes it impossible to carry through a comparison.

These characteristics are highly responsive to online social networks such as Lunarstorm and Playahead, which are the latest branch of fast-growing technology firms. Other characteristics of these online social networks are that instead of ordinary customers, the communities' members are called users. In general, users do not pay any fees to get access to the network, why the most common source of income for these companies is advertising.

Facebook and Twitter are private, fast growing companies which makes it even harder to achieve an estimation of future cash flows and stable growth rates. This complicates the valuation of these companies and therefore it is of great importance that we can find a way to estimate their true market values. It is obvious that the value of an online social network is calculated through the present value of future cash flows, but the special characteristics of these types of companies indicate additional value drivers that seem to raise the expectations of future cash flows.

The elementary factor that needs to be fulfilled in order for companies to survive in the long run is regular cash flows. These cash flows are the foundation of the value of a company. Consequently, in order for companies to survive and grow, they need to create customer value and transform these values into cash flows. In their article Enders, Hungenberg, Denker and Mauch (2008) discuss why social networks are value adding for users and identify two main reasons. The first factor is that social networks give a wider contact network where users easily can come in contact with their friends' friends. The second value adding factor is the ease of keeping in touch through a social network. In general, people change contact information such as address, email and telephone number several times during their life, making it harder to keep in touch. Social networks help facilitate this problem since the contact is saved and updated in your profile.

### 3.1.2 Revenue Sources For Online Social Networks

Social networks basically have to rely on five different revenue sources according to Hagel and Armstrong (1997). These are, in order listed by the authors; (1) Subscription fees; (2) Usage fees; (3) Member fees; (4) Advertising commissions; (5) Transaction commissions.

Hagel and Armstrong (1997) argue that the success of social networks is sensitive to fees in various forms due to fact that these tend to limit the total number of members. It is discussed that a large user base is favorable to revenues from an advertising point of view. On the other hand, a social network with fewer users, but that apply fees can still have higher revenues. With this, Hagel and Armstrong want to illustrate the importance of a balance between revenues from fees and revenues from advertising based on the number of members.

This is further discussed by Rothaermel and Sugiyama (2001) who argue that advertising and transaction commissions are the most sustainable long term sources of revenues. This is based on the discussion that the three other sources of revenues mentioned by Hagel and Armstrong (1997) are based on fees. This is argued to impede the growth and utility of network externalities in social networks, which are said to be critical factors of success.

In addition, Enders et al. (2008) are focusing on revenue streams and how value is created in online social networks. Through case studies of XING.com and StayFriends they identify the number of users, their willingness to pay for a service and their trust in the platform as value creating factors for online social networks. Furthermore, the authors suggest three different ways to generate revenue streams for an online social network. These are through advertising, subscription[1] and transaction models[2].

In a scenario where advertising is a sufficient revenue source in the initial phase, but then needs to be supported by increasing subscription fees to cover increased costs, the case of Spotify is a good example. The music streaming service company that offers both advertising backed services and subscription services found themselves in this situation in 2011, which forced them to limit their advertised backed service in order to get their users to buy premium accounts instead (Gustafsson & Smith, 2011).

### 3.1.3 General Valuation Methods

During time, many authors have been writing about how to estimate the true market value of a company (Damodaran, 2002; Fyrkman & Tollerud 2003; Koller, Goedhart & Wessels 2010). All corporate valuation is based on that the present value of a company's future cash flows. If there is no expected cash flow in the future, the company is worth nothing. In order to get a fair estimate of the future cash flows, it is reasonable to look back at historical cash flows for insights on how they have varied, and if there are any patterns to these variations. Based on

---

[1] A subscription model implies that the network offers different services for their users, and then charges a subscription fee in order for users to utilize some or all of those services.
[2] A transaction model means that the company takes out a one-time fee from the user in order to fulfill a transaction on the website.

historic values, conclusions can be drawn about expected future growth of the company. Another important factor affecting the market value of a firm is the retention rate of the company, that is, how much of the net income that is not paid in dividends but reinvested for future investments in the company.

There are different approaches to estimate the true value of a company, but the two most common are fundamental valuation through discounted cash flow models and relative valuation. As with all valuation, the market value of a company is the present value of future cash flows, discounted by the Weighted Cost of Capital (WACC) adjusted for the growth rate of the company. The first and most fundamental way to value a company is by using the Dividend Discount Model (DDM)[3]. The limitations in the Dividend Discount Model can be overcome by applying a more proper calculation of the Free Cash Flows to Firm (FCFF)[4] (Fyrkman & Tolleryd, 2003).

A major limitation with the second valuation approach, relative valuation[5], is the difficulty in finding comparable companies. Two businesses are never completely identical, but diverge in different areas implying a reduction in the model's reliability (Fyrkman & Tolleryd, 2003).

### 3.1.4 Limitations and Drawbacks of Ordinary Valuation Methods

Traditional valuation models are optimal when valuing public companies characterized by a historic background as well as stability in growth and cash flows. When these circumstances change, the valuation process is obstructed.

Both young and growth companies face similar problems in the valuation process. Young companies have too short history to draw conclusions from. Furthermore, young companies usually are characterized by small revenues and negative earnings in the beginning of the life cycle which complicates the valuation further since it is difficult to estimate the future cash flows and earnings. Growth companies are businesses that survive the initial culling of competing actors and develop into a high growth company. Most of these companies are privately owned in the beginning, which obstructs the valuation process further (Damodaran 2010).

---

[3] This model equates a company's dividends by its cash flows and uses future estimated dividends to calculate the company's market value. This assumption involves some limitations for the model. In general, companies do not pay everything they possibly can in dividends, but choose to retain a portion of its net income for future investments. When this is the case, Dividend Discount Model will constantly underestimate the true value of a company.

[4] FCFF is the free cash flow available to all claimholders in the company such as shareholders and bondholders. It is a measure of what the company is capable of pay out in dividends. This model will give a more realistic value of a company than the Dividend Discount Model when it pays less in dividend than possible. The free cash flow to firm is calculated through:

$$FCFF = EBIT(1 - Tax\ Rate) + Depreciation - Capital\ Expenditure - \Delta Working\ Capital$$

[5] Relative valuation is to examine comparable firms and their market value based on different multiples in order to draw conclusions for the studied company. Some of the multiples are P/E, P/EBITDA, EPS and payout ratio.

### 3.1.5 Alternative Valuation Methods Adopted to User-Based Internet Companies

As the number of online social networks and other Internet companies has become increasingly common, several approaches to value these companies have emerged. Some of these valuations methods are the Customer Lifetime Value (CLV) approach, users' interconnectedness and through calculating advertising revenues per user.

During the last decade, much of the research in this area has concerned the value of the number of users connected to a network (Gupta, Lehmann & Stuart 2004; Gupta 2009; Kossecki 2009). In his working paper: "Valuation and Value Creation of Internet Companies – Social Network Services", Kossecki (2009) presents a model of how to estimate the market value of social networks. The value of a social network is heavily depending on the number of users and therefore Kossecki's model is based on Customer Lifetime Value (CLV). CLV estimates the value creation of each costumer and is calculated through considering factors such as average revenue and cost per user, the cost for acquisition and retention of the customer and finally the values are discounted. In addition, Kossecki has chosen to make the calculations by dividing the customers into different segments, depending on their loyalty. The three different customer groups suggested by the model are one-visit users, relation oriented users[6] and institutional users[7]. In a similar way, Gupta (2009) shows how customer lifetime value can be linked to firm value.

Gneiser, Heidemann, Klier, Landherr and Probst (2010) published an article discussing how to value online social networks. The authors consider the number of users, their relationship within the network and network effects to be essential factors when valuing these types of companies. Consequently, the article presents a model based on the users' interconnectedness within the network and the model is also tested on the online social network XING.com.

### 3.2 THEORIES SUGGESTING POTENTIAL VALUE DRIVERS

This part presents theories that can help to further explain the characteristics of online social networks and that might have effect on their market values.

### 3.2.1 Online Social Networks in a Platform Point of View

The basic structure of modern online social networks is based on the concept of platforms. In this case, a platform can be defined as a foundation technology or a service which is indispensable to participants in the particular industry (Gawer & Cusumano 2008). If we relate this to today's most popular online social networks Facebook and Twitter, we conclude that this is the underlying technology enabling them both to exist.

According to Hagel et al. (2008) the purpose of a platform is to function as "… a set of clearly defined standards and practices that help organize and support the activities of many participants". With this statements put in context, the basics of social network platforms 3.6.2 Network Externalities become clear. The platforms gather users and enable them to interact

---

[6] Relation orientated users are users that continuously visit the network and spend time and energy to create their profiles. They have a higher customer loyalty than one-visit users.
[7] Institutional users are users that come from big institutions and use the network to promote themselves.

within a predetermined set of rules, for example Twitter, where the platform enables user to communicate their message to their followers with a maximum of 140 letters.

These set of clearly defined rules and practices that help organize and support the participants is further discussed by Hagel et al. (2008) in a modern perspective, where Lee et al. (2010) investigates these platform rules and the impact of Web 2.0 services. Web 2.0 enables users not only to retrieve information, but also share and control data in the platform which is an important step in the development of the modern social networks in regards of applications. By shaping the platform so that it is possible for complementors to create and develop applications for social networks, the founding companies reduces their investment needs and enables business for other participants while attracting more users (Gawer & Henderson 2007). A set of well-shaped guidelines for the platforms should have several positives effects on the long-term performance and development of the platform in terms of functionality, adoption costs, revenue generation and expected user participation (Hagel et al. 2008).

In the discussion regarding social networks as platforms it is inevitable not to mention network externalities as a factor of success or failure. The platform concept discussed previously enables users to connect with each other, fulfilling the most basic, essential function. According to Katz and Shapiro (1985) the utility of a certain good or service can be derived from the amount of other people using the same service, called network externalities.

The most common way of illustrating this is the example of telephones. If only one person owns a telephone in the whole world, the value of this would probably be close to nothing. But if one more person owns a telephone, and is connected to the same network, the value suddenly increases significantly.

Relating this argument to today's online social networks is not difficult, and the similarities are significant. Most of the utility for example the members of Facebook is based upon the fact that other people they may know use Facebook as well. Taking it one step further, the growing network constantly attracts new members as the scope of its users widens.

### 3.2.3 Two Sided Market
In general, markets that are characterized by network externalities are also often two sided markets that rely on a platform (Rochet & Tirole 2003). The theory of two sided markets is an extension of the theory of network externalities (Bakos & Katsamakas 2008).

The structure of an online social network can be described as a two sided market platform where the platform interact two types of agents, buyers and sellers, and the involvement of one part directly affects the benefit positively for the other part. The benefit of each buyer and seller connected to the platform is depending on the total number of participants. For some platforms the utility decreases as the number of participants increases, for instance in shopping malls where more sellers (stores) lead to higher completion for each store and more

buyers (customers) make it more crowded and less pleasant to visit the mall. In the case of online social networks there are opposite conditions where the number of buyers (users) makes it more valuable to get connected since the probability of finding old and new friends increases. In the same way sellers can reach a bigger target group (Li, Liu & Bandyopadhyay 2010).

Rochet and Tirole (2003) point out that it is of great importance that the owner of the platform can satisfy both sides of the market in order to create value. This makes the price structure in these platforms very important. Bakos and Katsamakas (2008) indicate that the optimal price structure of a two sided market platform is usually to charge asymmetric prices from the two sides. The side that has the stronger network effect should pay a higher price than the side experiencing smaller network effects. The authors further conclude that large price asymmetries are common in Internet based two sided platforms such as Google and Facebook which do not charge any fee on the buyer side of the platform. Consequently, the revenues of these platforms depend only on the charges from the seller side, which pay to access the buyer side.

### 3.2.4 Barriers to Entry

When new companies are to establish on the market, aggravating factors that problematize the entrance might occur. Some ordinary obstacles might be economies of scale, product differentiation and absolute cost advantages for those companies already established on the market. It is important to estimate possible barriers to entry and competitive advantages when evaluating companies (Geroski, Gilbert and Jacquemin 1990).

Different industries have different barriers to entry. In the case of Internet companies and online social networks, barriers to entry are expected to be smaller than for ordinary companies. Oliva (2002) argues that the Internet reduces barriers to entry since it increases the access to channels and reduces costs. Internet is a free market and with skills in programming and technology the costs of creating a new community are small. Guthrie and Austin (1996) also confirm that the Internet is associated with small initial costs, which results in that the risk of new entrants increases.

In contrast, Dahlén (2002) identifies three different factors influencing people's receptivity to marketing, namely search costs, automaticity and Internet maturity. Further, Dahlén uses these concepts to justify why there should be high barrier to entry on the Internet. Dahlén's philosophy is that the human is convenient and therefore devotes as little time as possible to searching new alternatives. Being used to something usually leads to a small will to change the behavior. According to this, an online social network early in the market has a large first mover advantage.

### 3.3 WORKING HYPOTHESIS

The frame of references has given a summary of previous research within the problem area and presented relevant theory to enhance the understanding of online social networks. In the following section, perceived shortcomings in previous research are discussed and working hypotheses to work from are stated.

The numerous papers written in the area of CLV is an interesting approach of valuing companies. However, we believe that the model has some limitations in estimating the market value of an online social network. Many of today's online social networks seem to have other value creating factors in addition to the number of users. Obviously, the number of users is an important factor in the beginning to attract additional users, and network effects indicate that the value to each user increases with the total number of users connected to the online social network. However, in the long run the company needs revenue in order to survive. One interesting question is whether the numbers of users actually are worth anything at all without the additional services around the platform connecting its opposite sides.

After having conducted a theory chapter on the properties of online social networks and studied what characterizes these types of markets, hypotheses about possible factors determining and creating value in online social networks have been stated. As for any business, there is a constant change in what has the greatest impact on company growth. In the case of online social networks, we believe that the company must have different focus in different part of its life cycle.

Hypothesis I: *The initial value creating factor to online social networks is their ability to attract users and to derive cash flow from these.*

This is a primary criterion in order for a company to be profitable and to create network externalities. This in turn facilitates the process to attract the other party of the platform, the sellers. Since online social networks act as two sided platforms it is an interesting question to raise which side of the platform that arrived first, the users (buyers) or the advertisers (sellers). This issue is known as the chicken and egg problem. We believe that in the industry of online communities it is the users that are the primary asset. The seller side later becomes a funding measure that creates cash flows for the company in order for it to survive.

Hypothesis II: *In the long-term there are additional factors that are creating value in an online social network such as applications and synergies gathered around the platform.*

In order for the company to sustain growth, a large number of users is not enough, the network also needs to develop into a platform. The different applications around the platform will make its users willing to remain active and attract new users. It is the ability to create this kind of multilateral usage that brings value to both sides of the platform.

The hypotheses stated above suggest more emphasis on the soft values such as platform theory and network effects in addition to traditional valuation methods that mostly rely on hard values such as cash flows and financial ratios. The figure below illustrates how value could be created in an online social network.

The foundation of the company is the online social network itself which is surrounded by its users. The users are the primary asset of the company and without them, the firm cannot survive. The blank boxes in the figure illustrate the additional value drivers affecting the expected cash flows and firm value of the online social network. Throughout the thesis these blank boxes will be filled with concrete value drivers that are identified in the study. A complete picture of the figure can be seen in the analysis (p. 32).
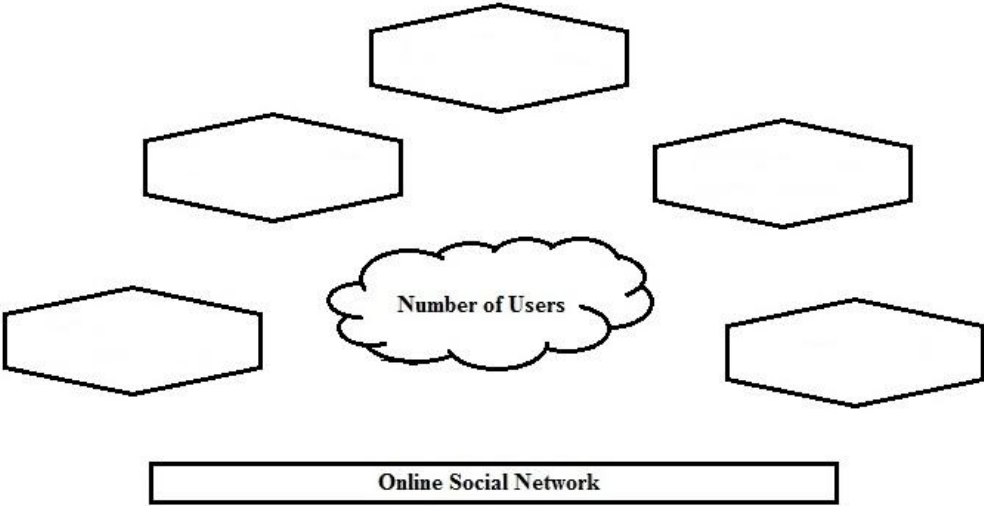
# 4. EMPIRICS

*This chapter summarizes the main results from our empirical studies conducted through interviews. The interviews were divided into two parts in order to cover different aspects of our research question. The first part covers the aspect where we look at online social networks from a functional and strategic point of view and answer questions such as how online communities generate revenue, cash flows and create benefits to its users. The second part deals with the aspect of what analysts consider value creating in social networking businesses and, consequently, which factors to focus on in a company valuation. The chapter also contains a case study of two Swedish online social networks that have been subjects for acquisitions. The purpose of the case study is to conduct a fundamental valuation of the companies and compare our calculated firm values with the purchase price paid by the acquirers.*

## 4.1 ONLINE SOCIAL NETWORKS FROM A STRATEGIC POINT OF VIEW

This section is based on an interview conducted with Rickard Eriksson, the founder of one of the world's first online community – Lunarstorm.

### 4.1.1 Background

The basic idea behind Lunarstorm was to make the Internet a broad tool for communication and digitize analog relationships. Rickard Eriksson, born in 1974, developed the structure of the website in his spare time as early as in 1989. At this time, the Internet was still highly undeveloped and Eriksson had to develop the software, programming, design and so on all by himself. In 1996 the website was named "StajlPlejs". The community became very popular and required more time and money in order to be able to connect more members, which led Eriksson to a crossroads in 1999. He had to decide whether to stake everything to take the website to the next level, or let it remain a hobby. The great interest for technology got the upper hand and at midnight to the millennium in 2000, the company Lunarstorm was founded.

*"This is greater than the industrialization and we have only scratched on the surface yet of what will happen."*

Now Eriksson needed to make money in order for the company to be profitable, and he identified two possible revenue streams. The first source to revenue was advertising. With a broad range of members with known demographics such as gender, age and residence, Lunarstorm could offer targeted advertising to their members. This opened up opportunities for advertisers to target marketing entirely to a specific audience. Lunarstorm's second alternative to create cash flows was to offer premium services to their members. However, premium services was not implemented immediately because the newly experienced dotcom bubble had created an Internet that was expected to be free from charge and Lunarstorm did not believe that members were willing to pay for these services yet. Consequently, Lunarstorm only relied on advertising revenues to begin with. An important measure the company had to focus on at this stage was to build up the number of users to get a better position in terms of traffic to advertisers.

Directly after Lunarstorm was founded, new members started to arrive to the website and the number of users grew from 43 000 members in the beginning of the year to approximately 800 000 members at year end, all at a cost of half a million. In the year of 2006 the website had 1.1 million unique visitors per week which classified Lunarstorm as Sweden's largest digital community. The majority of the members were then between 12 and 25 years old (Lunarstorm Annual Report, 2006). Later on, however, advertising revenues were not enough to cover the costs and Lunarstorm was on the verge of bankruptcy. The last resort was to launch premium services, something that came to rescue the firm's survival.

Revenues from advertising and premium services constituted Lunarstorm's total turnover, with 60 respectively 40 percent. The company also had other, additional sources of revenue such as the sale of license rights and a partnership with the mobile operator Europolitan. These collaborations were completely free of financial risk for Lunarstorm and therefore a risk free income. Unfortunately, the partnerships did not become major successes.

In 2006, Eriksson decided to leave the company because of the complexity that arises when companies grow in terms of personnel, such as leadership. Sten Mörstedt then bought the remaining shares at a value per share representing a total market value of the company equal to approximately 300 million SEK.

### 4.1.2 Success Factors Behind Lunarstorm According to Rickard Eriksson

One of the purposes with the interview was to identify various factors that led to the success of Lunarstorm according to its founder, Rickard Eriksson. It was found that these success factors basically can be subcategorized into two aspects. The first is the factors that attracted members to Lunarstorm, and the second is the underlying factors that created the cash flows for the company. Even though these two factors can be explained and discussed individually Eriksson emphasizes that one cannot successfully exist without the other. For Lunarstorm it was important to attract large volumes of traffic on the website to create cash flows, but they also needed cash flows to maintain a high volume of members.

Rickard Eriksson says that he sees himself like an amateur social anthropologist, fascinated by how people interact with each other. According to him, one important factor of success when it came to attracting members to Lunarstorm was that he tried to identify basic human social behavior and needs, and managed to digitalize them. With his interest in social anthropology in mind, he turned to high schools and colleges to identify what teenagers experience difficult and then tried to digitalize their problems. One example Eriksson mentions is how to make contact with the opposite sex, which he tried to simplify by creating a social network. He also mentions the importance of how you want people to perceive you regarding possessions and looks. Once again, he found a way to digitalize this human urge to be well perceived, and transferred it to Lunarstorm by creating a tool that let you design your own page just the way you want. Third, he talks about the importance of something called status points on Lunarstorm. This was something you received by actively participating in the social network, that is, by writing in someone's guestbook, writing in your blog, making a

new friend, getting premium services etcetera. Each of these activities was rewarded with a point that was accumulated and displayed on your own page. Rickard Eriksson says that the high status points were a non-monetary way to feel important and superior to any other in the community, the same feeling humans often strive after in real life by try getting rich or buying a fancy car. He also refers to the human collecting behavior regarding the status points. He also refers to the status point as a way to enforce good behavior on Lunarstorm. They used a system of point withdrawal if a person was malignant or behaved unreasonable on the site. This was an effective way to keep Lunarstorm clean from bullying and harassments, something Eriksson says their competitors did not manage to do and which gave Lunarstorm an advantage. All these factors mentioned above alludes to basic human behavior, which according to Rickard Eriksson is more important to understand and have an interest in, rather than being a skilled programmer and able to create a nice looking guest book. He emphasizes the importance of being able to stimulate behavior and serving the right kind of people to their members. Rickard Eriksson states that:

*"It was more the soft values and the soft analysis that contributed to the success, rather than technological things."*

The second success factor for Lunarstorm was its ability to create cash flows. In the case of Lunarstorm, revenues were derived from advertising and premium services which the users subscribed for. As mentioned earlier, to generate sufficient revenues from advertising, a website needs high volumes of traffic. The factors discussed above are contributing to generate these high volumes, but Rickard Eriksson also mentions network effects as an important contributor. He compares an online shopping site with a social network site to illustrate this.

*"If I should start an online shopping site, you do not get any additional utility of this site if you force your friends to use it as well. So it is difficult to use you as a way to get more users. While in the case of Lunarstorm, the more that uses the site, the greater your experience will become. This creates a force that makes you tell your friends to join, and that is an important contributing force which makes it possible to grow very fast to very low costs."*

According to Rickard Eriksson, the fact that Lunarstorm grew from 43 000 members to 800 000 members at a cost of 500 000 SEK in one year supports this statement.

Lunarstorm faced a couple of problems regarding the advertising in their beginning. Since they started just after the dotcom bubble, the lack of confidence in IT companies was obvious. This made it hard for Lunarstorm to find companies willing to advertise on the site. They had to make a thorough job informing and convincing companies the superiority of online social networks as a place for advertising. Rickard Eriksson exemplifies this with the following:

*"We knew that we could create a tool which enabled the advertisers to direct their message so that 16 year old girls from Säffle would receive information from a specific high school, one week before they had to choose high school."*

This illustrates the benefits with social networks from an advertising point of view. Due to the information put in by the user, Lunarstorm knew exactly which type of advertisement would be effective on one specific member.

The second way for Lunarstorm to make revenues was through premium services that members paid for. In the case of Lunarstorm it was called Pro, and it made it possible for the users to design their own pages in a more extensive way compared to regular users. As Rickard Eriksson saw it, the problem with premium services was the fact that the users were used to an Internet where everything was free, previously financed by venture capitalists. But in the year of 2002 Lunarstorm more or less had run out of equity, which forced them to try to market their premium services to survive. Pro immediately became a success, getting 100 000 subscribers within a couple of weeks, which financially saved Lunarstorm at that point.

### 4.1.3 The Future of Online Social Networks According to Rickard Eriksson

With the vast experience Rickard Eriksson possesses in the area of social networks, it was interesting to get his opinion on today's online social networks such as Facebook, including his thoughts about the future and the problems they will be facing.

Rickard Eriksson starts by explaining why he thinks Facebook is successful. He says that they currently are in an upwards going spiral of success generating new members and publicity. However, Eriksson has noticed a change in the activity of Facebook's users. In the initial stage of the company everything is new and exciting and the users will log on maybe ten times a day, which means spending a lot of time and by that generating much input on the site. Eventually the typical tendencies will come, meaning the users only log in every other day which decreases time spent and input given. Eventually, this will make Facebook more boring and risk putting Facebook in a downward going spiral instead. Even if the number of members will remain constant, the decreased traffic on the website will have a negative effect on advertising revenues. Eriksson points out that such positive cash flows are probably difficult to generate as it is.

Another problem obvious to Rickard Eriksson is the lack of alternative revenue sources aside from advertising. He compares it to Lunarstorm's premium services, and their high ability to convert regular members to paying customers. He is surprised that Facebook has not managed to find more ways to create revenues through premium services and finds it worrying that the only other big revenue source on Facebook is games like Farmville created by the company Zynga. The problem is that Facebook does not own these applications that create much of the traffic on the site.

*"They (Facebook) do not quite own their own business model. They don't own the business, they don't control it and it is dangerous."*

Overall, Rickard Eriksson is not convinced that Facebook will remain as popular as it is today. The problem to maintain high traffic on the site combined with the difficulties to create

revenues will probably have a negative effect, while he also thinks that new actors will emerge on the market.

## 4.2 ONLINE SOCIAL NETWORKS FROM A VALUATION POINT OF VIEW
This part aims at discussing and identifying the value driving factors in online social networks from analysts' point of view. Two different analysts from different companies in Sweden have been interviewed, namely Urban Ekelund from Vero Kommunikation AB and Jan Glevén at Redeye. These are analysts concentrated in the area of Internet and media companies.

### 4.2.1 Value Creation in Online Social Networks
As previous research has revealed there are no clear models used for the valuation of online social networks. Urban Ekelund at Vero Kommunikation AB, however, explains that a common tactic used in valuation is to estimate a price per active user of the network. Another approach, he argues is to base the calculation on the advertisement scope. Jan Glevén at Redeye argues that cash flow valuation is the best way to value online social networks, where earnings growth compared to the P/E-ratio should be taken into account. In general, Glevén argues, it is important to have a profitable revenue model with revenue streams and profit growth.

Glevén considers that the value of online social networks mainly lies in the number of users, but balance sheet and income statement, as well as the market position of the company should also be taken into consideration. Ekelund believes that the range and distribution power of an online social network are important factors in the valuation process. He compares these factors with the valuation of newspapers and TV channels, where a wide circulation and high viewing figures are important aspects. Ekelund refers to E-bays acquisition of Skype as an example of where distribution power was the driving force behind the purchase. At the time for the acquisition, earnings in Skype were nonexistent but E-bay expected a stronger distribution power and functional improvements in their already existing services. These synergies made the purchase justifiable for E-bay.

### 4.2.2 Focus on Soft or Hard Values?
When valuing online social networks and other companies as well, there are different approaches to what kind of values that is most important. These values have been divided into two groups, namely *soft* and *hard* values. Soft values are when focusing mainly on platform theory, network effects and so on while hard values are focusing on number of users, financial ratios, cash flows etcetera.

Urban Ekelund believes that both these aspects should be considered in the valuation, but how much weigh to put on each one is depending on what synergies the buyer sees in the acquisition. Jan Glevén agrees that both viewpoints should be combined, and proposes a division in which 85% of the valuation is based on hard values and the remaining 15% on soft values. Glevén also points out that in the case when the acquirer is more of a strategic player, soft values such as platform theory might be more important. He highlights that different values may have different importance depending on where a company is in its lifecycle. In an

early cycle, the number of users is important, but it eventually becomes more essential to create applications around the network in order to generate revenue.

## 4.4 CASE STUDY

In order to evaluate whether there are additional value drivers beside the expected cash flows for online social networks, a case study of two similar companies in the business that previously have been valued and acquired by external investors is conducted. Hopefully, this will result in a better understanding for how much of the value that actually is generated through cash flows from advertising and premium services.

### Strategic Analysis

Before conducting the valuations of the two online social networks, a strategic analysis of the industry of online social networks will be presented. Below follows a SWOT analysis summarizing the main characteristics of this industry.

| Strengths | <ul><li>First mover advantage</li><li>Strong user base creating network externalities</li><li>Low initial costs to create an online social network, having some basic skills in programming</li></ul> |
|---|---|
| Weaknesses | <ul><li>The initial possibility to be profitable</li><li>Hard to expand the business internationally</li></ul> |
| Opportunities | <ul><li>Increased availability to the Internet facilitates the emergence of online social networks.</li></ul> |
| Threats | <ul><li>An industry with quick development so there can be rapid changes in popularity for different networks.</li><li>Strong competition</li></ul> |

### 4.4.1 The Companies

As mentioned earlier, the focus of this study lies on Swedish companies since it facilitates the access to data. In this case study, two Swedish online social networks that had their peak of popularity in the mid 2000's have been chosen. The first one is the already introduced company Lunarstorm that was acquired by CLS Holding in the beginning of 2006. CLS Holding already had stakes in the company prior to this, but in April 2006 the company purchased the remaining 70% of the shares in the company to an amount of SEK 192 million. This implied a total value of Lunarstorm to approximately SEK 372 million (CLS Holding, Annual Report & Accounts 2006).

The second social network to be valued is Playahead. The community was created in its modern form in 2002, and much of its features were similar to Lunarstorm's even though Playahead never reached the same popularity in terms of number of users. Playahead was the second biggest youth community behind Lunarstorm with approximately 530 000 members when it was acquired by MTG in 2007. MTG acquired 90% of the company for SEK 102

million, implying a total market value equal to SEK 115 million (MTG AB Annual Report, 2007).

In this case study the Discounted Cash Flow (DCF) model is used to estimate the company values based on historical and expected future cash flows. We find this method the most suitable for the case study since it allows us to eliminate and only focus on the cash flows the companies generate through advertising and selling premium services. Moreover, the method requires that three essential factors have to be estimated in order to be able to perform the valuation. These factors are the beta-value of the company, the risk free market rate and the expected growth rate when the company reaches stable growth.

The DCF method also has some drawbacks. The final value attained by the analysis is fairly sensitive to changes in the estimated factors, especially in the terminal year of the valuation. This makes the outcome sensitive to too optimistic or pessimistic estimations of the future. Further, it is important to underline that all valuations are individual and subjective. The valuation process is not an exact science giving the same answer every time, but it can give a sense of direction of the potential value.

### 4.4.2 Input Determination

In this case study, the risk free market rate, equal to 3.38%, is derived from the ten year Swedish government bond rate in 2005 (Riksbanken.se, 2011). We make the assumption that these were the approximate rates CLS Holding and MTG AB had available when conducting their valuation. Also, the average returns of the market portfolio needed to be estimated in order to be able to estimate the market risk premium. Since both Playahead and Lunarstorm operated on the Swedish market, the average return on Stockholm stock exchange was appropriate to estimate the average return on the market. This exchange consists of all listed companies in many different sectors why it is expected to be well diversified and comparable with the market portfolio. The average return since 1900 equals to 11% (Handelsbanken.se, 2009) which gives a market risk premium equal to 7.62%.

The beta value estimates the specific risk premium of the company. In turn, beta is needed to calculate the weighted average cost of capital (WACC) that is used as a discount rate for the cash flows. We used a beta value equal to 2.92, estimated by Aswath Damodaran, professor at Stern School of Business at the New York University, specific for Internet companies during 2005. Once again this is chosen because of our assumption that these were approximately the data available to CLS Holding and MTG. In the terminal year a beta equal to 1.1 is used because this is assumed when a company reaches the steady growth phase (Damodaran.com, 2011).

Understanding this, we are able to test which approximate growth rates must have been estimated when the actual valuation of Lunarstorm and Playahead was performed. After this we are able to compare these values against what can be seen as rational values at the time being. The aim of this case study is to investigate whether or not the estimated factors differ

from the rational ones in order to prove that additional values besides the cash flows are taken into consideration when the acquisition price was offered.

### 4.4.3 The Valuation

When calculating the firm value of Lunarstorm respective Playahead, the question of which growth rate that could be seen as reasonable when the companies reach a stable growth rate was discussed. Damodaran argues that the stable growth rate of the company cannot exceed the growth rate of the economy the company operates in (Damodaran, 2011) Based on historic growth in the Swedish GNP, a growth rate interval between 2.6% and 3% is reasonable (Ekonomifakta, 2011). However, a slightly higher growth rate, equal to 3.5%, was used in this case study. The reason for this lays in the nature of Internet companies which includes social network companies. These types of companies tend to have a shorter lifecycle and a higher growth rate than general companies. Further, it can be assumed that neither Lunarstorm nor Playahead had reached a steady growth rate when they were acquired in 2006 and 2007, respectively. It can therefore be argued that a marginally higher steady growth rate can be applied to the valuation. An additional rate of approximately 15% has therefore been added to the stable growth rate resulting in growth rate equal to 3.5%.

The essential values of each valuation are displayed in the tables below. The entire valuation can be viewed in (Appendix 1).

| Lunarstorm | | | | | |
|---|---|---|---|---|---|
| | *2000 (Base)* | *2001* | *2002* | *2003* | *2004* | *2005* |
| Free Cash Flow | -30 342 054 kr | -10 147 972 kr | 5 534 137 kr | 4 595 511 kr | 10 557 258 kr | 15 942 349 kr |
| Cumulative WACC | | 1.1128 | 1.2882 | 1.4803 | 1.7199 | |
| Present Value of FCFF | | - 9 119 146 kr | 4 295 754 kr | 3 104 291 kr | 6 138 034 kr | |
| Present Value of Terminal Value | | | | | | 157 793 763 kr |
| | | | | | | |
| Value of Equity | | | | | | 171 572 307 kr |

| Playahead | | |
|---|---|---|
| | *2004 (Base)* | *2005* | *2006* |
| Free Cash Flow | 1 457 740 kr | - 3 087 156 kr | 1 573 326 kr |
| Cumulative WACC | | 1.1035 | |
| Present Value of FCFF | | - 2 797 481 kr | |
| Present Value of Terminal Value | | | 75 976 425 kr |
| | | | |
| Value of Equity | | | 76 721 770 kr |

# 5. ANALYSIS

*This section aims at analyzing the results of the empirics and relate to the theory chapter. The structure of the analysis will be based on the hypotheses stated earlier in the thesis.*

**Hypothesis I:** The initial value creating factor in online social networks is their ability to attract users and to derive cash flows from them.

**Hypothesis II:** In the long-term there are additional factors that are creating value in an online social network such as applications and synergies gathered around the platform.

## 5.1 IMPORTANCE OF THE NUMBER OF USERS

Throughout the interviews conducted, the respondents confirm the importance of taking into account the number of users connected to an online social network. They are the foundation for creating network effects and cash flows to the company. The users are the network's customers and in the same way that a manufacturing company cannot survive without its customer, either can online social networks.

One popular method to evaluate and estimate the value of the number of users is through the Costumer Lifetime Value (Gupta et al. 2004; Gupta 2009; Kossecki 2009). The model takes into account the activity of each user, the revenue and cost per user and the acquisition cost for each user. This model becomes a calculation of the average cash flow generated by each user, which then can be linked to firm value. However, it is doubtful that this is a relevant variable that can be compared between different companies. Imagine that two companies have the same values derived from the CLV model, but diverge in the number of users. This implies that the value of each user will be higher when the total number of users is small. The question then becomes whether this implies that the company with the higher value per user is better off. By only considering the CLV approach, that only takes cash flows derived directly from the users into account, when answering this question, the company with a higher CLV will be better off and more profitable than the company with a smaller CLV.

The statement above is only reasonable if it is believed that there are only two factors creating value in online social networks, namely the number of users and the cash flows they create directly. However, we argue that the CLV approach has certain limitations and is misleading. The results from the interviews suggest that online social networks possess additional characteristics that affect its value and that these properties need to be considered. Both Urban Ekelund and Jan Glevén point out that soft values such as network effects, platform theory and two-sided markets need to be taken into account in a valuation. We believe that these create indirect cash flows that cannot be derived from a specific user, but create expected cash flows for the social network as a whole when the total number of users grow. Glevén believes that the weigh put on each value is dependent on the acquirer's justifications, but proposes that as much as 15% of the valuation should be based on soft values. The CLV method does not take any of these soft values into account, resulting in that the firm value derived from this

approach should be an underestimation of the true firm value. A company with more users might have additional benefits in for example network effects that generate a higher value. This results in that the CLV model provides an unfair valuation that is hard to compare between different companies.

Notwithstanding, users is a very important variable to take into account when discussing the potential of an online social network and perhaps the activity of each user is as interesting as the number of user. Rickard Eriksson points out that for the network to be sustainable in the long run a large number of users is not enough, the users also have to be active. This is a problem that Eriksson can see in Facebook today, a large number of users but the interest and activity of each user is declining. A suitable key ratio to consider in the valuation can therefore be the number of page views per user. This ratio gives an indication of how popular a social network is and a decline in this ratio might indicate a decline in firm value even though the number of users is constant.

The discussions above relate to hypothesis I in the way that the number of users seems to be an important variable contributing to firm value. As Eriksson mentions, the number of users and cash flows are dependent variables that cannot exist without each other.


## 5.2 REVENUE SOURCES OF ONLINE SOCIAL NETWORKS

Even though the number of users is important, the ability to transform the interest in the network to cash flows is a critical stage for a company to be sustainable. All of the three different sources to revenue identified by Enders et al. (advertising, subscription and transaction models) can in some form be related to the online social networks studied in this thesis. According to Eriksson, it can be difficult to use advertising as the only source of income since it takes a lot of effort to attract advertisers. In the beginning of Lunarstorm, the company only relied on advertising, which nearly led to a bankruptcy. By introducing subscription and transaction fees into the revenue model, the company became profitable. This however, requires that the network has matured users that are willing to pay for the services. The same thing is happening today when the popular stream music company Spotify narrows their free services to get more people to pay for premium services. Until today, Spotify have focused on building a broad user base that has created dependence in Spotify. When launching the premium services, more people pay for the services and the company gets profitable.

Both online social networks studied in this thesis have included subscription and transaction fees in their revenue model. However, relating this into today's most popular communities Facebook and Twitter we experience that they rely less on these types of income. There are no additional premium services that users can access through payments. However, games such as Farmville that are reached through Facebook, offers the player a possibility to pay fees in order to get access to some premium features. These games are owned by Zynga and therefore the revenues of these subscriptions do not benefit Facebook directly. The absence of these additional revenue sources in today´s online social networks calls for superior trust in that advertising revenues are sufficient to cover costs. Eriksson considers Facebook's reliance in

mainly advertising as a drawback for the company since the lack of alternative revenue sources increases the operational risk. In general, we believe that by applying a broad revenue model that includes many alternative revenue sources, the company can diversify its risks and become a more stable company.

## 5.3 SENSITIVITY ANALYSIS

After having conducted a valuation on Lunarstorm respective Playahead, a sensitivity analysis of the estimated variables follows. The analysis covers the three different variables that had the biggest influence on the firm value, namely stable revenue growth, stable beta and market risk premium. The sensitivity analysis was conducted in two parts. Firstly, an individual analysis was performed for each value driver in respective company in order to understand how the company value was affected to changes in respective variable. Secondly, a total analysis on all variables was made in order to investigate which one that affected firm value the most, being exposed to increases respective decreases by 20%.

The revenue growth describes the rate at which revenues are expected to grow during the stable period. The higher the growth rate, the higher firm value since cash flows increase with higher revenues, ceteris paribus. The sensitivity analysis of both companies showed that an increase in the stable growth rate affected the firm value to a greater extent than a decrease. In the case of Playahead, the company value becomes negative when the growth rate exceeds 5.38% since this growth is equal to the cost of capital. A growth rate larger than WACC contributes to a negative denominator when calculating firm value, resulting in a negative company value. Lunarstorm has a higher cost of capital and the revenue growth rate has to exceed 9.42% in order to result in a negative firm value.

Stable growth beta gives an indication of the systematic risk of the company when facing stable growth. The higher the beta, the lower firm value since an increase in beta increases the cost of capital and results in a lower company value.

The market risk premium is the difference between the market risk and the risk free interest rate, and affects the cost of capital. The higher the market risk premium, the larger the cost of capital which affects the firm value negatively.

Analyzing the second part of the sensitivity analysis indicates that, in the case of Playahead, it is the revenue growth that has the biggest impact on firm value. An increase in growth with 20% results in a 59% increase in firm value. Beta and market risk premium has approximately equal effects, but the market risk premium has a marginally higher impact.

**Sensitivity Analysis: Playahead**
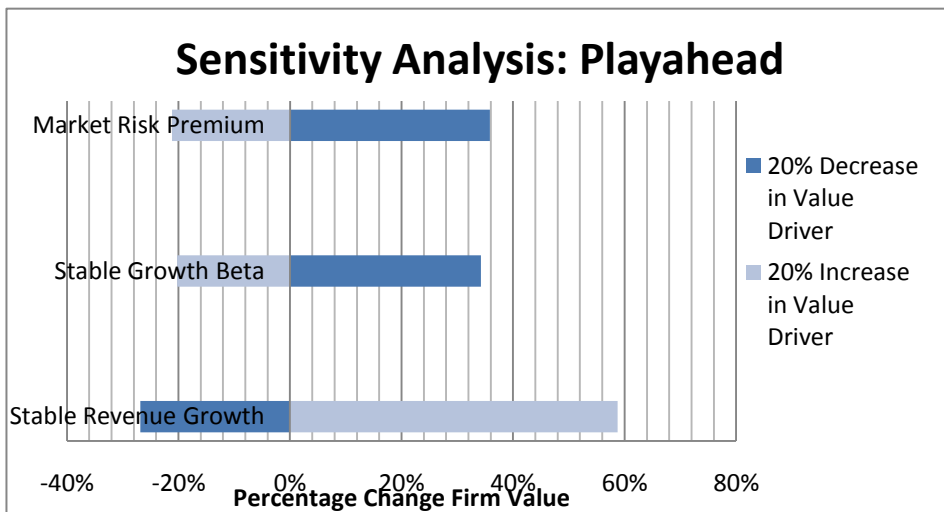
By looking at the corresponding graph for Lunarstorm it can be seen that in this case it is the market risk premium that affects the firm value the most. Stable growth beta is the second largest value driver while the growth rate affects the firm value the least. This is the opposite effect compared to the case of Playahead even though the values are calculated through the same model. Unfortunately, the lack of information about Playahead resulted in that the valuation contains fewer years than the valuation of Lunarstorm. This complicates the comparison between the two companies since the stable growth period gets bigger influence in Playahead than in the Lunarstorm case. This might explain the fact that growth rate has a bigger effect on firm value in Playahead than in Lunarstorm..



**Sensitivity Analysis: Lunarstorm**
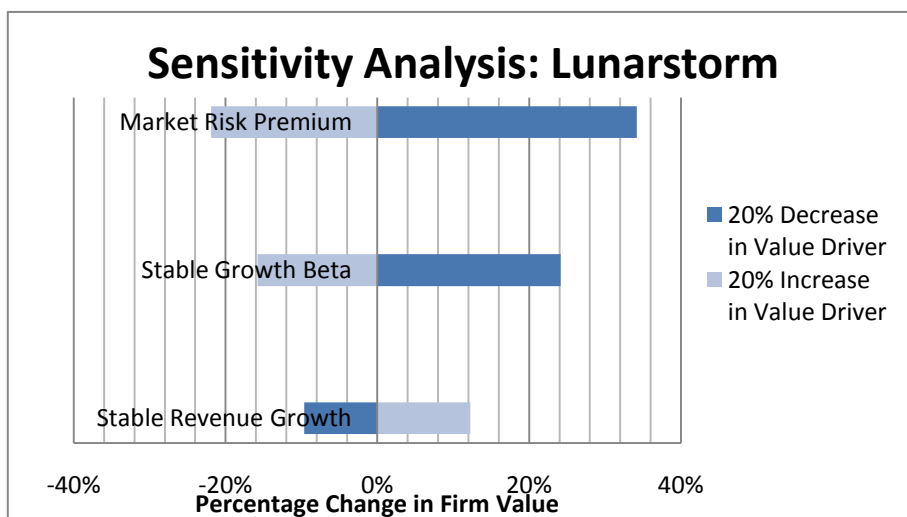
When comparing the computed firm values with the actual purchase prices for the two companies, these differ to some extent. The acquisition of Lunarstorm in 2006 amounted to a company value equal to 372 MSEK (CLS Holdings plc. Annual Report & Accounts, 2006), while the corresponding value of Playahead was 115 MSEK (MTG AB, 2011). The firm values from the case study amounts to only 46% and 67% of Lunarstorm's respective Playahead's market values at the time of acquisition. These differences can be explained from

different aspects. One possible reason might be differences in assumptions that affect firm value. Another explanation might be that the real purchase price includes additional values than those that can be discerned from the financial reports. These additional values could for instance include network effects, the number of users and platform theories, which the acquirer has taken into account.

Looking at the assumption made in the valuation, the three main variables affecting the firm value are, as mentioned earlier, stable growth rate, stable beta and market risk premium. Both beta and market risk premium are factors that are expected to be approximately the same in different valuations. The stable beta should be reasonably close to the market beta of 1.0 in all cases and the sensitivity analysis confirms that small changes in this variable do not have any major effect on firm value. Also the market risk premium ought to be relatively similar in different valuations since it is based on the market's expected return and the risk-free interest rate. The sensitivity analysis reveals that small changes in this variable are not sufficient to explain the differences in firm values. The third variable, revenue growth, seem to be the one that is easiest to interpret differently among appraisers since the individual confidence in the company varies. However, a company cannot have a stable growth rate larger than the economy itself (Damodaran, 2002). By using the goal seek function in Excel, the expected revenue growth of the acquirer can be calculated, assuming that the other variables in the valuation are equivalent. In the case of Lunarstorm, the acquirer should have assumed a growth rate of 6.8% in order to reach the same firm value as in our analysis. The corresponding figure for Playahead is 4.1%.

Studying the historical growth in Swedish GDP it has faced an average growth of approximately three percent (Ekonomifakta, 2011). This growth rate indicates that a long-term growth of 6.8% in Lunarstorm seems unrealistic. Looking at the corresponding figure in Playahead, a growth rate equal to 4.1% does not seem totally unrealistic. However, the shortage in the number of years studied makes it difficult to draw conclusions from the valuation. By adding more years to the model, the stable period does not get such a strong influence on the total value. This would result in the need for a higher stable growth in order to reach the market value of 115 MSEK. Such high stable growth seems unrealistic and in the long run the company alone would lead the economy, not be a part of it.

In accordance with previous discussions, it can be concluded that the assumptions made in the valuation alone cannot explain the large differences in corporate values. Instead, additional factors seem to function as important value drivers.

**5.4 ANALYZING THE CASE STUDY**

The main purpose of the case study was to evaluate whether or not the market values at the time being for Lunarstorm and Playahead were significantly higher than the suggested value according to a Discounted Cash Flow analysis. Such an analysis is too subjective to draw any general conclusions from, but might help to illustrate the importance of additional value drivers. As stated by Damodaran (2002), all corporate valuations are based on the present value of a company's cash flows. He also argues that if the company does not have any expected cash flows in the future, it will probably not be worth much more than its assets at that time.

The result from the valuation shows that the market value is higher than the value attained in our case study. In the case of Lunarstorm the value consists of 46% of the market value and 67% in the case of Playahead. This supports the discussion that current cash flows are far from the only factor relevant in a valuation. Both analysts Jan Glevén and Urban Ekelund agree that other values should be included in these kinds of valuations. Ekelund argues that both hard values such as cash flows and other soft values should be included, but how to distribute the weight is depending on the potential synergies for the buyer. Glevén on the other hand proposes that a division of 85% hard values and 15% soft values could be appropriate, he also emphasizes that the strategic values is individual. Further, the answer from the three interview subjects Eriksson, Glevén and Ekelund directly or indirectly confirms or mentions our proposed value drivers from the theory section.

The statements above, along with the results from our case study support the discussion that the valuation based on current cash flows is not sufficient, and that the impact from additional value drivers on potential cash flows are significant. In order to match Damodaran's (2002) argument that all corporate valuations are based on cash flows, it indicates a great difference between actual and expected future cash flows. In many historical cases, too big differences between these two can give a hint of overvaluation. In the case of social networks, we believe the lack sufficient history instead implies the need of a model that is able to identify additional value drivers that can be included in the valuation, explaining the value and supporting the second hypothesis.

We are well aware of that company valuations have more than one answer, especially when involving young companies. Even though it can be argued that the variables chosen in this valuation is the most reasonable ones according to the literature, the reality is always subjective and the view of what is rationale is relative. Therefore, a sensitivity analysis that expands the valuations and covers a wider range of variables possibly used were conducted and is presented below.

## 5.5 IDENTIFIED VALUE DRIVERS

After conducting the study, several value drivers that need to be considered when valuing online social networks have been identified. These are illustrated in the picture below.
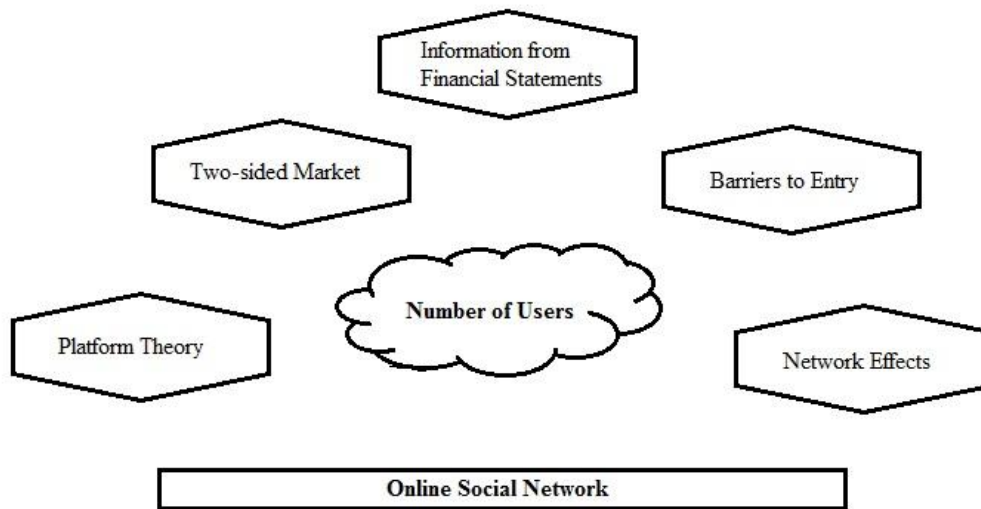


When valuing a company, information gathered from the *financial statements* are very important to get an understanding of how cash flows stream in the company. This is a very important step and without these reports it would be impossible to establish a proper valuation. However, as concluded in this thesis, cash flows alone do not seem to be sufficient to explain the high market values in today's online social networks. Instead, the help of additional value drivers must be enlisted in order to explain these values.

*The number of users* connected to the website is the foundation of a successful online social network. It is the users that attract advertisers and other stakeholders which subsequently generates income to the company. In the studied companies, the huge importance of the users and that them cannot be ignored has been demonstrated.

A direct benefit associated with the number of users connected to a community is n*etwork externalities.* In accordance with Katz and Shapiro's definition, the utility of an online social network is increasing with the number of users. This is expected to result in that the average cost for attracting new users decrease as the number of users already connected to the network increases. The fact that the costs of operating online social networks are mostly fixed, the marginal cost for a new user is a decreasing function of the total number of users. This gives large networks economies of scale that are hard for smaller networks to respond to. According to Eriksson, this results in an optimal business structure characterized by large global companies having monopoly. This is a trend that Eriksson has identified not only in the social networking industry; he is also expecting it to reflect off of most industries in the future.

There might also be some *barriers to entry* that affect the value of the company. At the foundation of the network there might be some aggravating factors, but by having a first mover advantage this might also turn out into a positive effect on the competition for a specific company. As Glevén mentions, market structure is an important factor to consider in

connection with a valuation. The fact that Facebook seems to have a monopoly today strongly affects its market value. The large number of users and network effects it has acquired is a strong driving force and complicates and impedes the entry for competitors. By having the majority of all users, additional users will also join that network. There is no utility in joining another network when the bulk of the users belong to another one.

The *platform theory* is an important characteristic of today's online social networks. Analysts agree that a social network's ability to transform the website into a platform is a critical stage for the future success. As Hagel et al. points out the platform organizes users and is a foundation for their interactions. According to Gawer & Henderson (2007) the platform also enables members to use the network in a wider context where applications are developed. The possibility to play games, share connections etcetera on Facebook expands the ability for users, and thus also the interest, to exploit the platform. For the company to be able to turn into a platform it is essential not only to sustain users' interest in the network, but also to open up new opportunities for creating revenues.

The platform theory is nearly connected to the theory of *two-sided markets* described by Rochet and Tirole, but also Bakos and Katsamakas. Online social networks with characteristics of both a platform and two-sided market simplify the work to sustain interest in the network.

**5.5.1 Value Driver's Importance During the Life Cycle**
Based on the analysis above, and with support from the theory, important value drivers in online social networks have been identified. All of these value drivers have their individual effect on the network, which contributes to the true market value of the company. However, having studied the different factors from a theoretical and empirical perspective they seem to have different effects on the firm value depending on where in its life cycle the company is. In the diagram below, three different phases that a typical online social network experiences during its initial, growth and stagnation period are illustrated. In this diagram, the market value of the company is derived from the number of users and their rate of activity in the different phases over time.
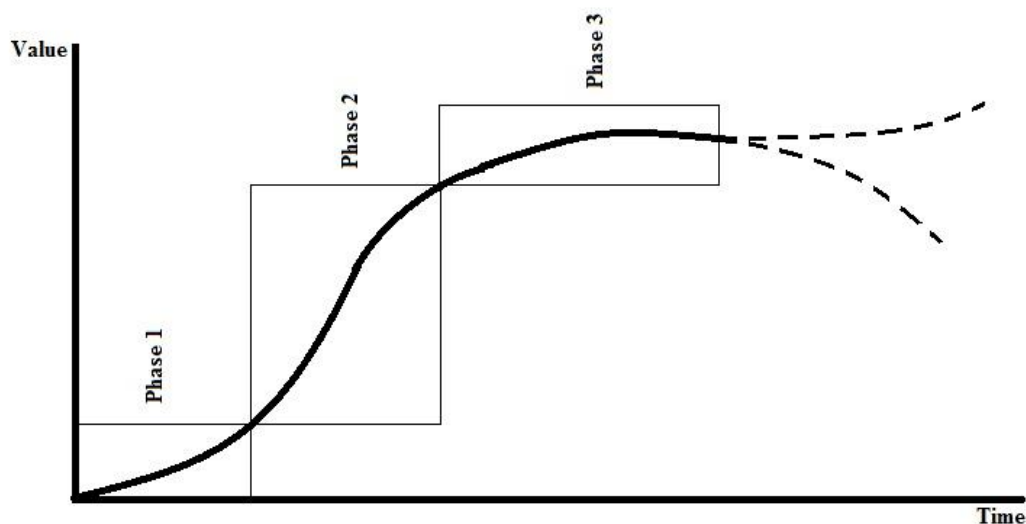
*Phase I: The initial phase of a social network. History shows that the network in this phase often is a non-profit, leisure activity. It mostly consists of either a local collection of users or a collection of users that share a specific interest or opinion.*

*Phase II: This phase is characterized by a broader user base, network externalities and attention from advertisers, resulting in an upward going spiral. The social network often becomes a company with aim to make profits.*

*Phase III: The network has reached a peak in the number of users and the upward going spiral starts to pan out. The primary task for the company now is to keep up the activity on the site. This is the most crucial part during the social network's lifetime, deciding whether it will survive, or if the users will move on to a new, more active site.*

In the initial phase of the life cycle, the number of users is an essential variable that determines the market value of the online social network. It is the ability to attract a large number of users that determines the size of the network effect and whether or not the company should be successful. The larger the number of users, the larger the network effects and the possibility for the company to reach the next step of its life cycle. Both Lunarstorm and Playahead experienced a rapid growth in their number of users.

When the company has reached phase two, it has the possibility to grow. The biggest challenge is to design a revenue model that makes the company profitable. In this stage, the most important factors to focus on are how to make money, through advertising, subscription and/or transactional fees. Looking at Lunarstorm, they utilized all three different sources of revenue in their model. Subscription was the most important one since the introduction of premium services made the company profitable and saved it from bankruptcy. Also Playahead applied a broad revenue model.

In the third phase, the company has won plaudits from users, and hopefully it has also created a sustainable revenue model. The most important challenge has changed from being to attract users into maintain users. Since the competition on the market is very high and barriers to entry low, the company needs to be competitive and satisfy their users. In this phase, platform theory and two sided markets become important factors to manage. The company needs to take the online social network into the next level and transform it into a platform where users find new applications and uses on the website. Otherwise, there is a risk that users lose their interest, activity slow down and revenue decreases, leading to a smaller firm value. The

company will probably be replaced by any competitor that can better satisfy users. This is illustrated as the dashed downward curve in the diagram. If the company manages to maintain the interest it might be able to survive and turn into a more stable growth, illustrated by the dashed upward curve in the diagram. Having studied this phase, it seems to be the hardest one to manage since the market is characterized by rapid changes and high competition. Lunarstorm and Playahead never turned out into successful platforms, which can be one of the reasons why their popularity declined and ousted by more popular online social networking sites such as Bilddagboken and Facebook.

Both Lunarstorm and Playahead faced a downturn in usage somewhere in the end of phase three, implying that they did not manage to maintain the interest of their users. Facebook is currently in the end of the second phase or just in the beginning of phase three. The biggest challenges for Facebook is therefore yet to come when entering the phase that historically has shown to be the most difficult one to manage. It can be suggested that the acquisition value of a social network company could be influenced by in which phase the company currently is in, derived from the expected future growth rate.

# 6. CONCLUSION

*In this chapter the results from the study will be presented with the aim to answer the research question. Further, limitations with the study and suggestions for further research will be stated.*

## 6.1 STUDY RESULTS

The aim of this study was to "*emphasize value drivers that, in particular, have effect on the market value of online social networks"*. From the study conducted, the following results have been achieved.

All respondents in this study have confirmed the existence of additional value drivers in online social networks except from those derived from financial statements. However, a true valuation model adapted to these companies seems absent. The case study in this thesis resulted in firm values that in both companies were below the purchase prices paid by the acquirers. Furthermore, in accordance with the sensitivity analysis, it did not seem realistic for the assumptions stated in our valuations to deviate so much from the ones pledged by the acquirers that it would explain the differences in firm values. Together with the information from the interviews, this result suggests that cash flows derived from financial statements alone are not sufficient for explaining the high market values of the companies included in the case study. Therefore, it is suggested that additional characteristics for online social networks are considered in the valuation process. These characteristics create expectations on additional cash flows in the future, which in turn increase the company value.

This study does not give any absolute answers to which value drivers that are important to consider in a valuation. However, it hopefully has increased the understanding of factors that might have an effect on the value of online social networks. According to the result in this thesis, proposed value drivers are:

- Network Externalities
- The number of users
- Platform Theory
- Two-sided market
- Barriers to entry

Even though the results from the case study can only be applied on Lunarstorm and Playahead, it can be expected that all online social networks operate in the same way and share the same characteristics. Therefore, the importance of considering additional value drivers should also be applicable on the social networks popular today, such as Facebook and Twitter. As Internet has evolved rapidly during the last years, possible applications connected to it have expanded. This implies that the importance of platform effects should be even bigger today, giving a possibility for online social networks to increase their revenues.

To summarize, we want to emphasize the importance of looking beyond financial information and take additional value drivers' effect on expected cash flows into consideration when estimating the value of an online social network.

## 6.2 LIMITATIONS OF THE STUDY

The main drawback of this study is that the results only rely on a small sample with few respondents and a case study comparing solely two different companies. The consequence of this limitation becomes that the findings of the study cannot be generalized throughout the industry of online social networks, but only adapted on the two companies included in the case study.

## 6.3 SUGGESTIONS FOR FURTHER RESEARCH

After having conducted the study some areas where future research would be interesting have been identified. To begin with, it would be interesting to conduct a quantitative study, similar to our case study, on previously acquired online social networks. It would be favorable if this quantitative study was not limited to only include online social networks in Sweden, but instead take online social networks from all around the world in consideration. By investigating a larger sample the possibility to generalize the results increases. Hopefully this generalization might give an indication of the proportion of the total market value that can be derived from financial reports. This in turn might facilitate future acquisitions and give an indication of how much of the valuation that should be based on soft values. Hopefully, this research can end up in a real valuation model for online social networks that is based on the Discounted Cash Flow model. As online social networks are an increasing phenomenon today, the number of acquisitions is also likely to grow, enabling a more quantitative study.

A further development of the research gets implementable as more companies become public or increase their public disclosures. By analyzing the calculated firm values and comparing them to the market values of the companies, a discussion whether these high market values are realistic or not would be interesting. Is a market value that exceeds revenues tenth of times justifiable or is the market ineffective, creating a bubble? These are interesting areas to focus on in future research.

# 7. REFERENCE LIST

## 7.1 BOOKS

Blumberg, B., Cooper, D.R. & Schindler P.S. (2008). *Business Research Methods.* London: McGraw-Hill Higher Education.

Bryman, A. (2011). *Samhällsvetenskapliga Metoder.* Malmö: Liber AB.

Dahlén, M. (2002). *Marknadsföring I Ny Media – Marknadsföring i Kubik.* Malmö: Liber AB

Damodaran, A. (2002). *Investment Valuation: Tool and Techniques for Determining the Value of Any Asset.* New York: John Wiley & Sons.

Damodaran, A. (2010). *The Dark Side of Valuation: Valuing Young, Distressed and Complex Businesses.* Upper Saddle River: Pearson Education Inc.

Fyrkman, D. & Tolleryd, J. (2003). *Corporate Valuation: An Easy Guide to Measuring Value.* Harlow: Financial Times Prentice Hall.

Hagel, J., & Armstrong, A. (1997). *Net Gain: Expanding Markets through Virtual Communities.* Boston: Harvard Business School Press

Jacobsen D.I. (2002). *Vad, Hur och Varför? Om Metodval I Företagsekonomi och Andra Samhällsvetenskapliga Ämnen.* Studentlitteratur

Koller, T., Goedhart, M. & Wessels, D. (2010). *Valuation: Measuring and Managing the Value of Companies.* Hoboken: John Wiley and Sons.

Patel, R. & Davidson, B. (2003). *Forskningsmetodikens Grunder: Att Planera, Genomföra och Rapportera En Undersökning.* Studentlitteratur

## 7.2 ARTICLES

Bakos, Y. & Katsamakas, E. (2008). Design and Ownership of Two-Sided Networks: Implications for Internet Platforms. *Journal of Management Information Systems.* Vol. 25. Issue 2. pp 171-202

Boyed, D.M. & Ellison N.B. (2008). Social Network Sites: Definition, History and Scholarship. *Journal of Computer-Mediated Communication,* vol. 13, No 1, pp 210-230.

Enders A., Hungenberg, H., Denker, H.P. & Mauch, S. (2008). The Long Tail of Social Networking: Revenue models of social networking sites. *European Management Journal,* Vol 26, No 3, pp 199-211.

Gawer, A. & Cusumano, M.A. (2008). How companies become platform leaders. *MIT Sloan Management Review* 49(2):28-35

Gawer, A & Henderson, R. (2007). Platform Owner Entry and Innovation in Complementary Markets: Evidence from Intel. *Journal of Economics & Management Strategy.* 16 (1), pp 1-34.

Geroski P., Gilbert R.J. & Jacquemin A. (1990). *Barriers to Entry and Strategic Competition.* Chur: Harwood Academic Publishers.

Gneiser, M., Heidemann, J., Klier, M., Landherr, A. & Probst, F. (2010). Valuation of Online Social Networks Taking Into Account Users' Interconnectedness. *Information Systems and E-business Management.* Online publication 2010-11-23.

Gupta, S. (2009). Customer-based Valuation. *Journal of Interactive Marketing.* Vol. 23

pp.169-178

Gupta S., Lehmann, D.R. & Stuart J.A (2004). Valuing customers. *Journal of Marketing Research.* Vol. 41, No 1. pp. 7-18

Gustafsson, G & Smith, E. (2011). Spotify Pares Back Free Music Service. *Wall Street Journal Europe*. 29 (No. 55), p19.

Guthrie, R.A. & Austin, L.D. (1996). Competitive Implications of the Internet. *Information Systems Management.* Vol. 13, Issue 3. pp 90-93.

Hagel, J., Brown, J.S. & Davison, L. (2008) Shaping Strategy in World of Constant Disruption. *Harvard Business Review* 86(10):80-89

Katz, M.L. & Shapiro, C. (1985). Network Externalities, Competition and Compatibility. *The American Economic Review,* Vol. 75, No 3, pp. 424-440.

Kossecki, P. (2009). Valuation and Value Creation of Internet Companies – Social Network Services.

Lee, S.M., Taewan, K., Yonghwi, N. & Byungku, L. (2010) Success Factors of Platform Leadership in Web 2.0 Service Business. *Service Business,* Volume 4, No 3, 89-103

Leiner, B.M., Cerf, V.G. et al. (2009). A Brief History of the Internet. *Computer Communication Review,* Vol. 39, No 5. pp 22-31.

Li, S., Liu, Y. & Bandyopadhyay, S. (2010). Network Effects in Online Two-Sided Market Platforms: A Research Note. *Decision Support Systems.* Vol. 49 Issue 2. pp 245-249

Oliva, R.A. (2002). A Framework for Success. *Marketing Management.* Vol. 11. Issue 1. pp 39-42.

Rochet, J-C & Tirole, J. (2003). Platform Competition in Two Sided Markets. *Journal of The European Economic Association.* Vol. 1. Issue. 4. pp. 990-1029

Rothaermel, F.T. & Sugiyama, S. (2001). Virtual Internet Communities and Commercial Success: Individual and Community-level Theory Grounded in the Atypical Case of TimeZone.com. *Journal of Management*. 27, p297-312.

The Economist (2010). Another Bubble. *Business Source Premier, EBSCOhost.* , 397, 8713, p. 130

**7.3 ELECTRONIC SOURCES**

"Social networking web site" A Dictionary of Computing. Ed John Daintith and Edmund Wright. Oxford University Press, 2008. Oxford Reference Online. Oxford University Press.Goteborg University Library. http://www.oxfordreference.com.ezproxy.ub.gu.se/views/ENTRY.html?subview=Main&entry=t11.e6468. Last Accessed 22th Feb 2011

Aswath Damodaran. (2011). *Levered and Unlevered Betas by Industry.* Available: http://pages.stern.nyu.edu/~adamodar/. Last accessed 25th Apr 2011.

Aswath Damodaran. (2011). *Growth Rates and Terminal Value.* Available: http://pages.stern.nyu.edu/~adamodar/pdfiles/ovhds/dam2ed/growthandtermvalue.pdf. Last accessed 25th Apr 2011.

Ekonomifakta. (2011). *Bruttonationalprodukt - BNP.* Available: http://www.ekonomifakta.se/sv/Fakta/Ekonomi/Tillvaxt/BNP---Bruttonationalprodukt/.

Last accessed 27th Apr 2011.

Facebook. (2011). *Faktablad om Facebook.* Available:
http://www.facebook.com/index.php?lh=0ca55585e177bdc070210b905470ac2b&eu=c
UFZ14apXMNfP5JTuQRuuA#!/press/info.php?. Last accessed 12th Apr 2011

Handelsbanken. (2009). *Indexcertifikat Sverige.* Available:
(http://hcm.handelsbanken.se/Global/Certifikat/Broschyr_Indexcertifikat_Sverig
e.pdf). Last accessed 29th Apr 2011.

MTG. (2007). *MTG Köper 90 % av Intenetcommunityn Playahead.* Available:
http://www.mtg.se/sv/Medier/Pressmeddelanden/MTG-KOPER-90-AV-
INTERNETCOMMUNITYN-PLAYAHEAD/. Last accessed 27th Apr 2011.

Pepitone, J. (2011). *SEC May Ease Private Stock Rules.* Available:
http://money.cnn.com/2011/04/08/technology/SEC_shareholder_limit/index.htm
Last accessed 12th Apr 2011.

Rickard Eriksson. http://rickarderiksson.me/

S. Craig, A.R Sorkin (2011). *Goldman Offering Clients a Chance to Invest in Facebook.*
http://dealbook.nytimes.com/2011/01/02/goldman-invests-in-facebook-at-50-
billion-valuation/?scp=1&sq=facebook%20goldman%20sachs&st=Search,
accessed 2001-02-03

S. Grocer (2011). *Twitter & Facebook: A History of Social Media Valuation.*
http://blogs.wsj.com/deals/2011/01/03/twitter-facebook-a-history-of-social-
media-valuations/, accessed 2011-02-03

Sveriges Riksbank. (2011). *Statsobligationer.* Available:
http://www.riksbank.se/templates/stat.aspx?id=16740. Last accessed 27th Apr
2011.

Twitter (2011). *About Twitter.* Available at: http://twitter.com/about Last accessed 3rd Feb
2011.

U.S SEC. (2009). *Q&A: Small Business and the SEC.* Available:
http://www.sec.gov/info/smallbus/qasbsec.htm. Last accessed 12th Apr

**7.4 OTHER PUBLICATIONS**

CLS Holding plc. Annual Report & Accounts (2006)

Lunarstorm Annual Report (2000-2006)

MTG AB Annual Report (2007)

Playahead Annual Report (2004-2006)

**7.5 INTERVIEWS**

Interview with Rickard Eriksson, Varberg 21/3-2011.

Urban Ekelund, 29/3-2011

Jan Glevén, 6/4-2011

# APPENDIX 1 – INTERVIEW QUESTIONS TO ANALYSTS

1. Where do you think the value in online social networks is created? Is it only the companies' cash flows that are taken into consideration or are there others aspects that should be factored in?

2. Is there any specific valuation model used to estimate the market value of internet companies such as online social networks?

3. How much emphasis is put on hard values respectively soft values in a valuation?

4. Do you have any perception of what was believed to be the main value drivers in the valuation of Lunarstorm and Playahead?

5. Today online social networks such as Facebook is valued to extraordinary amounts, most recently by Goldman Sachs. Do you think these amounts are realistic taking only the company itself in consideration or are there strategic motives behind these values? Can different strategic interests give misleading valuations?

# APPENDIX 2 – DETAILED VALUATION

| Lunarstorm | 2000 (Base) | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|
| Revenue Growth Rate | | | | | | 3,5% |
| Revenues | 1 073 229 kr | 12 790 586 kr | 24 706 288 kr | 38 219 297 kr | 50 189 754 kr | 71 132 295 kr |
| Operating Margin | -2685,79% | -33,52% | -15,93% | 17,28% | 16,78% | 20,83% |
| EBIT | - 28 824 717 kr | - 4 287 093 kr | - 3 936 173 kr | 6 604 941 kr | 8 423 434 kr | 14 815 918 kr |
| Taxes | - kr | - kr | - kr | 30 348 kr | 13 725 kr | 1 932 919 kr |
| EBIT(1-t) | - 28 824 717 kr | - 4 287 093 kr | - 3 936 173 kr | 6 574 593 kr | 8 409 709 kr | 16 748 837 kr |
| + Depreciation | 605 742 kr | 819 041 kr | 4 322 506 kr | 2 944 088 kr | 2 935 691 kr | 4 117 526 kr |
| - Capital Expenditures | 1 243 794 kr | 5 463 276 kr | 273 996 kr | 624 247 kr | 1 962 364 kr | 5 557 743 kr |
| - Chg WC | 879 285 kr | 1 216 644 kr | - 5 421 800 kr | - 4 298 923 kr | - 1 174 222 kr | - 633 729 kr |
| **FCFF** | **- 30 342 054 kr** | **- 10 147 972 kr** | **5 534 137 kr** | **4 595 511 kr** | **10 557 258 kr** | **15 942 349 kr** |
| NOL | 28 757 605 kr | 33 044 698 kr | 36 980 871 kr | 30 375 930 kr | 21 952 496 kr | 7 136 578 kr |
| Terminal Value | | | | | | 271 401 154 kr |
| | | | | | | |
| **Cost of Capital Calculations** | | | | | | |
| Tax Rate | 28,00% | 28,00% | 28,00% | 28,00% | 28,00% | 28,00% |
| Debt Ratio | 28,63% | 62,83% | 43,19% | 46,94% | 41,36% | 26,14% |
| Beta | 2,92 | 2,92 | 2,92 | 2,92 | 2,92 | 1,10 |
| Cost of Equity | 25,63% | 25,63% | 25,63% | 25,63% | 25,63% | 11,76% |
| Cost of Debt | 3,88% | 3,88% | 3,88% | 3,88% | 3,88% | 3,88% |
| After-tax cost of debt | 2,79% | 2,79% | 2,79% | 2,79% | 2,79% | 2,79% |
| Cost of Capital (WACC) | 19,09% | 11,28% | 15,77% | 14,91% | 16,19% | 9,42% |

| The Valuation | |
|---|---|
| PV of FCFF during high growth phase = | 4 418 932 kr |
| PV of Terminal Value = | 157 793 763 kr |
| Value of Operating Assets of the firm = | 162 212 695 kr |
| Value of Cash & Non-operating assets= | 9 511 756 kr |
| Value of Firm = | 171 724 451 kr |
| Value of Outstanding Debt = | 152 144 kr |
| Value of Equity = | **171 572 307 kr** |

| Playahead | 2004 (Base) | 2005 | 2006 |
|---|---|---|---|
| Revenue Growth Rate | | | 3,5% |
| Revenues | 13 018 966 kr | 20 385 214 kr | 28 215 000 kr |
| Operating Margin | 25,03% | -2,78% | 0,73% |
| EBIT | 3 258 838 kr | - 567 291 kr | 207 000 kr |
| Taxes | 735 221 kr | 76 469 kr | 63 000 kr |
| EBIT(1-t) | 2 523 617 kr | - 643 760 kr | 144 000 kr |
| + Depreciation | 375 297 kr | 679 814 kr | 925 000 kr |
| - Capital Expenditures | 340 134 kr | 1 870 982 kr | 1 449 000 kr |
| - Chg WC | 1 101 040 kr | 1 252 228 kr | - 1 953 326 kr |
| **FCFF** | **1 457 740 kr** | **- 3 087 156 kr** | **1 573 326 kr** |
| NOL | - | - | - |
| Terminal Value | | | 83 843 681 kr |
| | | | |
| **Cost of Capital Calculations** | | | |
| Tax Rate | 28,00% | 28,00% | 28,00% |
| Debt Ratio | 60,24% | 66,89% | 71,20% |
| Beta | 2,92 | 2,92 | 1,10 |
| Cost of Equity | 25,63% | 25,63% | 11,76% |
| Cost of Debt | 3,88% | 3,88% | 3,88% |
| After-tax cost of debt | 2,79% | 2,79% | 2,79% |
| Cost of Capital (WACC) | 11,87% | 10,35% | 5,38% |
| | | | |
| **The Valuation** | | | |
| PV of FCFF during high growth phase = | - 2 797 481 kr | | |
| PV of Terminal Value = | 75 976 425 kr | | |
| Value of Operating Assets of the firm = | 73 178 944 kr | | |
| Value of Cash & Non-operating assets= | 3 733 450 kr | | |
| Value of Firm = | 76 912 394 kr | | |
| Value of Outstanding Debt = | 190 625 kr | | |
| Value of Equity = | **76 721 770 kr** | | |