

R & D-Intensive Companies

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A Qualitative Study of the Communication and Valuation of R&D

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Abstract

This paper aims at investigating R&D intensive companies' communication strategies regarding their R&D. Further, it seeks to examine the possible implication these strategies have on covering analysts' valuation processes.

By performing a case study on four Swedish R&D intensive companies, we have found two different strategies that we have chosen to call the restrictive and the open communication strategy. We have found that the different strategies are appropriate for different companies depending on industry specific factors. Further, our study shows that analysts sometimes use rather arbitrary methods and subjective judgements when valuating the potential outcome of R&D in these companies.

Key Words: R&D, Investor Relations, Communication, Analyst, Valuation

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1. Introduction

1.1 Background

The activity on stock exchanges around the world has increased significantly over the last decades. Many private households today have significant parts of their wealth in shares or funds. This has led to an increased interest in the stock exchange among the public. This is something media have realised and their coverage of these areas has therefore increased. Further, the creation of the Internet has led to information spreading much faster and easier than ever before. Because of this rapid development, the importance of the Investor Relations function has increased. Information needs to be controlled in order to make sure that the regulations about public disclosure are met. The Internet has also greatly facilitated transaction procedures, which is another reason for the increased activity of small private investors. These investors are often attracted by high volatility, where the potential payoffs are high. Many R&D-intensive companies are therefore interesting to them. Their future performance depends largely on the outcome of their R&D, which can be very uncertain.

When evaluating companies, analysts look at several different factors, such as the annual report, management, market outlook and competition. Normally, the financial statement, especially the income statement, is the highest ranked source of information.¹ Concerning R&D intensive companies, there is often a lot of potential value in future products that are not yet developed. When analysts value these companies, these future values should be captured in order to obtain a reasonable valuation. Certain difficulties in the valuation process exist, since the future of these companies can involve a lot of uncertainty. We expect analysts of R&D intensive companies being less focused on pure financial information and more focused on information regarding future strategy and the development of the research. These factors are essential in order to obtain a reasonable forecast of R&D intensive companies. Overlooking them, would mean overlooking a considerable portion of these companies' values.

¹ Hellman, (2000), p. 25

Some R&D intensive companies are considered highly valued, especially in comparison with their current earnings. This could be explained by high expectations on future products. We believe that the communication from companies regarding these products is an important factor in the markets perception of them. Therefore it is essential that the Investor Relations (IR) department has a deliberate strategy in this matter. Considering the relatively high valuations of some R&D intensive companies, there is reason to believe that a fairly large portion of their values are attributed to future products. Thus, it is interesting to look closer into the valuation process, in order to see how certain or uncertain these valuations are. Since many people see analysts as experts whose predictions have a high degree of reliability, it is of common interest to look at how reliable and well founded the analysts forecasts really are. The field of valuation in R&D intensive companies is especially interesting, seeing as a fairly large proportion of their values are more uncertain and farther in the future than is the case for most other companies.

The interesting observations above make R&D intensive companies an interesting choice of study. Further, we believe that there is a gap in the prior research on this subject. Studies regarding R&D intensive companies have mainly focused on whether their share is correctly priced and whether different accounting principles affect valuation. We have not found any in depth studies regarding how companies choose a communication strategy and how this choice might affect the analysts' valuation process. Therefore, this is what we will be focusing on in our study.

1.2 Purpose and question

In the light of the text above, the purpose of this essay is to look closer into the communication between R&D intensive companies and the analysts covering them, and to look at the analysts' process when valuating R&D. More specifically, we are interested in looking at the companies' communication strategies and the analysts' perception and subsequent valuation of the R&D in these companies. The two questions that we will try to answer are:

How do R&D intensive companies choose to communicate their R&D? and What implications might these communication strategies have on analysts' valuation process of R&D?

1.3 Delimitations

In order to keep a specific focus and to keep within the limits of scope of this essay, we have limited our study to the communication and subsequent valuation process of R&D. This means that we have not looked closer into what strategies the companies have when communicating information about issues other than R&D. Further, we have not focused on the analysts' valuation process of operations other than R&D, although we have obtained some information on this as well. The valuation of other operations is done using the commonly accepted discounted cash flow model, and our aim with this essay is not to look into whether the analysts use this model in an orderly fashion. Since this essay focuses on the phenomenon of R&D, these other factors in communication and valuation are not relevant for this particular study.

Further, one important point to make is that this is a strictly qualitative study. Although we look at different communication strategies' possible implications on the valuation process, we do not look at the valuation itself. This means that we do not investigate whether our studied companies R&D is fairly valued, but only how the analysts use R&D information in their valuations.

Further, we have limited ourselves to only interviewing Swedish analysts. Although some of the companies studied have a few foreign analysts covering them, we have not included these in our study, due to practical issues.

1.4 Disposition

In chapter two, we describe the methods we have chosen with which to conduct our study and discuss how we have ensured its quality. Chapter three and four consist of our chosen theory and prior research. Focus in this essay lies on prior research, since there are few theories that suit our study well. In chapter five we introduce our case companies by presenting relevant company information. Chapter six contains the findings from our gathering of information. This part is based on the interviews we have carried out, and is divided into two parts that correspond to our two main questions in this study. In chapter seven we discuss our findings. In this section, we first discuss issues directly related to the two questions central to this study. After that we present some theories and research that we believe relevant in a slightly broader sense, and connect this to our study. Chapter nine consists of a summary of our discussion and focuses on which conclusions, if any, that can be drawn from our findings. In the last chapter we make suggestions for further research.

2. Method

2.1 Approach

The method can be described as the way in which one goes about researching the question at hand. Which methods that are appropriate to use differ a lot depending on the kind of problem one looks at. In this section, we will present the methods that we have chosen for this particular study.

2.2 Qualitative or quantitative method

Whether one chooses to have a quantitative or a qualitative method is dependent on the phenomenon studied. When exact data is available and measurable and a precise answer can be generated from this data, the quantitative method should be used. The qualitative method, on the other hand, does not require any quantifiable data to reach a conclusion. Instead, it is used when trying to understand and interpret a given phenomenon. This method emphasizes the researchers' interpretation of the data and is often based on unquantifiable findings, such as attitudes and values. Focus lies on process rather than results and discovery rather than proving.² The advantage of the quantitative method is that an exact answer can be obtained through the data used. The qualitative method, on the other hand, enables a deeper and more independent interpretation of the issue at hand. However, this method also has some limitations, especially in relation to the difficulty to measure the results in a reliable way.

Considering the characteristics of these two methods, we believe that a qualitative study is what suits our line of question best. In order to perform a case study of R&D intensive companies and the communication and valuation process of R&D, we will need to look deeper into the activities of the companies and the analysts covering

² Merriam (1994) p. 9

them, and this will best be accomplished through a qualitative study. Our aim is to obtain a deeper knowledge as to why companies act in certain ways and to look at the analysts' valuation processes. Therefore, we have chosen a qualitative study, since we believe it will best help us in answering our question.

2.3 Connection between theory and the empirical material

There are two main approaches regarding the connection between theory and the empirical material; the inductive and the deductive approach. The inductive approach starts with an empirical data collection and means that the observations in the cases studied can be generalized to be valid in other cases. From the observations of the researcher a common rule or theory is created. Thus, the collection of data takes place without first having identified a theoretical framework. The deductive approach on the other hand starts from general theories and apply these theories on the data collected.³ A third approach has also been introduced, the abductive approach. This is a combination of the two approaches mentioned above and it is often used in case studies. When using this approach, the empirical material is developed gradually and at the same time the theory is developed and adjusted. This means that both the empirical and the theoretical material are developed and analyzed in the light of each other.⁴

Our use of theory and prior research is best described by the abductive approach. Firstly, we have used the case study to carry out our study. Further, we started our research by collecting general empirical material and conducting our first interviews. After that, we looked for theories and prior research that were appropriate for our study. We then continued to collect data and further develop our theoretical material simultaneously.

³ Alvesson & Sköldbberg, (1994) p. 41

⁴ Alvesson & Sköldbberg, (1994) p. 42

2.4 Case Study

A case study is the preferred and natural way in which to carry out our research, especially since we are using an abductive, qualitative approach. A case study involves an intensive, holistic description and analysis of a particular phenomenon or unit.⁵ One important issue that we have considered is whether to look at one or several entities in our study.⁶ Researchers have differing views in this matter, on the basis of their opinions regarding depth versus width. The first view is called the traditional view, and suggests that the purpose of case studies is to give a rich and nuanced description of a certain context and that this deep insight can only be obtained by studying a single environment.⁷ The opposing view claims that multiple cases allow researchers to replicate and increase the individual cases and that this will lead to a better understanding of patterns.⁸

This study is based on multiple case companies. Our decision regarding this is mainly based on the fact that the companies in the category we are looking at differ in many aspects, and an interesting factor in our essay is to see what implications these differences might have. Thus, multiple cases are needed even though some of the depth of the study is lost.

2.5 Selection of companies

When selecting the companies to use for our study, we started by looking at it from a broad perspective. One of our first criteria was that the companies should be listed at the Stockholm Stock Exchange and that they should have an IR-division of some kind. Obviously, considering the nature of our research, the companies were also required to have a certain amount of R&D. When looking at the nature of R&D intensive companies on the stock exchange, we realized that there were several different types of companies that were R&D intensive. One group of companies had a

⁵ Merriam, (1994) p. 34

⁶ Yin, (1994) p.38

⁷ Dyer & Wilkins, (1991) p. 613-619

⁸ Eisenhardt, (1991) p. 620-627

large current cash flow and could live well of their launched products, while developing new ones. Their relative level of R&D was smaller compared to the other R&D intensive companies. Another group of companies had a higher relative level of R&D and these companies were mostly in the biomedical industry. Here, two subgroups could be found, one with positive cash flow and one with, many times, a relatively large negative cash flow. The relative amount of R&D in these companies was often significantly high.

We have chosen to look at companies from both of the groups presented above. Two of our subjects belong to the first group of companies and will be handled quite similarly. The other two companies we are looking at belong to the second group, one of them with a positive cash flow and the other with a negative. Since the two groups differ to a large extent in their handling of information and valuation, we feel that it is of interest to look into both groups and analyze them in the light of their differences.

When we selected our case companies, we encountered several difficulties. This was partly due to the fact that there are a limited number of R&D intensive companies listed on the Stock Exchange, and that some companies were not willing to participate in our study. This has lead to our case companies differing on a couple of accounts, which might have a negative impact on their comparability. Firstly, the companies are of different sizes, which results in them having different degrees of analyst coverage. Further, this also leads to differences with regards to size of the IR department and the amount of time that is spent on IR issues. The companies have also been listed on the stock exchange for different amounts of time, which might have implications on the development of IR.

2.6 Empirical material

Our empirical material consists of interviews and written information. We have carried out interviews with employees responsible of IR in the four companies and analysts covering the companies in question. We feel that interviewing people from both sides has given us a broad perspective of the phenomenon at hand. Additionally, we have interviewed two journalists that cover R&D intensive companies. They work at two of the leading Swedish business journals, *Veckans Affärer* and *Affärsvärlden*. By this procedure, we have been able to confirm our findings by receiving similar information from different sources that do not have any obligations towards each other. This has enhanced the validity of our study and has allowed us to reach conclusions based on several people's testimony. Further, interviewing different actors has made it possible for us to better understand the issue at hand. It has also guided us in what questions to ask, since each interview gave us an increased knowledge about the problem area.

There are two different kinds of interviews; structured and unstructured.⁹ When using the structured interview method, the questions asked are decided in advance and the same questions are often posed to several different people in order to be able to compare the answers. An interview based on the unstructured method, on the other hand, is based on broader questions that can be altered depending on the interviewee's answers.

In this study, we established a number of questions that we asked all of the interviewees who worked in the companies. We then adjusted the questionnaire to suit each specific person we met in order to obtain answers to company specific questions. During the interviews we allowed the interviewees to answer rather freely on the questions asked. The same process was used when we interviewed the analysts, with a different set of base questions. This way of conducting interviews can be said to be a hybrid of the two methods mentioned above, a semi-structured method. This means that the interviews had the character of a governed conversation.¹⁰

⁹ Merriam, (1994) p.87-88

¹⁰ Merriam, (1994) p.87-88

When we conducted our interviews, we decided not to use a tape recorder. Instead, one of us asked the questions, while the other wrote down the interviewees answers. A disadvantage when using this method is that information can be missed, due to the difficulty of writing down everything that is said. Further, it is hard to use direct quotations, since the answers are often written in a shortened version due to lack of time. However, we decided to use this method despite its disadvantages. We believe that a tape recorder might make the interviewees uncomfortable and less willing to speak freely. Additionally, we sat down immediately after every interview and wrote down the answers when they were still fresh in our minds, which decreases the risk of missing important points.

We are aware that the information we have received during our interviews could be biased in several aspects. The interviewees might have withheld information that could make them look bad and they might have overlooked information that could have been important to our study. Still, we believe that by interviewing actors with different perspectives and loyalties, we have been able to decrease the possible information bias. Further, we have secured the truthfulness and openness of the analysts by allowing them to be anonymous in our empirical material. This made it possible for them to speak more freely about the valuation process and their views regarding the companies.

Finally, we have used written material, mainly in the form of different company reports and brokers notes. This material has given us a foundation to start from and has allowed us to find material that has been important in order to know which questions to ask the interviewees.

2.7 The quality of the study

The quality of a study is normally estimated using two concepts; validity and reliability. Validity is often divided into two categories. External validity refers to the degree to which the results of the study are applicable in general and internal validity refers to how well the study corresponds to reality and whether the results really capture what it intends to capture.¹¹ Reliability refers to the extent to which the results of a study would be the same if the study was repeated.¹²

2.7.1 Internal Validity

Concerning the internal validity, we have tried to secure this in several ways. Although it is said to be impossible to observe a phenomenon without changing it, we have made an effort to present our findings in a correct and unbiased manner. Further, we have been careful to present the interviewees positions and statements as close to their actual words as possible. We have done this in order to reduce the impact of our own personal ways of looking at the world.

We have used multiple sources of information when gathering our material. We have interviewed several different people in different positions and we have looked at a large body of written material related to our study. We have both been present at the interviews, and afterwards we have discussed the information we have received to see that we have the same opinion regarding its meaning and relevance. We have also asked similar questions to the same interviewee in order to determine whether the information we receive is internally consistent. Further, we have let many of our interviewees look at our written empirical material and comment on it. They have also proposed changes where they find it appropriate. In later stages of our study, we have let several people with no prior relation to our study read and comment on our results. Due to the measures we have taken to enhance the internal validity of this study, we

¹¹ Merriam (1994) p.183

¹² Merriam (1994) p.181

believe that it corresponds relatively well to reality, and that we have indeed measured what we intended to.

2.7.2 External Validity

The restrictions of a case study have the potential to compromise the external validity, due to the limited number of entities that are studied. In our study, we have looked at four different companies, which somewhat enhances the external validity as compared to looking at one single organisation. Further, we have provided a rich description of the phenomenon studied. This gives an extensive basis of information that can be used as a foundation for possible generalisations. We also believe that many of the underlying factors to the studied phenomena are similar for other companies in the same situation as our case companies. Thus, it is reasonable to believe that our findings could to some extent also be applicable on a more general level.

2.7.3 Reliability

In a qualitative case study, the concept of reliability cannot be applied in a meaningful way. This is because it is in its nature that the results will differ if the study is repeated.¹³ Since reliability is closely related to internal validity, researchers have argued that one should focus on strengthening the internal validity instead of the reliability of a study. They argue this on the basis that it is impossible to have internal validity without reliability.¹⁴ Therefore, we have focused on having a strong internal validity, which in turn strengthens our reliability.

¹³ Merriam (1994) p. 182

¹⁴ Merriam (1994) p. 181

3. Theory

3.1 Agency theory

An agency relationship is said to have been established between two or more parties when one acts as *the agent* for the other party, *the principal*. The agent acts for, on behalf of, or as a representative for the designated principal. Practically all contractual arrangements contain significant properties of agency. The relationship between employer and employee or the state and the governed are examples of this.¹⁵

Agency theory is based on the assumption that all individuals act in their own self-interest. It is further assumed that the interests of the agent differ from those of the principal. Normally, the principal is said to be solely focused on financial results, while the agent has other interests as well. Company stock is held by many owners (the principals), who can reduce their risk by owning shares in many companies. Therefore, these owners are risk neutral, while managers (the agents) cannot as easily diversify away their risk, hence they are risk averse.¹⁶

Principal-agent problems arise when there is imperfect information and when one individual's actions have an effect on another individual. In many situations, the agent has an information advantage over the principal and a problem arises since the agent's actions are not easily observable. Thus, the principal does not know exactly what actions the agent undertakes or will undertake. Normally, the payoffs to the agent differ from those to the principal and therefore the agent will in general not take the actions which the principal would prefer him to take.¹⁷ This difference in preferences between the agent and the principal, and the agent's information advantage over the principal, may induce the agent to misrepresent information to the principal. This phenomenon is referred to as moral hazard.¹⁸

¹⁵ Ross, (1973) p. 134-139

¹⁶ Anthony & Govindarajan, (2003) p. 582

¹⁷ Marsh, (1992) p. 446-452

¹⁸ Anthony & Govindarajan, (2003) p. 583

3.2 The strategic planning process

The strategic planning process describes the steps a company should take in developing a strategic plan for marketing communication. It consists of five different steps:

1. Identifying the target. This step involves identifying new users or focusing upon the existing ones. The communication strategy will differ depending on which of these two groups a company focuses on. Once a company has identified the appropriate user groups, a profile must be made of them. It is important to know their attitudes and behaviours that are relevant to the company's strategies.
2. Understanding target audience decision making. Once a company has selected a target audience, it must gain knowledge of how that group makes purchase decisions. Companies need to know this in order to affect the purchase decision positively. Questions to be focused on are: Who is involved in the decision making? How do they go about it? Where can communication influence this process? Companies need to understand how the target audience goes about choosing and purchasing a product. When this knowledge is acquired, the company will be in a position to determine how to best influence the decision process positively and where in the decision process communication is most important.
3. Determine the best positioning. This step involves the particular communication positioning that a company should adopt. Here one needs to consider if the position the company is in presently is the desired one, or if repositioning should be considered in order to get a stronger competitive advantage. This step also involves how to present oneself to the target audience and what benefits one has that gives a unique advantage.
4. Develop a communication strategy. When doing this, companies must first establish their communication objectives by selecting the desired communication effects.
5. Set a media strategy. The company must select the best communication options to deliver their message. This step requires a careful consideration of

the processing requirements of the message, and the selection of communication options that will help facilitate that processing.¹⁹

¹⁹ Percy & Elliott, (2005), p.62-65

4. Prior research

4.1 Lev and Sougiannis

In their study published 1996, the authors study the capitalization, amortization and value-relevance of R&D. In Statement of Financial Accounting Standards No 2, it is claimed that generally no direct relationship between R&D costs and specific future revenue has been demonstrated, even with the benefit of hindsight. E.g. three empirical studies failed to find a significant correlation between R&D expenditures and increased future benefits, as measured by subsequent sales, earnings, or share of industry sales. This presumed absence of a relation of R&D costs and subsequent benefits was a major reason for the FASB's decision in 1974 to require full expensing of R&D outlays in financial reports. In their study, Lev and Sougiannis find evidence that the association between R&D expenditures and subsequent earnings is in general both statistically significant and economically meaningful, which clearly contradicts the FASB's findings.

The authors find that the average duration of R&D benefits ranges from approximately five to nine years. The different durations are mainly due to the ability of companies to benefit from the innovations, i.e. most importantly to prevent others from copying or imitating them. Further, they find that R&D investments contribute, on average, to future earnings and cash flows. Both the annual net investment in R&D and the cumulated R&D capital are value-relevant to investors. The authors also examine whether investors fully recognize the value-relevance of R&D information when reported or if they only adjust partially for the R&D expensing. They find that firms' R&D capital is associated with subsequent stock returns, which means that estimated R&D capital does not appear to be fully reflected contemporaneously in stock prices. This could be the result of the mispricing of securities, i.e. investors underreaction to R&D information or it may reflect an extra-market risk factor associated with R&D capital. To summarize, the authors find that R&D capitalization

does indeed yield statistically reliable and economically relevant information, which contradicts FASB statement No 2.²⁰

4.2 Lev, Radhakrishnan and Ciftci

Lev et al examine the stock market valuation of R&D leaders in their article from 2005. The growth of R&D intensive sectors over the last decades and the following increase in R&D spending leads to the question of whether stock prices reflect the information related to R&D activities. This is an important question since R&D expenditures comprise a large part of activities that result in intangible assets, and since information on R&D included in financial statements is often meagre and inadequate. If the stock market is inefficient in grasping R&D related information, this could suggest the need for improvements in disclosure regarding such activities. Earlier studies have shown that there is a positive association between R&D intensity and future abnormal returns. This is consistent with investors' underreaction to new information enclosed in increased R&D spending. However, some research has found that such positive future abnormal returns are a compensation for the additional risk associated with R&D activities. Lev et al investigate which of these lines of reasoning are correct. They introduce the term "Leader", which is a term for firms with R&D intensity greater than the average in their industry. Leaders are found to have sustained future profitability, and lower stock return volatility and earnings variability than the rest of the industry, *ceteris paribus*. I.e. while stock return volatility is positively associated with R&D expenditures, it is significantly smaller for the leaders in an industry. Thus, their perceived risk is lower. This means that the argument of incomplete risk control does not appear to be a reasonable explanation for the future abnormal returns. They also find that an innovation strategy enhances stock value in the long-run on average and that high R&D spending leads to higher performance in the future. Further, the authors show that financial analysts consistently revise Leaders' long-term growth estimates downwards. This suggests that analysts react to current earnings or stock price movements and consequently penalize leaders in their long-term outlook. An alternative reason for this penalization could be that the lack of

²⁰Lev & Sougiannis (1996) p.107-138.

information on R&D productivity influences the analysts' earnings forecasts. Another thing found was that the standard deviation of different analysts' forecasts was rather high for the leaders, which is most likely due to lack of information. The future abnormal returns show that analysts, although being sophisticated financial intermediaries, do not mitigate the lack of information concerning R&D. It appears that the stock market does not incorporate the leaders' potential for sustained future profits. Even though the leaders' current profitability is often low, their future profitability is high. However, the market does not recognize that their future profitability is higher than for the rest of the industry until the profits are realized. This reveals the need for firms to create effective communication strategies with investors so that the information schism can be reduced.²¹

4.3 Chan, Lakonishok and Sougiannis

In this article, the authors investigate whether stock prices contain a correct value of corporations' R&D. In an efficient market, the value of a company's R&D should be reflected in the stock price and no correlation between R&D intensity and future stock returns should exist. Further, a large amount of R&D intensive companies do not have a lot of tangible assets and are dependent on future achievements. These achievements are often highly unpredictable and will not be materialized in the near future. Due to the high costs related to R&D, many ratios, such as price-to-earnings and market-to-book that are used by investors will be misleading. When looking at these ratios for R&D intensive companies, they appear to be traded at too high a multiple, which implies that their stocks are expensive. Attention has also been given to the fact that investors have short-term horizons and therefore fail to capture the pay-offs of long-term investments such as R&D.

In their research, Chan et al find that R&D activity represents a large and rising proportion of companies' resources. Further, they find that immediate expensing of R&D leads to misrepresenting values on earnings and book values. The risk of mispricing is significant if investors mechanically use these values when evaluating

²¹ Lev et al. (2005)

company shares. The authors' results suggest that, on average, companies that have R&D earn a rate of return that does not differ from those companies that do not have R&D. However, R&D may have effects on the companies' financial performance that goes beyond average stock returns. Even though the companies give more information regarding R&D than what is provided in the financial statements, the investors are still not fully informed about the R&D. One consequence of this may be increased uncertainty for companies with a large proportion of R&D resulting in increased volatility and cost of capital for these kinds of companies.²²

4.4 Marsh

Marsh has given the following outline of the short-term phenomenon:

Financial markets together with the major players in them, investment analysts, fund managers and institutional investors, are too short-term oriented. As a result the stock market places too much weight on current profits and dividends. This in turn causes companies to be managed according to the same short-term horizons as their investors²³.

4.5 Adolfsson et al

The pressure from the capital market and the benefits to managers for current results in terms of income and share prices is said to lead to managerial short-term behaviour. This can lead to adverse consequences both for the company itself and for neighbouring communities which support the company, due to insufficient attention given to competitive products in the future. This paper has tested how short-termism affects decisions on R&D in Swedish companies. In a similar study in Britain, it was found that firms which perceive short-term pressure from the capital market tend to adapt their behaviour towards short-termism. This in turn leads to R&D sometimes

²² Chan et al (2001) p. 2431-2456

²³ Marsh (1992) p. 446-452

being neglected and something to be trimmed in times of recession. The Swedish study did not confirm these findings. Instead, it found that short-termism does not affect companies' decisions regarding R&D. This might be because Swedish firms tend to base their R&D-budget on a strategic plan. This indicates that financial performance, and thereby pressure for short-term results, has less influence on managerial behaviour. Swedish companies were found to believe that if strategic planning regarding R&D is reduced to financial equations it will fail. Therefore it is reasonable to believe that the pressure from the market does not play an important role for R&D strategies in Swedish companies.²⁴

4.6 Trueman

In his article, Brett Trueman looks into how analysts do their forecasts. Analyst forecasts are often used as a proxy for investors' earnings expectations. An implicit assumption behind this is that the forecasts reflect analysts' private information in an unbiased manner. However, Trueman finds that this assumption is not necessarily valid. Instead, he finds that under certain circumstances, analysts prefer to release forecasts that are close to prior earnings expectations, even if a more extreme forecast is justified by their private information. Further, the likelihood that analysts release forecasts similar to those previously released by other analysts is greater than could be justified by their own information. These kinds of actions are known as herding behaviour. It has been shown that forecasts of analysts with greater ability to predict earnings are less influenced by this herding behaviour than those of weaker analysts. This is most likely a matter of reputation. Further, research has shown that the forecasts of analysts that does not "follow the crowd" are often more accurate.²⁵

²⁴ Adolfsson et al (1995)

²⁵ Trueman et al. (1994) p. 97-124

5. Company information

5.1 Elekta

Elekta is an international medical-technology group. The company is a supplier of advanced radiation oncology and neurosurgery solutions and services for precise treatments of cancer and brain disorders. Approximately 60 % of Elektas sales come from the oncology business, where the company is the second-largest supplier in the world of equipment used for treating cancer with radiation. Elektas neurosurgery business is dominated by the non-invasive Leksell Gamma Knife which is used mainly for treatment of tumours. This product stands for about 25 % of Elektas sales and has no direct competition, except for alternative treatments.²⁶

5.2 Micronic

Micronic Laser Systems is a world-leading manufacturer of high-end laser pattern generators for the production of photo masks. The company also distributes metrology systems for display photo masks. These products are used in the manufacturing of television and computer screens. In the display market, the company has a unique position since their laser pattern generators are industry standard.²⁷

5.3 Biovitrum

Biovitrum is one of the largest biopharma companies in Europe. The company conducts research and develops new pharmaceuticals both for widespread diseases and for diseases not that common. The company's main focus is medicine for obesity, inflammation, blood-diseases and diabetes. The main contributor to the company's

²⁶ www.elekta.com

²⁷ www.micronic.com

current sales is the protein-based drugs that Biovitrum develops and produces on a contractual basis.²⁸

5.4 Diamyd

Diamyd Medical is a rather young global biotechnology company. The company focuses on developing therapeutics for diabetes, pain and cancer. Today, Diamyd is in a research and development phase, and their products have yet to reach the market. The company's farthest developed product, Diamyd, is a GAD-based therapeutic for people with diabetes.²⁹

5.5 Financial figures

	Elekta	Micronic	Biovitrum	Diamyd
Market Capitalisation ³⁰	13 682	2 703	5 233	1 306
Sales ³¹	4 421	1 276	937	0.75
Operating result ³²	453	172	130	-33
Equity/Assets ratio ³³	0.35	0.55	0.63	0.95
R&D/Sales ³⁴	7 %	24 %	61 %	2707 %
P/E – ratio ³⁵	40	14	30 ³⁶	-33
Volatilitet ³⁷	22 %	34 %	n.a.	65 %
Beta ³⁸	0.8	1.6	n.a.	2.4

(All monetary numbers are in MSEK)

²⁸ www.biovitrum.com

²⁹ www.diamyd.com

³⁰ www.avanza.se 2006-12-05

³¹ Latest annual review for each company

³² Ibid

³³ Ibid

³⁴ Ibid

³⁵ www.avanza.se 2006-12-05

³⁶ Computed as market cap / earnings 2005

³⁷ Ibid

³⁸ Ibid

6. Empirical Findings

In this section, we will present the result of the interviews that we have carried out. There are several ways in which to illustrate empirical material. One way is to present the interviews source by source, which gives a clear picture of the views of each separate interviewee. However, in this essay we believe it is better to use a slightly different approach that will give a better picture of the problem at hand. We intend to first give an account of the companies' communication strategies. After that, we will present the material regarding the valuation process, which will mainly be from the analysts' point of view. Within each of these two categories, we will present the companies separately. Lastly, we will present some different opinions regarding the valuation of Diamyd. We do this in order to demonstrate the complexity of the valuation process of a company like Diamyd, who is valued solely on future products.

6.1 Communicating R&D

6.1.1 Investor Relations within Elekta

The IR department in Elekta consists of Peter Ejemyr, Group Vice President of Corporate Communications, and two staff members. Elekta's attitude towards the covering sell-side analysts is to see them as a sort of "sales force" for the company's shares and Elekta believes that an important goal of their IR program is to keep analysts informed and motivated. They also spend time trying to get more analysts to cover the company, especially from the larger banks. One major goal of their IR is to have a high but yet motivated valuation, since an unmotivated high valuation creates unrealistic expectations and can lead to lower long-term valuation of the company. Peter Ejemyr estimates that the IR function can have an effect of approximately +/- 10 % on the share price, depending on the competence and ambition of the IR staff. Especially, good, long term IR can dampen the negative effect of bad news by being transparent and attentive. Peter Ejemyr believes that if Elekta would scale down R&D

investments, thus improving margins in the short-term, this could have a positive impact on the share price in the short run. However, the board and the company have a more long-term focus, and therefore it is not a strategy that is being used.³⁹ Further, one of the analysts says that signals of a decrease in R&D spending can actually lead to negative effects, since it is seen as a sign that the company might run into problems in the future.⁴⁰

6.1.2 Elekta on communicating R&D

Elekta talks as little as possible about ongoing R&D projects. Focus lies instead on communicating information about their existing products. There are several reasons why Elekta have chosen such a restrictive communication strategy regarding their R&D. One is that the company needs to focus on their existing products. If there would be a lot of communication about future products, this would have a negative impact on current sales. The salespeople would want to start selling the future products and, even more important, the customers would not want to buy existing products if they knew that a later version would reach the market in the near future. Further, some of Elektas products are on a highly competitive market. This is another reason that they do not want to release any information about future products, since competitors could benefit from this. Releasing information early could also create pressure to deliver on the R&D department, which is not seen as a positive thing. Another aspect of this is that when information is released early, the analysts become more impatient and they get more difficult to handle until the product reaches the market. Peter Ejemyr also points at the benefits of keeping information about future products from the market. When Elekta presents a new product, it is often close to being ready for launching. Thus, the uncertainty regarding the product is manageable.⁴¹

³⁹ Interview Peter Ejemyr

⁴⁰ Interview Analyst

⁴¹ Interview Peter Ejemyr

He also says that today, the analysts have a fairly strong confidence in the company, a position reached by the fact that Elekta in general have been delivering according to what has been projected and communicated, even if timing always is an issue. This creates respect and above all reliability. If Elekta were to inform about future products in earlier stages, there would be a larger risk that something would go wrong later, or be significantly delayed, which would reduce the confidence that Elekta has in the market. Peter Ejemyr says that there is a risk both regarding the development of new products and regarding the products on the market. The company's marketing department does as much as possible to decrease the market risk, since they have such a good insight in what the market requests.⁴² Further, one analyst says that the main risk within the medical-technology sector normally lies in the later stages, that is when the products have reached the market. Thus, analysts do not perceive Elektas R&D as being as uncertain as it is for many other R&D intensive companies.⁴³ The fact that Elekta keeps quiet about their R&D is further confirmed by the analysts covering the company. E.g. one analyst states that on Elektas last Capital Markets Day, there were questions about the pipeline, but the company did not respond to any of them. When Elektas latest major product launch, Leksell Gamma Knife® Perfexion™, came out on the market earlier this year, the analysts say that it came as a surprise. One analyst further says that he would have preferred to get the information a little earlier, since he wants as much information as possible. At the same time, he states that he understands that it can be dangerous to release information early, since this can be of benefit to competitors.⁴⁴

6.1.3 Investor Relations in Micronic

In Micronic, it is the CEO and CFO that handles the IR function, and all communication with analysts goes through them. They see it as important to keep the relationship with the analysts at a professional level. The CFO dedicates a lot of his time to the IR function and Micronic has been able to obtain a high coverage from analysts relative to the company's size. Micronic is in a cyclical and capital intensive

⁴² Interview Peter Ejemyr

⁴³ Interview Analysts

⁴⁴ Ibid

business. The company gives statements regarding expected sales and order intake for the remaining part of the current year and press releases major orders. The analysts have been able to forecast the company quite well.

6.1.4 Micronic on communicating R&D

Micronic does not communicate the success or setbacks of R&D. Until a new product is launched, they keep as quiet as they can. At or just before launch is the time that they release information about the product. However, they do communicate the reasons for changes in the amount of R&D spending. Carl-Johan Blomberg does not believe that a decrease in R&D spending could have a positive effect on the share price, unless there are fundamental reasons for it. The one time they officially communicate information about their R&D is during their Capital Markets Days. There, they talk in more general terms about the direction in which they are going and larger projects. However, as Carl Johan Blomberg points out, many of the analysts do not understand the complicated issues of their R&D. Further, there are only about ten customers that buy Micronics products. These customers do not want information about projects that they are involved in to become public, since they are competing against each other. The customers are the ones that create internal pressure to perform. Many have specific demands that need to be solved in the R&D department, which is very customer driven. It is important that the products developed are in line with what the customer wants and therefore Micronic has a commercial direction when developing new products. The analysts covering Micronic respect that there are official channels they have to go through to obtain information. Thus, the pressure comes mainly from the customers and not the analysts.⁴⁵ Analysts covering Micronic largely confirm that the company releases practically nothing concerning their R&D. They do not seem to perceive this as something negative, since the company has such a large current cash flow.⁴⁶ Further, Carl Johan Blomberg estimates that the market risk is higher than the technical risks when developing new products, which would

⁴⁵ Interview Carl-Johan Blomberg

⁴⁶ Interview Analysts

indicate that the analysts are able to have a certain degree of trust in the company's ability to complete products in the portfolio.⁴⁷

6.1.5 Investor Relations in Biovitrum

In Biovitrum, The IR department consists of Anders Martin-Löf, who is Director of Investor Relations. The CFO also plays an important role in daily communications and he works close to the IR department. Biovitrum is presently working on getting as many analysts as possible to write about the company. Many of them have already followed the company for several years, since Biovitrum is a large player in the market. The company strives to obtain a fair valuation, and not the highest possible, since this can backfire. Anders Martin-Löf points out that a too high valuation is not good to have in their line of business. The company has sales from existing products, as well as a large R&D department. Therefore, Biovitrum is not like many other biomedical companies that have practically all of their value in the research portfolio. Further, they do not have as high burn rate as those companies. Therefore, the analysts focus on cash as well as on the research portfolio.⁴⁸

6.1.6 Biovitrum on communicating R&D

Biovitrum starts to inform the market about the progress of their R&D from early on in their projects. In later phases, practically all information about the progress of the projects is communicated. The results of the clinical studies can be very value creating for the company. Therefore, press releases are used in order to get the information out as fast as possible and so that everybody gets the same information at the same time. For a company such as Biovitrum, it is considered normal that some projects fail along the way, which is why they are not afraid to inform the market in stages when the uncertainty is still high. However, the impact of failure is still fairly large. Analysts do not pressure the company that much for more information about

⁴⁷ Interview Carl-Johan Blomberg

⁴⁸ Interview Anders Martin-Löf

their R&D, since they have such a large cash flow from current operations. Even though the analysts do try to find out more about the different projects in the pipeline, this is not something that has any impact on the information released. The pressure to release products as fast as possible is instead mainly due to the situation that all pharmaceutical companies are in. Every day of a project costs a vast amount of money, which creates a pressure on the R&D department. As Anders Martin-Löf states; “The R&D department should feel pressure!”⁴⁹

Regarding the amount spent on R&D, Anders Martin-Löf says that it is possible to vary that amount from year to year. However, if the amount spent increases, it is important that the company communicates the reasons for the increase. This is due to the fact that the investors want to make sure that the money goes to projects that are value creating for the company. If additional money has to be spent on R&D because a project is entering a new phase, this is not perceived as something negative by the analyst. However, if the projects are more expensive than expected and therefore require more money, this is not viewed well.⁵⁰

6.1.7 Investor Relations in Diamyd

The IR function at Diamyd is mainly operated by the CEO. Today, Diamyd is covered by four analysts of whom one is paid by the company. Although Diamyd constantly seeks more analyst coverage, the company cannot put much effort into it, mainly because they do not have the time. However, they do see it as important to create a good relationship with the analysts that is based on a give and take policy. A fast growing and evolving company like Diamyd experiences that every analyst looks at the company in their own way, even though there are also certain models that they have to follow. Some analysts simply believe more in the company’s projects and focus more on the commercial aspects, such as market situation and potential sales, while other look more at the product and historical performance. This might be due to the fact that the analysts have different academic and professional backgrounds and thus they focus on different areas. As such an evolving company, Diamyd is hard to

⁴⁹ Interview Anders Martin-Löf

⁵⁰ Ibid

value since everything is based on expectations and since the company is constantly changing⁵¹

Today, the IR function in Diamyd is mainly of a communicative nature. The reason for that is mainly due to the limited time. However, as the company develops and grows, there will likely be more focus on financial issues as well.⁵²

6.1.8 Diamyd on communicating R&D

Progress and setbacks in Diamyds R&D projects are communicated through press releases. The analysts normally follow up the press releases by asking the IR-department more detailed questions regarding the news. Since so much is dependent on the outcome of the company's R&D projects, the information regarding this is interesting for the analysts and they are constantly trying to get information that they can take advantage of. The listing rules on the Nordic Stock Exchange stress that it is important to only communicate public information to the analysts. The analysts try to get as much information as possible and there have been cases when analysts have been trying to get information from other sources than the company. E.g. investigators at the hospitals where Diamyd are running tests have been contacted and asked about the status of current projects. However, there are legal restrictions that forbid those involved in Diamyd projects to give any information.⁵³

6.2 Valuation

6.2.1 Analysts valuation of Elekta

Since Elekta is a profitable company that has a large amount of current sales, their financial information is what is most important to the analysts. Normally, the analysts position themselves somewhere around the guidelines that the company has, and their

⁵¹ Interview Diamyd

⁵² Ibid

⁵³ Ibid

position depends largely on the communication with Elekta.⁵⁴ The analysts use somewhat different methods when valuating the company. However, they all put a lot of focus on the products that are already on the market. One analyst states that he takes into account several factors when valuating R&D. He looks at historical R&D development, customers, and on how much is being spent on R&D. Another analyst says that he mainly looks at the underlying factors, such as market situation and competition. He asks himself the question of what future products will contribute to the company, and uses historical R&D performance as a guideline. At the same time he says, somewhat paradoxical, that this is hard since he does not know what the company has in their pipeline, seeing as Elekta keeps this quiet.⁵⁵ Elekta feels that the focus of the analysts is their order book, the competition, already launched products, and prospects for further margin improvements.⁵⁶

6.2.2 Analysts valuation of Micronic

The analysts of Micronic say that the company is mostly valued based on current products that are relatively easy to value.⁵⁷ They sometimes contact customers to obtain information on how the products are working out, in order to obtain more information to base their valuations on.⁵⁸ One analyst says that he does not know much about the company's R&D and that this is not something he is interested in finding out more about either. Since the company is mature, he looks a lot at historical performance for R&D when valuating Micronic. Another analyst says that the potential future revenues of R&D are too far in the future for him to take into consideration and put a value on. Therefore, he uses historical R&D development as an indicator for future performance. However, he further states that just because the company invests a lot in R&D, this does not automatically mean that this will result in increased sales and profit in the future.⁵⁹

⁵⁴ Interview Peter Ejemyr

⁵⁵ Interview Analysts

⁵⁶ Ibid

⁵⁷ Interview Carl-Johan Blomberg

⁵⁸ Ibid

⁵⁹ Interview Analysts

6.2.3 Analysts valuation of Biovitrum

Biovitrum uses in house estimations to value their R&D projects. They calculate peak sales for each project and then estimate the probability of success for that project. For each phase that a project completes, the probability of success increases. This means that the value of a project increases significantly when it enters a new phase. However, if a project spends longer than expected in a phase, the risk of failure is perceived larger. Patents last for 25 years and completing a product normally takes ten to fifteen years in the biomedical industry. This means that there are approximately ten years in which Biovitrum can earn money on a product, which is a factor included in the valuation model.⁶⁰

When valuing Biovitrum, the analysts use a standard discounted cash flow model. In addition to this, they include an estimated value of the R&D portfolio in order to reach the full value of the company. The method for obtaining the value of the R&D portfolio is similar to the method used by Biovitrum themselves and completion of a phase in a large project can have a significant impact on the share price. However, analysts adjust the probability of success in different ways, for example some of them look at results of similar projects made by competing companies. Further, the analysts say that every additional amount spent on R&D should be put on value creating projects. Normally, the company communicates which R&D projects money is spent on. One analyst says that it would be possible to hide this, but only in the short-term. In the long run, it will be evident if the money spent on R&D is put into the right projects that are value creating for the company.⁶¹

6.2.4 Analysts valuation of Diamyd

Diamyds R&D is valued using the same kinds of models that Biovitrum uses, described in the section above. These valuation models are used both by the company and the analysts, although the results can differ. The analysts change their probabilities of success as new information is received if this is deemed necessary.

⁶⁰ Interview Anders Martin-Löf

⁶¹ Interview Analysts

These changes have a large effect on their valuation and thus on the subsequent share recommendation. This is due to the fact that the main risk in the biotechnology industry lies in the early stages. Once a good product is developed, it practically sells itself. Other factors that affect the valuation are competition and the general market development.⁶²

The analysts' valuations of Diamyd tend to have a high standard deviation. Diamyd itself believes that this is due to the many uncertainties connected with an ever changing company as well as the analyst's expertise and experience that differ from analyst to analyst. This leads them to focus on different aspects when they make their forecasts, which in turn leads to different valuations. Further, both the company and the analysts state that the differing valuations are due largely to the subjective opinions of Diamyd that different analysts have.⁶³ A journalist at Affärsvärlden also mentions that these kinds of companies are notoriously hard to value and further that there are no in between. Either you succeed or you fail badly, and the entire valuation hinges on this. He further says that this, together with the fact that Diamyd is covered by only a few analysts, leads to the large volatility in valuation.⁶⁴

6.2.5 Different opinions on Diamyd's valuation

One analyst with a lot of experience from the biotechnology sector says that the market is generally bad at incorporating the full market potential of companies like Diamyd. Therefore, many of them are in his opinion undervalued. He believes that this might be due to cultural issues, such as the fact that there are few success stories from this industry in Sweden. He further states that the market normally has a relatively short-term view, e.g. some products are given a value of zero on the market, while they could be sold to other companies in the industry for a large amount of money.⁶⁵

⁶² Ibid

⁶³ Interview Analysts and Anonymous source at Diamyd

⁶⁴ Interview Journalist

⁶⁵ Interview Analysts

One journalist we have spoken with has a different view. He believes that R&D intensive companies of Diamyd's kind are usually valued too high when the market is strong and too low when the market is weak. Today, with the strong market that prevails, he believes that Diamyd is valued too high, and that the reasons for its valuation are hard to understand. He believes that Diamyd is the company "in style" at the moment, and that this has attracted small private investors who like these kinds of companies. These kinds of investors usually have a rather short-term focus and if Diamyd's R&D fail, their share price will dive.⁶⁶ One analyst confirms that it is the short-term investors that rule these kinds of companies in the market, but that this does not matter much to the companies, since they often have one or a few large investors that stay with them anyway. These investors are who really matter, since they understand the companies and most importantly they believe in their potential.⁶⁷

⁶⁶ Interview Journalist

⁶⁷ Interview Analysts

7. Discussion

In this section, we will discuss our main findings presented in the section above. We will start by discussing the companies' communication strategies and draw some conclusions regarding the possible implications that these strategies have. Since we have found two opposing communication strategies among our four case companies, we have chosen to present them separately. This is due to the fact that this facilitates comparison and polarisation between the two strategies. We will discuss the possible implications of the strategies from two points of view. First, we will discuss how the companies themselves are affected by the chosen strategy. Then we will consider how the strategies might affect analysts in their valuation process.

We have chosen to label the two communication strategies that we have found. We have decided to call the first one the *restrictive approach*, and the other one the *open approach*. This division of strategies is our own, and does not have any grounds in prior research. Rather, we have created these labels to facilitate for the reader.

7.1 Communication strategies

7.1.1 The restrictive approach

We have found major differences in the communication strategies regarding R&D between our case companies. Elekta and Micronic both have a restrictive strategy regarding the communication of their R&D. They do not inform the public about progress or setbacks of their R&D, and it is not until close to launch that they release information regarding the product in question. These two companies display several similarities; they both have a rather strong cash flow and they earn money on already launched products. Further, their risk composition is similar in that the market risk is relatively larger than the risk involving R&D. Elekta has a couple of strong competitors that they need to keep as much information from as possible regarding their future strategies. Micronic, on the other hand, has a few strong customers that

they cooperate with in the development of their products. These customers compete against each other and therefore they do not want their competitors to know about the progress of the projects they are involved in.

7.1.2 The open approach

On the other end of the communication scale are Diamyd and Biovitrum. They communicate extensively about progress and setbacks in their R&D, and this information seems to be value driving for them, even in the short run. One important difference between these companies is that Diamyd is still in a research phase, while Biovitrum also earns money from current operations. Therefore, Diamyd is more or less completely valued on the potential outcome of their R&D. Since the company is presently in a research phase and not yet in a sales phase, financial information is not relevant when it comes to valuating the company. For this reason, Diamyd needs to communicate the progress of their R&D for the analysts to have something to base their valuations on. Biovitrum also spends a significant amount of money on R&D projects, and therefore this is a significant factor when analysts value the company. Thus, it is important for Biovitrum to inform the market of their R&D, since they could otherwise risk getting a lower valuation due to analysts overlooking part of the value of future products. Both Diamyd and Biovitrum are in an industry where practically all the risk lies in the R&D phase. Once a product is successfully completed and launched, it practically sells itself. Furthermore, the essential parts of the products are protected by patents from an early phase, and the nature of the R&D is such that competitors cannot gain from the knowledge of R&D progress. Therefore, they do not have the same incentives as Elekta and Biovitrum to keep information from the public.

7.2 Implications on behalf of the companies

7.2.1 The restrictive approach – successful

Prior research has found that investors in R&D intensive companies are normally not fully informed about the R&D. This has been shown to lead to an increased uncertainty regarding the companies, which can have a negative impact on their valuation and share price.⁶⁸ However, it seems as if Elekta and Micronic are not negatively affected by their restrictive communication strategy. Analysts have indicated that they do not perceive the lack of information as negative. This is a sign that investors have a large degree of confidence in the companies R&D despite not being fully informed. The analysts of both companies claim that they do not focus much on the companies R&D activities. Further, both companies have worked actively to get the analysts to have confidence in them. When the companies release information on their R&D, this is often done close to launch, which reduces the uncertainty regarding the product. This leads to the analysts having confidence in that the company will deliver what they say they will. An indication of this is that past actions have a high significance when forming future expectations. Since the analysts do not know about the products before they are launched, they rely quite a lot on history repeating itself. They trust that the companies will deliver, simply because they have done so in the past.

Therefore, it seems as if the companies' communication strategy pays off well. They keep vital information from competitors and competitors of their customers and their valuations are not negatively affected, indicating that uncertainty is not perceived as higher due to scarce information.

⁶⁸ Chan et al (2001) p. 2431-2456

7.2.2. The open approach – a necessity

Diamyds and Biovitrum's open communication strategy seems to be of benefit to them. It is clear that positive news regarding the projects in these companies can boost their market values significantly. Further, the risk involving R&D is so high and R&D constitutes such a large portion of their operations that these companies need to communicate the progress of R&D. In order to try to reduce uncertainty, the companies keep the market informed about their R&D, thereby attempting to decrease the information gap that could lead to increased volatility and lower valuation.⁶⁹ Considering the large amounts they spend on R&D, it is reasonable to believe that the market would be much more sceptical if they did not know anything about what they did with that money. This is especially valid for Diamyd, who does not have the same track record as Biovitrum. The analysts do not have the same degree of confidence for these companies compared to Elekta and Micronic. This could partly be a question of seniority and also of the line of business these companies are in. One consequence of an open communication strategy is that setbacks in the companies' projects will reach the market quickly and impact their valuations in a negative way. However, important setbacks are bound to show eventually anyway, so in the long run this does not have a negative effect.

In conclusion, it seems as if an open communication strategy can be beneficial and is a necessity for the two companies. Progress in R&D can boost values and the companies need to inform the analysts of their R&D, since they would otherwise not have any information to base their predictions on.

⁶⁹ Chan et al (2001) p. 2431-2456

7.3 Implications for the valuation process

7.3.1 Relying on historical performance

Even though Elekta and Micronic have a rather good profitability and current sales, we are somewhat surprised to find such an acceptance among analysts regarding the companies' restrictive communication strategies. Further, it seems as if the analysts do not concern themselves with trying to obtain more extensive information regarding R&D. Instead, they focus on more easily measured factors that can be found e.g. in the financial statements. The fact that a lot of the value in R&D is uncertain and sometimes long into the future might be a reason that analysts tend to overlook the real implications of R&D. Still, the analysts do put a large value on expected future performance when valuating the companies, which includes the expected outcome of the R&D. This number is based on how the analysts believe the companies will cope on the market in the future. This is much dependent on how their present R&D turns out.

The analysts state that they mostly rely on historical performance when putting a value on future products, since the companies do not release information on their R&D. By letting historical data influence valuations, the analysts risk that their forecasts become somewhat misleading, since past performance might not always be a good indication of the future. Seeing as the analysts do not search for more information on R&D, they risk missing changes and developments that might have a large impact on the companies' future. A problem with this is that in order to trust the analysts' valuations and forecasts, investors need to believe that the companies will continue much as they have before.

In summary, it seems as if a restrictive communication strategy is accepted by analysts. Further, the valuation process of R&D itself risks becoming rather arbitrary, since it is not based on any solid information but mainly on historical performance.

7.3.2 Uncertainty and volatility

The analysts of Diamyd and Biovitrum have extensive information regarding the progress of the companies R&D. Still, the uncertainty surrounding it is so high, that the analysts' valuations can differ significantly. Due to the high risk related to R&D, analysts cannot rely on historical results as a good indication of future performance, and they have to estimate the future themselves. Especially the valuations of Diamyd have a high volatility, which is in line with prior research regarding R&D-intensive companies.⁷⁰ This is due to the fact that the uncertainty surrounding Diamyd's operations is so high that the opinions regarding the company's value differ. Despite having the same information on R&D from the company, the analysts land at very different values. This difference is largely due to the subjective opinions of the company that different analysts have. Another reason for the high volatility might be that the company is covered by only a few analysts. The problem with this phenomenon is that it is hard to know who to believe in, i.e. investors need to find out what assumptions different forecasts are based on in order to know whether they agree with these or not.

In this matter, it seems as if an open communication strategy cannot eliminate the uncertainty and volatility in valuations surrounding these kinds of companies, although it is reasonable to believe that it can be reduced. However, this is hard for us to evaluate, since we do not know what the effects of a restrictive strategy would be for companies like Diamyd and Biovitrum.

7.4 Connection to theory and prior research

In this section, we will examine some theories and prior research that we believe are relevant and show their relationship to our study. These are areas that are not related to our specific questions in a direct manner. However, we still think that they are relevant in order to look at the communication and valuation process in a broader

⁷⁰ Lev et al. (2005)

perspective. Therefore, we have put this in a section separate from the rest of our discussion.

7.4.1 Agency Theory

The relationship between companies and their shareowners can be seen in the light of the agency theory. One problem that might arise in the relationship between agent and principal is that of information asymmetries. This is especially relevant in R&D intensive companies, since the companies can use their discretion when deciding what information concerning R&D they want to become public. Therefore, the shareowners often do not have all information regarding present and future strategies and developments. Our findings have showed that Elekta and Micronic in particular are restrictive about their communication of R&D. This implies that a potential investor in these companies will not be fully informed about their long-term strategies, which could have consequences for their attitudes towards the companies. The information asymmetries concerning R&D are considerably smaller in Diamyd and Biovitrum, since they have chosen an open communication strategy.

7.4.2 The strategic planning process

There are several similarities between our case companies' communication strategies and the strategic planning strategies in marketing theory. The companies have understood their target audience and seem to well understand how their decision making works. Because of this, they have been able to choose the best positioning for them, and from this point they have developed their communication strategy. However, we do not know if this is a conscious decision, or if the companies simply have adjusted themselves to industry standards. Anyway, it is evident that the IR function is not purely a financial one, but that it also has a marketing element. The communication skills of IR might have more far reaching consequences than traditionally believed on e.g. share price.

7.4.3 Effects of the expensing of R&D

In Sweden, companies expense a large portion of their R&D costs, and little is capitalised due to the current regulations. Research has found that the shares of R&D intensive companies might be mispriced because of this, since capitalisation yields reliable and economically relevant information. However, we have not found any clear indications of mispricing of R&D that is due to expensing in our case companies. Nevertheless, it is possible that an increased capitalization of R&D costs could lead to these companies having a higher valuation, due to the increased value in the discounted cash flow model that this would result in. This is especially valid for Elekta and Micronic, where analysts use this model extensively. Because of this, there could be an impact on the share price, but it would probably be rather small. When it comes to Diamyd on the other hand, expensing of R&D is unlikely to affect their valuation. The valuation of companies like Diamyd is uncertain and complex, and does not hinge on financial information from the financial statements. Thus, it is reasonable to believe that whether R&D is expensed or capitalised does not have much impact on the valuation of the company.

7.4.5 The herding effect

For larger companies covered by more analysts, a herding effect can often be seen. Nobody dares to stand out, since the consequences of being wrong are too severe if you are alone with your opinion. We have not looked closer into this aspect in our research. However, we have found that the volatility in analysts' valuations is the highest for Diamyd. Further, this is the smallest of our four companies, and it is totally dependent on the progress of their R&D. The fact that Diamyd has such a high volatility indicates that no herding effect is present in analysts' valuations, which is probably partly due to the fact that there are only a few analysts covering the company. Our other three larger companies have a lower volatility, which might point towards a herding effect. However, this is not something we have investigated further, and therefore we cannot draw any conclusions concerning this.

7.4.6 Short-termism

Even though short-termism has not been the main focus in this study, we believe that it is something that can impact analysts' valuation of R&D, which makes it interesting to discuss. Prior research has shown that Swedish companies do not let their R&D strategies be affected by the pressure from the capital market. This is in line with our findings in this study where all companies seem to keep their R&D strategy separate from financial equations. Yet, these indications mainly come from the companies themselves, which somewhat reduces the reliability of these statements.

Volatility in share price is believed to attract short-term investors. This has been the case for Diamyd, who has a large amount of small private investors and speculative traders. These actors often have a relatively short-term perspective when investing, which in turn further increases volatility. Having many short-term investors might lead to an increased pressure from the capital market. However, Diamyd does not seem to let this affect them, which could partly be due to the fact that they have one large investor who believes in their activity in the long term.

Regarding short-termisms' negative impact on valuation of R&D, we have found some evidence confirming this. Some R&D projects are not incorporated in the value of the company at all, since their payoffs are perceived to be too far into the future. However, some of these same projects have been sold to other companies for large amounts of money. This is an indication of the discrepancy between the analysts' and the companies' horizons, which affects companies valuation negatively.

8. Conclusions

We have found that our case companies can be divided into two groups based on their communication strategies regarding R&D. These groups are the same ones that we identified in the beginning of our study with regards to relative amount of R&D and line of business. Elekta and Micronic have implemented a restrictive communication strategy where they prefer to keep quiet about the progress of their R&D. Diamyd and Biovitrum, on the other hand, have an open communication strategy where they inform the public of the course of events in their R&D development.

The different communication strategies appear to work rather well for the four companies. Elekta and Micronic, that have a large current cash flow and a smaller amount of R&D relative to their operations, seem to benefit from their communication strategy. They have created an environment where the analysts accept their silence and where they are mostly valued on financial status and historical performance, as long as no new relevant information is released. Further, they keep vital information from competitors and the pressure on their R&D department is kept at a reasonable level. In Diamyd and Biovitrum, R&D constitutes a larger portion of their operations. Therefore, they need to communicate R&D progress in order for the analysts to grasp the full value of the companies. This is also due to the line of business they are in. The biomedical industry cannot rely on historical performance regarding R&D to the same extent, since their product developments contain such a high risk. Analysts know this, and thus they need information about the projects so that they can put a value on them.

We also found that analysts covering Elekta and Micronic did not make any specific efforts to obtain more information regarding R&D, which somewhat surprised us. They did not try to reduce the uncertainty of their forecasts by looking for additional information, but instead used historical performance as a basis. Further, for Diamyd in particular, we found a high volatility in analysts' forecasts, despite the fact that they have the same information. This shows how subjective many analysts' valuations really are when it comes to valuating R&D.

The question of whether companies gain from having transparency regarding their R&D activities is one that we have considered throughout the writing of this essay. The answer we have obtained through the information we have gathered is not a clear one. It seems as if the ultimate degree of transparency depends on specific characteristics of the company in question and its environment. However, it is interesting to see that the four companies in our study all have implemented a communication strategy that appears to be the best choice for them under the circumstances, and that gives them the desired communication effects. This means that they have correctly evaluated their situation and communication objectives and that they understand which kind of information the analysts require for their valuation process.

9. Suggestions for further research

We would like to highlight some areas in which we believe further research would be of interest. These are issues that we have come across in the course of our study, but that have been outside the scope of this thesis.

In this study, we have looked at different communication strategies possible implications on the valuation process. We have focused on implications on behalf of the companies themselves, and on the analysts covering them. We think that an interesting field for further research would be to look at the communication strategies implications on the behaviour of larger investors, both present and potential ones. E.g. it would be interesting to see whether a restrictive communication strategy has a more negative impact on investors, than we have found it to have on analysts. Since investors are the ones that put the actual funding into the companies, they might be more affected by the uncertainty that comes with not being fully informed even when companies have good track records.

Another interesting field for further research is to look at the difference between Swedish and foreign analysts. One analyst told us that he believed that many Swedish analysts are too conservative in their valuations of R&D intensive companies. He further believed that analysts in countries such as USA behave differently, since there have been more R&D intensive companies that have succeeded over there. His hypothesis is that the Swedish conservatism is due to the lack of success stories, and that this affects R&D intensive companies in Sweden negatively. It would therefore be interesting to look closer at differences in the valuation process of R&D between countries and to look at their underlying reasons.

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