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The Meaning of Innovation Capital

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Fem nyckelord: Innovationskapital, intellektuellt kapital, värdeskapande, innebörd, humankapital

Syfte: Syftet med uppsatsen är att undersöka vilken mening forskningsansvariga, ledningen och analytiker ser i den rapporterade informationen kring innovationskapital.

Metod: Kvalitativt angreppssätt med intervjuer, teorigranskning, granskning av externa rapporter

Teoretiska perspektiv: Innovation capital, intellectual capital, knowledge management, measuring and reporting of intellectual capital, the providers' and users' attitude towards intellectual capital

Empiri: Sexton intervjuer har genomförts. Tolv av intervjuerna gjordes med företagsrepresentanter från sex olika företag, medan de resterande fyra intervjuerna gjordes med aktieanalytiker. På varje företag har en person från forskningsavdelningen, samt en från ledningen intervjuats. Intervjuerna resulterade i svar vad gäller vilken innebörd som läggs i den rapporterade informationen om innovationskapital.

Slutsatser: De interna perspektiven skiljer sig åt i kommunikationskedjan mellan forksningsavdelningne och ledningen, företagsrepresentanternas uppfattade generellt sett all information viktigare för värdeskapandet än analytikerna, intern information upplevs viktigare än den externa informationen för värdeskapande.

Title: The Meaning of Innovation Capital

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Course: Master thesis in business administration, 30 University Credit Points (30 ECTS).

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Five key words: innovation capital, intellectual capital, meaning, value creation, human capital

Purpose: The purpose of this paper is to examine what meaning the management, research department and the financial analysts perceive in the reported information about innovation capital.

Methodology: Qualitative approach, interviews, theory review, review of external reports

Theoretical perspectives: Innovation capital, intellectual capital, knowledge management, measuring and reporting of intellectual capital, the providers' and users' attitude towards Intellectual capital disclosure

Empirical foundation: Sixteen interviews have been performed. Twelve of the interviews were conducted with company representatives from six different companies, while four were with financial analysts. At each company one person from the research department and one from the management have been selected. The interviews resulted in answers regarding the meaning of innovation capital information reported internally and externally.

Conclusions: Internal perspectives differ among management and research department, the company representatives perceived the information higher than the analysts, internal information are perceived more important for value creation both internal and external.

Contents

1. Introduction

1.1 Background

A constant evolvement of accounting is necessary in order to increase the use and effectiveness for internal and external reporting. Some components of the reporting are more easily developed while others are more complex. The study of intellectual capital is, in relation to financial accounting, in its youth and the term can be seen as a tool to describe an organizations non-financial value-creation process (Bukh, 2002). Some researchers have therefore concluded that an increase of information concerning intellectual capital results in lower risk premium and as a consequence, a more accurate valuation of the company (Botosan, 1997). Innovation capital is considered a part of the intellectual capital and can be described as the capital associated with renewability. Schumpeter (1964) stated that innovation is a key factor for wealth, therefore it should be considered an important part of the external information.

It seems meaningful to invest in intellectual capital and some might suggest that as a result it is meaningful to report intellectual capital, both externally and internally (Marr *et al*. 2003).Reports provided by the European commission addresses the issue of improved identification, measuring and reporting in order to evolve the present lack of reliable information in organizations. These reports emphasizes on R&D intensive SMEs that have difficulties in communicating the value of its intellectual capital to investors (European Commission, 2006).

Information that is reported both internally and externally needs to be interlaced in the firm's value creation process. The information reported internally should be considered valuable since the company perceives a specific meaning in it. Pieces of this information are presented in the external report that is available for financial analysts. Therefore the information should represent key factors that drive value in the company. However, several factors have shown that financial analysts do not trust the information presented in the external information. Johanson (2003) states four reasons behind investors' ambivalence of human capital disclosures. First, they may feel insecure, since they do not understand in what way the human capital investments contribute to the value creation in the company. Second, they might be ambivalent, because they are questioning the reliance of the human capital information. Third, they are questioning the degree of ownership in the intellectual capital which is referred to people. Fourth, their hesitance and indecisiveness is a result of that they do not know if the information have an impact in the company's management control process. Since human capital is a part of the intellectual capital, these theories are applicable and relevant in this study.

Despite the presented reasons, could it also be that financial analysts and the companies perceive different meanings in the information? Could the different perceived meanings of the information explain why financial analysts have difficulties in using information surrounding innovation capital?

Value creation is assumed to be driven by innovation and some might even suggest that it is completely necessary for a company's future long-term profitability (Schumpeter, 1964). Therefore, the innovation capital should be considered as one of the most important components in the reported information. In order to attract capital, one key element is to communicate the value of the company. As mentioned before, it is of especially great importance for R&D-intensive industries to communicate their information. In these companies the innovation ability should be reported clearly and through analyzing this capital one should be able to include this in the total valuation of the company.

There are, however, rules and risks with reporting innovations both internally but foremost externally, since it can include future patents or other corporate secrets that are critical for the future long-term profitability of the company. Complete transparency of enterprise information towards financial analysts and other stakeholders is hard to achieve since some information needs to be kept hidden in the organization. However, it is still important to examine which meaning companies and financial analysts perceive in different types of information in order to decrease the information asymmetry.

1.2 Problem discussion

The idea is to get businesses to improve their ability of communicating and controlling their innovation capital in order to attract capital and to develop. Today, innovation capital is a small part of the discussion on what creates value in businesses. Since there is a lack of innovation capital information in the external reports, financial analysts does not use it as a basis for investment decisions. One can see how other types of information have increased the value of the companies in which the meaning is equal regardless of role or position within or outside the company. The problem arises if the perceived meaning differ both in companies and with the financial analysts. Different perceived meanings of innovation capital can lead to separate opinions on how important the information is for value creation. In order to provide information to improve the value creation, an understanding of the meaning is required. Otherwise, it will be impossible and unnecessary to measure and report innovation capital both internally and externally. Understanding each other's interpretations of the meaning should make it possible to change and improve the reported information. Getting closer to a similar perceived meaning of the information is a necessity for development around the measurement and reporting of innovation capital. Therefore a study of the perceived meaning of innovation capital is needed.

1.3 Purpose

The purpose of this paper is to examine what meaning the management, research department and the financial analysts perceive in the reported information about innovation capital.

1.4 Disposition

This section explains the content of future chapters. Chapter two will explain the method used during this study. Chapter three presents the frame of references which consists of the most influential earlier research that is important for this study. Chapter four consists of our empirical results combined with the authors' interpretations of the answers. It is divided into six parts for all the companies interviewed with an ending overall patterns found in the

material. Chapter five presents the most evident and interesting results found in the study and chapter six presents conclusions and recommendations for further studies.

2. Method

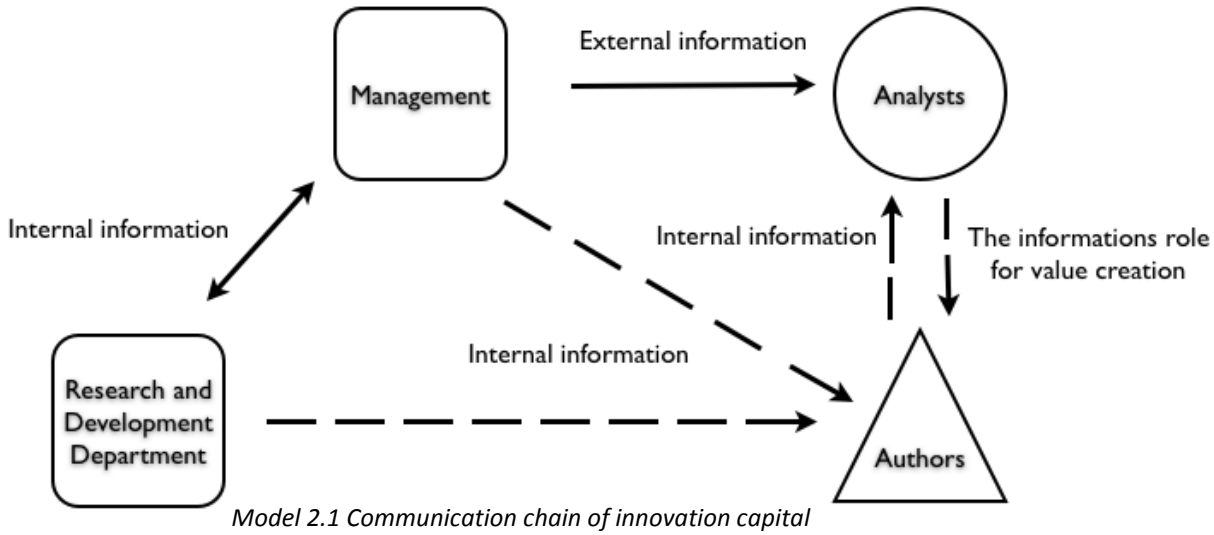
The following section will explain which methods were used in order to best correspond with the purpose of the study. It also describes the research design and how data were collected. Further it presents how the data have been analyzed and interpreted into the final discussion and conclusion.

2.1 Study approach

Since the purpose of this study is to understand the meaning of innovation capital from different angles, a qualitative study seems most relevant. Interviews are flexible and should therefore provide a deeper understanding of the perceived meaning of innovation capital. In order to achieve as high reliability of the results as possible six companies and four financial analysts are chosen (Bryman and Bell, 2003).

2.2 Overall study design

One can imagine how the innovation capital is communicated in a chain from its origins to a valuation of the information. It is in this chain, the study will find out what meaning ascribed to different people. Emergences of innovations are expected to arise in the research department where research managers compile information about it. It is expected that this information is shared with the management who subsequently selects what information to be presented externally to fairly present the company's entire value, both financial and intellectual value. Model 2.1 explains how the authors capture information in the communication chain described. The internal information is assumed to include innovation capital and report further in the external information. The information is shared with analysts.



Model 2.1 Communication chain of innovation capital

2.3 Selection of interviewees

The interviewees involved have been research director, financial manager / CEO and financial analysts with experience in corporate valuation. The key was to have a responsible representative from the research and development department and a member of management who received the information from this department, see model 1.1. This is the only place one can see how the internal information travels from the time of innovation through to

management and finally into the external report. One might think of it as a chain in which information flows and how meaning is made up or altered. Table 1.1 visualizes what positions the interviewees have in their respective company.

Table 2.1 – Company representatives

Company	Management	R&D department
Pharmaceutical	CFO	Project leader
Telecom	Vice president	Project manager
High-tech	Investor relations responsible	Patent manager
Engineering	Business unit director	Research director
Food	Innovation director	Product development manager
Biotechnology	Vice president	Product developers

2.4 Selection of companies

Six companies were selected to represent different industries with an important component that they were public. This was important in order to make a reasonable assessment of their innovation capital disclosed in the external report. We also hoped that public companies might have a more standardized way to report internally which would make the interviews more interesting. Moreover, it was a requirement that the company would have a research and development department where innovation originates. Swedish companies have a lead over many other countries regarding knowledge and interest in intellectual capital. Therefore, we focused on Swedish companies to maximize the value of the interviews. In order to protect companies' confidential information their names are encoded as are the respondents' names. This is to ensure that all internal information that the authors got access to is kept confidential and no business secrets are presented. Some companies have declined to participate in the study due to time constraints.

2.5 Selection of financial analysts

In order to get the external perspective four analysts were selected. Two of them were concentrated on research and pharmaceutical companies, whilst the other two had a more general focus. All of them were working as advisors to private persons or companies. Two of the analysts were employed at smaller investment banks, one at an internet bank and the last one were working for one of the major Swedish banks.

2.6 Interview design

The interviews always opened with the question whether it was possible to review internal reports as this made it easier to obtain good quality of the answers and also a better basis for discussion. When the reports were missing or the respondent refused to show the report, there were detailed questions asked about the reported information types. Before the interviews, a thorough review of the company's latest annual report was made. The information types, which according to our definition associated with innovation capital were highlighted and then discussed at the interview. The questions were divided into four groups: receiving report, further reporting, external reporting and self-view (see appendix). As mentioned earlier, first

we asked for any internal reports and if they were missing or confidential, questions were asked which type of information reported. This first step surrounded the question: What information is used to control the business? To understand what meaning the interviewees perceived in the information, the question was stated very simple: What meaning do you perceive in this information? Furthermore, questions were asked how important they perceived the specific information for the company's value creation, with an interval 1-7, where 1 is not at all important and 7 is very important. Furthermore, analysts were interviewed from two different issues. What meaning do you perceive in the information reported externally? These questions are similar to the interviews with the companies. Finally he got to evaluate the information that was reported internally. The confidentiality affected the analysts who participated in the study. This means that analysts have been questioned the meaning of information and how important they believe it is for the value creation only on information types that are presented internally. From a study perspective the authors would have preferably revealed the companies that are discussed as well as more detailed information on the basis of the report, but due to confidentiality, this was not possible.

2.7 Collection of data

In this section it will be explained how the data were collected and analyzed. The interviews were recorded in order to be transcribed. The authors went through the material of transcribed interviews, searching for perceived meanings. It occurred that many of the interviewees had trouble differentiate meaning from definition. Therefore some of the answers have not been used in this study in order to remain the validity of the information. A definition is simply what the information is; a meaning is what the information actually means. For instance, research costs' meaning could be that the company invests a lot of money in research while a definition is the cost of research. This affected the collection of data since some of it could not be used. The data that was relevant for the study was later compared and analyzed to the other answers.

2.8 Learning points

Since this subject is fairly new and very little information on what answers to expect from the interviewees or how they would interpret the questions made the first interview very interesting. One discovered early the essence of explaining the subject very thoroughly in order to get the responses connected to the subject. Otherwise the answers contained facts about the company that were unnecessary for the study. Therefore, a proper introduction of the study was the first learning point. Several of the interviewees noted that the questions were difficult to understand although almost the same question was repeated. A definition of the meaning was necessary to present in order to avoid confusion. These learning points could successfully be used during the interviews with the analysts where similar problems arose.

3. Frame of reference

The frame of reference will initially introduce the concept of intellectual capital. Then former research, definitions and a variety of classifications will be presented. After these explanations, the focus will be pointed towards innovation capital. Thereafter, a knowledge management approach will be taken in order to declare the connections between the human, structural and innovation capital. The frame of reference will at last treat measurement, reporting and disclosure of intellectual capital.

3.1 Intellectual capital

3.1.1 Historical development of intellectual capital

The research of intellectual capital can be divided into two stages. During the first stage, in the early 1990s, the research was focused on creating an understanding and to define intellectual capital. The second stage of the research development concerned how specific intellectual capital dimensions influence the labor and capital markets (Guthrie & Petty, 2000).

The reason for the arising interest in this area may be explained by the paradigm shift, where the former industrial society has developed into a society based on knowledge (Sveiby, 1997). Edvinsson and Malone, points out Stewart's article: Intellectual capital - The new wealth of organizations (1994), as being the eye-opener for many companies that the era of intellectual capital had begun. Furthermore, they claim that the real breakthrough of intellectual capital came in May 1995 when the Swedish company, Skandia, released the first intellectual capital report as a complement to their financial report.

A summary of former research define intellectual capital as some form of knowledge, which is connected to value creation through an intangible asset (Kaufman & Schneider, 2004). Differences in classifications into subgroups can also be found, although, there seems to be a large consensus to divide intellectual capital in three main subgroups namely, human capital, organizational or structural capital, and relational or social capital (Kaufman & Schneider, 2004). Some authors have gone even further and divide intellectual capital into four subgroups, separating innovation capital and process capital from the structural capital (Van Buren, 1999).

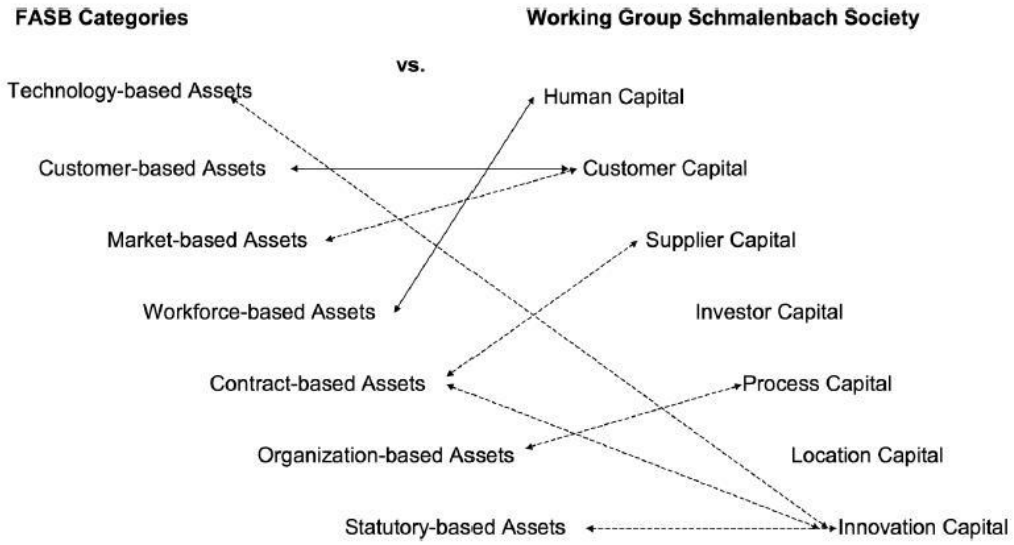
3.1.2 Different approaches to intellectual capital

It can be concluded that the former research of describing intellectual capital have resulted in various definitions and different names. The difference in definition can be explained by the abstract nature of the concept, which leads to a lot of room for subjective judgement. Despite the spread of definitions, some authors claim that no unique definition can be found (Bukh *et al.* 2001). There is also an inconsistency among researchers what to call the phenomenon and in the literature it appears under different names as, intangibles, intangible capital, intangible resources, intellectual property, etc. (Kaufman & Schneider, 2004).

The way of classify the intellectual capital also differs among the authors, although the classification into three subgroups can be assumed to be a general approach. Furthermore Bukh *et al*. (2001) point out, after an examination of various classifications from different

authors, that three commonalities between the classifications can be found, namely they all have a connection to (1) employees, (2) to processes and structures, and (3) to customers. On the other hand, some authors argue that a classification of Intellectual capital is almost impossible to make and instead describe it as an interaction between the knowledge management, social capital and human capital (Rastogi, 2003).

A majority of the approaches regarding the classifications of intellectual capital were developed between 1997 and 2002. These approaches are quite similar and consist of two to four subgroups (Kaufman & Schneider, 2004). Two newer approaches, one created by FASB (Financial Accounting Standards Board) and another one that has a German origin, created by the work group ‘’Intangible Assets in Accounting’’ belonging to the Schmalenbach Society for Business, offers a more comprehensive classification of the intellectual capital (Kaufman & Schneider, 2004). Both of them specify detailed instructions, in order to classify items under the different subgroups. Their categorization is illustrated below.



Model 3.1: FASB vs. Schmalenbach Society (Kaufman & Schneider, 2004)

3.1.3 Definition of intellectual capital

Numerous authors have written about intellectual capital, however, this report will mostly use the framework from *The Intellectual Capital* written by Edvinsson and Malone (1997). The main reason for this is that Edvinsson and Malone’s framework has had a big influence on the contingent development and research in the area.

Edvinsson and Malone describe intellectual capital metaphorically by picturing a company as a living organism in the shape of a tree. Everything that is visible of the tree, its trunk, branches, leaves and fruits represent the external information of the company. In contrast, everything which is below the surface, namely its roots, is invisible for the investor. The roots of the tree represent the intellectual capital in organizations.

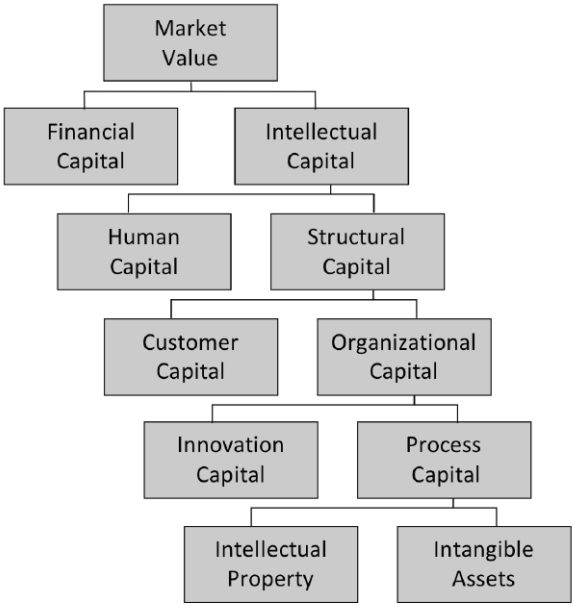
The paradox in this metaphor is that even if the tree’s fruits taste good and the leaves have a green color. This is just a reflection of the past, because the circle of life starts in the roots and

it is the condition below the surface, which decides the future. Thus, to only consider the visual parts and not regard the roots is a fundamental mistake, because today's fruits will fall down and the green leaves can be withered tomorrow (Edvinsson & Malone, 1997).

Intellectual capital is a quite broad term in a sense, containing a lot of different factors which creates value in organizations. Edvinsson's (1997) definition of intellectual capital has been developed during his time as director of intellectual capital at the Swedish insurance company, Skandia. He concludes that the value of intellectual capital is created by the interaction between human and structural capital. So, according to his point of view, it is the relationship between the different dimensions of intellectual capital that is valuable for the firm not the dimensions itself (Edvinsson, 1997).

3.1.4 Classification of intellectual capital

The role of intellectual capital is illustrated well in Skandia's intellectual capital value scheme (Edvinsson & Malone, 1997). It starts out from the market value and presents both financial and intellectual capital as determinants of the valuation. Consequently, the intellectual capital is divided into two subgroups, namely, structural capital and human capital.



Model 3.2: The Skandia Intellectual Capital scheme (Edvinsson & Malone, 1997)

The human capital refers to the individual ability among the employees, their knowledge, their skill and their experience. The human capital also refers to the creativity of the employees and thereby it plays a major part in the innovativeness in the organization. (Edvinsson & Malone, 1997)

The other main subgroup is the structural capital, which is the infrastructure in the organization or simply put, "the existing part of the intellectual capital, which is left in the company when the employees have gone home" (Ax, Johansson & Kullvén, 2009). The structural capital transforms know-how into the organization through databases, patents, manuals, structures, systems and processes (Subramaniam & Youndt, 2005).

There is interplay between the structural and the human capital. The structural capital is developed by the human capital, consequently, an organization with well-developed structural capital is more likely to have a rich human capital (Edvinsson & Malone, 1997).

The structural capital can further be divided into customer capital and organizational capital, where the customer capital refers to relationships with customers and the organizational capital is the ability for an organization to communicate and storage knowledge and information. The organizational capital consists of partly, process capital, which refers to working procedures, techniques and employee programs. The second part of the organizational capital is the innovation capital which will be further clarified in the next part (Edvinsson & Malone, 1997).

3.2 Innovation capital

3.2.1 Innovation

The term innovation comes from the Latin expression innovare, which means renewal. Already 1942 Schumpeter stated that innovation was a key factor for wealth. He presented his well-known trilogy, consisting of invention (research resulting in idea generation), innovation (the process of converting the ideas into sellable products), and diffusion (introducing products on the market) (Schumpeter, 1964).

Innovations can be of different nature and in the theory four types of innovations can be found, namely, process innovations, product innovations, organizational innovations and marketing innovations. Process innovations leads to a cheaper production of a service or a product. Product innovations are an improvement of an existing product or an invention of a new product. Organization innovations refer to new organization structures. Marketing innovations are the development of new marketing methods, which involves shifts in product design or packaging, product placement, product promotion or pricing. (OECD, 2008).

An innovation can affect the organization's strategy in different ways. For instance, there is a separation between radical and incremental innovations, where the radical innovations tend to create a fundamental change in activities and behavior and thereby affecting the overall strategy (Meyer, Brooks & Goes, 1990). The incremental innovation, on the other hand, refers to minor refinements of existing products or to new knowledge that enhance the existent strategy (Henderson & Clark, 1990).

3.2.2 Definition of innovation capital

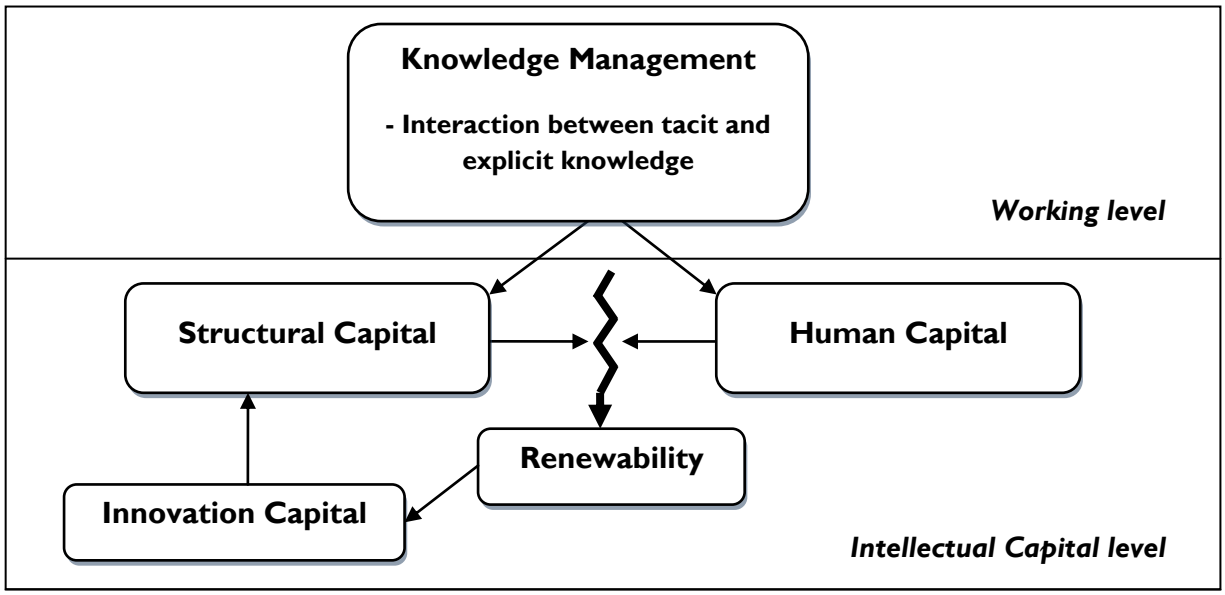
Edvinsson and Malone conclude that two types of traditional non-physical assets, namely intellectual property and intangibles, can be classified under innovation capital. Furthermore they define innovation capital as the renewability, which results in protected business rights (e.g. patents and brands) and in other intangible assets. They also reckon the ability that is used to create and quickly market new products and services (Edvinsson & Malone, 1997). The following text about knowledge management illustrates how the term renewability is related to the interplay between structural and human capital. This part aims to increase the insight of the definition of innovation capital used in this study.

3.2.3 Knowledge management

Edvinsson and Malone classify renewability within the dimension of innovation capital. However, renewability is a result of the interplay between human and structural capital. In order to explain this interplay in more detail the theory of knowledge management will be used.

The endless process of innovation is connected to a recreation of the world in a certain way that fulfills our visions and predetermined ideals. Renewability in companies requires creation of new knowledge, which is a process of personal and organizational self renewal (Nonaka, 1991).

The theory of knowledge management explains knowledge creation as an interaction between two different types of knowledge namely, tacit and explicit. The tacit knowledge refers to personal skills, which are rooted in the action of the personnel, and which many times are hard to formalize. The explicit knowledge, on the other hand, is formalized and systemized into the organizations processes (Nonaka, 1991). This interaction between tacit and explicit knowledge is the same thing as the above mentioned interplay between human and structural capital, solely the terms differ.



Model 3.3: *The relation between knowledge management and intellectual capital*

Model 3.3 illustrates how the main parameters within the innovation process are connected to each other. The loop starts at the working level, where the interaction between the personal skills (tacit) is combined with the organization's formalized knowledge (explicit). This interaction is referred to as the interplay between human and structural capital on the intellectual capital level, which leads to renewability, and consequently, renewability creates innovation capital that constitutes one of the dimensions in the structural capital.

3.3 Measuring and reporting of intellectual capital

In this part, concerning measurement and reporting, the focus will be broaden to comprise the entire concept of intellectual capital, since the interplay of the dimensions obstruct a focus solely on innovation capital.

The intellectual capital constitutes one of the main aspects for creating a competitive advantage. Consequently, there is willingness among companies to communicate these values to the external environment (Andriessen & Stam, 2004). The process of communicating the intellectual capital consists of two main processes. First, the abstract nature of the intellectual capital many times implies advanced measurement systems in order to collect these soft parameters. Second, when the measuring have been performed it is essential to report the information through the organization and then further to the external stakeholders.

3.3.1 Measuring intellectual capital

Marr *et al*. (2003) presents five reasons why intellectual capital should be measured. (1) To help organizations formulate their strategy, (2) to assess strategy execution, (3) to assist in diversification and expansion decisions, (4) to use these as a basis for compensation, and (5) to communicate measures to external shareholders. The majority of them are of internal value for the organization, however the last point declares that the measurement system also has a purpose for the external environment.

Due to the development of new management control systems during the first half of the 1990s, the possibilities for companies to measure intellectual capital increased. At first the balanced scorecard was developed by Kaplan and Norton (1992). This system was followed by the Skandia navigator, developed by Leif Edvinsson during his time as director of intellectual capital at Skandia. A fundamental difference between the two of them is that the Skandia navigator was developed to measure intellectual capital (Edvinsson & Malone, 1997), while the balanced scorecard never had those intentions (Chen, Zhu & Xie, 2004). Instead, the balanced scorecard aimed to give the management a comprehensive picture of the company performance. None of the systems were developed with the purpose for external use, rather they were meant to be useful internally as tools helping the executives managing the organization (Edvinsson & Malone, 1997; Kaplan & Norton, 1992). However, the increased demand for internal information among external stakeholders has broadened the purpose with the measurement system and now includes an external reason as well.

3.3.1.1 Internal reporting of intellectual capital

The two first reasons for measuring intellectual capital presented by Marr *et al.* (2003) was strategy formulation and strategy assessment. Naturally it is fundamental to know what competences and resources a specific strategy requires in order to fulfill it (Andrews, 1971). A well functioning measurement system can detect the necessary information, however, in order for an organization to actually adapt to the measured information a successful internal reporting system is required.

Further on, the fourth point in the list, regarding intellectual capital as basis for compensation requires that the employees continuously get information about the intellectual capital,

therefore a measurement system cannot operate alone it must be complemented by a well-functioning reporting system in order for an organization to work in an efficient way. Thereby, the aim of an internal reporting system is to spread the data measured so it can be used as decision basis in the organization.

Other authors have the same reasoning, stating that intellectual capital have a greater internal importance than external (Bukh *et al.*, 2001). In order to create an understanding for the value of intellectual capital through the organization, a supportive internal reporting system is required. Furthermore, Edvinsson writes in the Skandia Navigator model that it is important that the data received from the measures are processed, so analysis and conclusions can be made (Edvinsson & Malone, 1997). Moreover the reporting of intellectual capital is likely to improve the employee morale, staff turnover, it can result in higher intellectual capital investments. It can also lead to an increased understanding of what aspects that is essential for a continued growth and development (Guthrie, 2001).

3.3.1.2 External reporting of intellectual capital

The external reason is that the intellectual capital information will complement the financial information and thereby present a fairer picture of the firm. In contrast to the ideas that reporting of intellectual capital has larger internal benefits than external (Bukh *et al.*, 2001), some authors rather focus on the communication of intellectual capital to the external environment (Gu & Lev, 2001). They point out that empirical studies reveal that the information regarding intellectual capital is more important for stock market actors than cash flows and reported earnings (Gu & Lev, 2001). This evidence constitutes a major purpose for disclosure of intellectual capital information.

Further on, it can be concluded that the raised interest in intellectual capital externally, have lead to that companies are concerned to disclose more information in their annual reports. However, the existing reporting system was created for an economy, dominated by real assets so called tangibles, and does not respond to the current demand of communicating intangibles, i.e. intellectual capital (Andriesson & Tissen, 2000). At the moment only the traditional intangible assets, as brands, patents and goodwill, that fulfill certain criteria, are allowed to be included in the financial reports. Modern intangibles like, staff competencies, customer relationships, and computer and administrative systems, does not acquire any acknowledgement in these reports (Guthrie & Petty, 2000).

The current EU regulation does not require any disclosures of intellectual capital, however, there is a mandatory requirement to disclose non-financial information, if it is considered to have a great influence on the firm and affecting the overall performance (European Union, 2003). Specific intellectual capital reporting however is only of voluntary nature (Meritum Project, 2002).

There are some disagreements of how the voluntary reporting of intellectual capital should be performed. Some claim that this information should be disclosed in a separate report, which implies less complexity, since the disclosed information does not need to be certified, but critically reviewed by an auditor. The main idea with the other point of view, to bring the

intellectual capital in the external report, is to increase the credibility of the disclosed information. This requires an audit of the intellectual capital, which is a complicated and debatable issue (Alwert, Bornemann & Will, 2009).

3.3.3 Problems with current intellectual capital reporting

The current reporting rules of the annual report is based upon the principles of comparison, therefore companies are required to standardize their information to the external environment, (Meer-Koistra & Zijlstra, 2001). However, Bukh (2002) argue that intellectual capital must be communicated in an individual way, since the organizations' intellectual capital contributes to the value creation in different ways. He further concludes that the intellectual capital data should be complemented with the top-managements' interpretation of the value creation and the strategy. Other authors also conclude that the interrelations in intellectual capital are important for value creation. They further claim that these interrelations hardly can be well communicated by the general reporting models, which exists (Johanson *et al.* 2000). However, the problem is not only explained by the limitations in the reporting standards. The remaining complexities in the area can be referred to the lack of effort by the companies and the stock market actors (Meer-Koistra & Zijlstra, 2001).

3.3.4 The providers' and users' attitude towards intellectual capital disclosure

Companies' ambivalence to intellectual capital disclosure is often connected to the fear of losing competitive advantages or that the information might lead to high expectations (Meer-Koistra & Zijlstra, 2001). Some studies done in the area of human capital also confirms that the information disclosed in the annual report to a very small extent could be connected to the internal human management practices, even though some evidence were found that companies perceived this information as important to disclose (Ax & Marton, 2008). Other reasons for the avoidance of intellectual capital disclosure among companies could be related to reliability issues, low awareness of their value drivers or that the information is hard to understand (Ittner & Larcker, 2008).

Also the financial analysts are insecure about the value of intellectual capital, which research by Johanson within human capital indicates. Their external perspective and their focus on numbers might result in difficulties to gain insight to the situation on the company (Johanson, 1992). Some newer research done in the area reveals that financial analysts are interested in information regarding intellectual capital, however, this information were hard to acquire. The results point out that financial analysts on a general level perceive most of the intellectual capital information treated in the study to have a strong connection to the company performance, this connection was particularly evident in small firms. Interestingly this research found that financial analysts, unlike some researchers mentioned above, would like to have standardized information concerning intellectual capital information (Sakakibara *et al*. 2010).

4. Interviews

The following section includes the empirical results from the interviews interpreted by the authors.

4.1 The pharmaceutical research company

The pharmaceutical and research industry is a major component of advanced science that requires much knowledge to fully understand. After a patent is filed, the company has 20 years in which to develop the drug and sell it before the market is filled with generic drugs. The research process usually takes around thirteen years and is very capital intensive. Without large investments there will be no research and ultimately no drugs on the market. The company's need to convince the market that the research it conducts are both necessary and will generate a product but also be profitable requires an understanding of these indicators. Because of the long lead times, it may take many years before any profit is visible in the company, which is the basis for valuing a company. The company has a market value that is ten times larger than the reported value. One can therefore assume that there are great expectations or a belief that the research will generate profitability in the future.

4.1.1 Internal reporting

The interviewees from the pharmaceutical research company were the CFO and the project manager whom had continuous internal communication. The first interview was with the CFO who presented a classified internal report. These information types were discussed with the CFO, the project manager and health analyst one and health analyst two. The information types found in the classified internal report are presented in the table.

Table 4.1.1 – Perceived importance for value creation (1-7)

Internal reporting	Project manager	CFO	Analyst one	Analyst two
Major events & projects issues	5	5	5	7
Target Product Profile	4	6	7	4
Business intelligence and competition situation	6	6	6	7
Market scenario	6	6	4	2
External patents	7	4	4	5
Scentific rationale	4	5	5	4
Objectives and timeplan	5	7	5	3
R&D activities	6	7	1	3
Non-clinical pharmacy	4	4	3	-
Safety pharmacology	6	5	1	2
Ongoing studies	-	-	3	-
Regulatory	6	6	5	5
Manpower	-	-	2	1
Patent	-	5	5	7
External costs	5	6	4	3
Contingency plans	6	5	6	-
Gantt-chart	4	5	4	-

Major events and project issues

Major events and project issues meanings are described similar between the CFO and project manager even if they have quite different starting points. CFO points out in his definition that these are priority and funding of the project. The project manager does not describe his meaning the same way, but he describes it briefly only to major events and leave out why it is done. Analysts' meanings were more similar to the project managers. However, this resulted in no difference in how important they felt the information was for the value creation, however, it shows that the CFO was the only one with a clear objective of reporting the information.

Target Product Profile

Target Product Profile showed significant differences in meaning. The project managers stated that it would be like the packing slip you receive when you purchase a drug in Sweden is not consistent with the issues that the CFO believes the information to answer. Their meanings are met, however, when the project manager says that the information answers what makes the product economically successful which is similar to some of the issues that the CFO describes. Analyst one gave a short answer which was similar to the CFO's description while the analyst two aligns well with the project managers. This was also perceived with some importance of the information for the value creation. Analyst one and CFO felt that the information was very important while the other two only thought it was important.

Business intelligence and competitive situation

Business intelligence and competitive situation showed a strong similarity between the interviewees' meanings. Both the analysts added, however, a factor that no one else did. Analyst one pointed out that this could be done from different perspectives and analyst two highlighted when it was important to do the analysis. All interviewees agreed that this was very important information for the value creation in the company.

Market scenario

Market scenario showed a strong similarity between the interviewees' meanings, however, analyst two was slightly different in his description. The others were very careful that it concerns the market and how the drug fits and how it positions itself. Analyst two was very specific in his description and believed that it is the market share that is the meaning. This somewhat narrow meaning is reflected in this analyst's perceived importance and perceives this information as not important for the value creation, which differed much from the company's representatives.

External patents

External patents had separated meanings between companies and analysts. However, there was no correlation between the meaning and how important they felt the information was. One can assume that information about the company's patent should have been regarded as more important than external patents.

Scientific rationale

There was consistency in the meaning of scientific rationale between both company representatives and analysts. All agreed on both the meaning and its importance for the creation of value.

Objectives and time plan

Objectives and time plan was assumed by the authors to generate more similar answers but there were clear differences in meanings particular surrounding time plan. They have a specific idea behind their statements when they explain their meanings in the information, a specific product or event they describe information from. This applies particularly to the CFO since he insists that management constantly challenges the meaning of this information. This may explain the large difference in how important this information was considered for the value creation, especially between CFO and analyst two. Objectives and time schedules may be a management tool that is far more important for this type of activity, than what one analyst normally consider.

Research and development activities

Opinions on research and development activities are similar to objectives and time plan. In this case, company representatives agreed to the same meaning and that this information is very important for value creation. None of the analysts agreed with them and rated the information a mean value. Similar to objectives and time plan, there might be knowledge around the activities and a different experience that makes the company representatives believe that this has significant impact on the future profitability.

Non-clinical pharmacy

The meaning of non-clinical pharmacy was consistent among the three which was also showed in the ratings of importance. In this case, there seems to be no doubt, despite that the respondents from the company has more knowledge.

Safety pharmacology

Safety pharmacology's meaning was shared between the CFO and the project manager. None of those interviewed perceived the meaning the same but one can clearly see that the people interviewed representing the firm, view this information as important. Perhaps this information is something that analysts take for granted but which the company puts more emphasis on and knows the consequences of a poorly executed safety pharmacology.

Regulatory

All interviewees perceived the same effect on regulatory, even if they expressed it slightly differently. It should be noted that the information was considered important from both an internal and external perspective of creating value.

Manpower

The twelfth type of information presented is manpower, which means according to the CFO what will judge how much manpower they need. The project manager said that this is the number of employees, type of staff and that everyone is doing the right thing at the right time. Analyst one described manpower as staff, and explained that this information can be useful if for example the company hires too much consultants. Consultants have an incentive to prolong and make the project more costly. Analyst two replied that it means the number of employees.

Patents

Patents are an important part of creating value in accordance with all the interviewees and their meanings were no different.

External costs

External costs meaning was thoroughly explained by the CFO but the other interviewees gave short answers and the content seemed to differ slightly. This can be assumed that he knows very well the importance of value creation. Analyst two proved to be critical of how important this information really is and his answer about the meaning is very open and can be interpreted in several ways. You can almost read it as he did not really know what external costs refer to and therefore he generalizes about any issue concerning the industry.

Contingency plan

Contingency Plan gave a rather interesting difference in meaning between the project manager and analyst one. Analyst two was very careful to emphasize that it was not a plan b but a continuation of plan a while project manager said that it was similar to a plan b. This rather large difference in interpretation did not change how important they considered the information.

Gantt chart

Gantt chart was found to have an almost identical meaning of the interviewees who knew about it, which is also visible in how important it was rated for the value creation.

4.1.2 External reporting

The following information was found in the external report and was discussed with the same interviewees. The CFO pointed out that within this industry, the external report quickly became outdated and therefore not relevant for analysts. Instead presentations are much more accurate for valuation.

Table 4.1.2 – Perceived importance for value creation (1-7)

External reporting	Project Manager	CFO	Analyst one	Analyst two
Ongoing projects	-	4	3	7
Employee competence	6	5	5	6
Patents	6	5	5	7

Current projects

Current projects did not appear from the company to play a particularly strong role which was also expected given that the CFO clearly pointed out that the external report quickly became out of date for external stakeholders as the projects continues in a high tempo. Analysts' responses differed which may have to do with analyst two is using more of the external report on the measurement than the analyst one does. Maybe analyst two is not informed, as described by the CFO, that the external report is too outdated to use as a basis for valuation.

Employee competence

The meaning of employee competence was fairly consistent between the interviewees. Company representatives were keen to express some kind of pride in the meaning of the information.

Patents

Patents were the only point which was examined both internally and externally and its meaning did not change course when reported externally.

4.1.3 Overall patterns from the pharmaceutical research company

Looking back over the various types of information reveals some interesting results. There is no obvious picture of how the interviewees have responded, but some surprising answers have emerged. One realizes that throughout to the questions the CFO and the project manager looks at information from different perspectives. The CFO has a clear agenda with the financial information reported, while the project manager's response is guided by a scientist's passion for research. This is found mainly in their descriptions of the meaning in which they differ in wording and emphasis. One can also see that despite the various meanings of the information they considered it equally important for value creation. Equal meanings gave different outcomes of how important they felt it was. One can clearly see that the information from the company were often similar in their assessments as well as analysts. One can thus see that there is a difference in how analysts and company representatives evaluate the information. One cannot conclude that this has to do with the different perceived meanings of the information but not exclude it. It may be that the company has a greater insight into what this information means specific to that company. The company has a clear tendency to overestimate different factors importance for value creation, while analysts are more conservative in their grading.

4.2 The telecom company

This company is listed on the Stockholm stock exchange and its products can be found in 30 countries worldwide.

4.2.1 Internal reporting

The information types presented in the table were acquired during the initial interview with the project manager. Thereafter, an interview with the vice president was performed, who received the reports. Finally, financial analysts were asked to interpret the information types found internally.

Table 4.2.1 – Perceived importance for value creation (1-7)

Internal reporting	Project manager	Vice president	Analyst three	Analyst four
Release note	5	7	5	3
PDA	7	7	-	-
PDS (time plan)	6	6	5	4
Feature list	7	6,5	4	4
Quality tests	6	7	5	4
Issue list	6	6	6	4

Release note

The release note communicates the product updates in software and hardware to the involved personnel within the organization. This information type resulted in quite different meanings and perceived importance for value creation. Three of the respondents, namely the vice president, the project manager and analyst three expressed a similar meaning with this information. All of them mentioned updates and changes since last time. Further on, the vice president was more thorough in his reasoning and also included the product definition as a part of the meaning. On the other hand, the fourth interviewee, analyst four had problems to interpret what the internally communicated release note really meant and instead he concluded it to be a new product release. In this matter the individual meaning reflects the respondents' perceived importance for value creation quite well. The vice president and analyst four gave the highest respectively the lowest assessment and the similarities in meaning between the project manager and analyst three resulted in a common view of the value creation aspect.

Product Development Agreement

This document is the contract between the telecom company and its Chinese partner concerning development of a new product. The information type turned out to be too hard for the financial analysts to interpret and thereby, they were not able to express neither the meaning of it nor their perceived importance. Thus, only the company representatives were able to comment in this matter. It turned out that the vice president and the project manager had different perceived meanings of this document. The vice president referred to it as a base definition of the product, where all the former knowledge from customers and studies was used to define the product features and the form factor. The project manager instead described

it as an agreement which included parameters as quality, price, time and quantity. The difference in meaning, however, resulted in a common rating for value creation.

Product Development Schedule

The product development schedule is referred to as the time plan and is one of the parameters found in the product development agreement. This information type had a shared perceived meaning. The respondents all reasoned it to be time to product launch, although the company representatives were more detailed in their description of the meaning. For instance, the project manager mentioned the cooperation between different parties, whilst the vice president talked about the verifications, tests and follow-ups. Even though, the interviewees expressed a similar meaning the company representatives rated the time plan to be slightly more important for the value creation in the firm. As a suggestion, this difference can be explained by that the company representatives have more detailed knowledge, while the financial analysts' ratings are referred to the general idea of the time plan.

Feature list

The feature list communicates the selected product features during the development process. This matter resulted in a similar meaning by all of the respondents. They all said it referred to the attributes of the product. However, the reasoning from the company representatives was more elaborate and the vice president talked about the importance of the features in order for the product to sell well, while the project manager mentioned the substitution of features during the product development process. Further on, the company representatives both stated that the feature list was very important and the vice president expressed that they could not afford to fail with a product. The financial analysts were more careful in their rating and perceived the feature list to be moderate for the value creation.

Quality tests

The perceived meaning with the quality tests was quite similar to both the product manager and to the vice president. Both answered with the similar reasoning, to ensure the quality, which hopefully will lead to low returns and customer satisfaction. Moreover the vice president pointed out that the lack of knowledge among their customers obstructs the company to update bugs after the product has hit the market. The answers from the financial analysts were briefer and analyst three did not seem to perceive any specific meaning in this, more than a test before launch. Analyst four's interpreted meaning was more in line with the company representatives and he described it as test up against the predetermined specifications. Although analyst four described a more detailed meaning in this matter, analyst three rated the importance of the quality tests slightly higher. Finally, one can conclude that the company representatives perceived the quality tests to be most important for value creation.

Issue list

The issue list is a document communicated between the telecom company and its partner in order to solve problems during the product development process. The issue list was given a

similar meaning by the project manager and the vice president. For the project manager it meant a clear communication to the partner of what issues to be solved. The vice president, similarly, referred it as a communication tool and perceived it as one part in the overall quality work. The financial analysts tried to interpret this internal information type, however, their interpretations differed both from each other's and from the company representatives' meaning. Analyst three stated it to be problems with the existing products, while analyst four more insecurely wondered if it were problems. Despite the difference in the perceived meaning between the financial analysts and the company, analyst three rated this information equal as the company representatives, whilst analyst four's response negatively deviated. A comparison of these results would be irrelevant, since the meaning is deviates rather much.

4.2.2 External reporting

The following information types from the annual report were treated in the interviews.

Table 4.2.2 – Perceived importance for value creation (1-7)

External reporting	Project manager	Vice president	Analyst three	Analyst four
Development of software	7	6,5	5	5
New launches	6	7	6	5
Relations with universities	4	6	3	4
Rights to use patents	4	6	2	4
Development costs	6	5	6	4

Development of software

The meaning of the development of software was subject to a distinction between the company representatives and the financial analysts. The company representatives declared that this was an action, which demonstrated their flexibility and, which have enabled their sales growth. The financial analysts interpreted the meaning differently and analyst three perceived software to be a natural part in the offer, while analyst four concluded the development of software as a central factor in order for companies to niche themselves on the market. Both of the company representatives rated this information as very important while the financial analysts perceived this information as fairly important.

New launches

The phrased answers about new launches resulted in quite different meanings. The vice president talked about new products and emphasized that is was beneficial for the company's sales, while the project manager's meaning was focused around development. Further on, their perceived importance of this information also differed, however only marginally. The vice president said it to be very important, while the project manager rated it to be important for value creation. Both of the financial analysts shortly expressed the meaning in this information to be new products and analyst three rated it, as the project manager, to be important, while analyst four rated it to be fairly important for value creation.

Relationships with universities

In the information regarding relationships with universities the company representatives and analyst four perceived the similar meaning of learning through specific competences, while analyst three interpreted the information types as the telecom company probably originated from a university project. The vice president rated it to be important, while both the product manager and analyst four perceived it as moderate for value creation. Analyst three perceived a quite different meaning in this matter and also rated it to be quite unimportant for value creation.

External patents

External patents are owned by other companies, but through payment the telecom company is entitled to use them. Both the product manager and the vice president perceived a similar meaning in this information. They respect the rules and they are prepared to pay to use techniques of others. The financial analysts' interpretations of the meaning were quite similar, although analyst three was more specific and concluded that this information meant cooperation with other companies in order to be more cost efficient. Further on, analyst four mentioned this information in a more general sense, stating that this was a common proceeding in the telecom industry. It can be concluded, that external patents resulted in the largest diffusion of the external information types in the perceived importance for value creation, where the vice president said important and analyst three thought it was unimportant.

Development costs

Even though development costs definition is quite easy to understand, the company representatives and the financial analysts mentioned quite different meanings. While the vice president and the project manager related the meaning with new products and development, the financial analysts simply focused on the money spent and its relation to other costs. It is probably the difference in the external/internal perspective that is the reason for this deviation in meaning between the company representatives and the financial analysts. Despite the difference in meaning, the vice president, the project manager and analyst three agreed on that this information was important to fairly important, while analyst four stated that this information was moderate for value creation.

4.2.3 Overall patterns from the telecom company

The general conclusions that can be drawn from the material in the telecom company are that the company representatives in most cases, either perceive a quite different meaning or that they are able to describe a more detailed and specific meaning than the financial analysts. Additionally to this, the company representatives on the general level also perceive the treated information types more important for value creation than the financial analysts. However, cases of difference in meaning, which results in equal assessment for value creation, also exists. The material also reveals that the company representatives have a common view of the information types they work with and in most cases their meaning resembled. The differences often lie in their description, where the vice president more often connect the information

types impact for the end customer, whilst the project manager focus more on the impact for product development. One can hereby discover different perspectives in the information.

An interesting fact is that the external information types more often resulted in a clear distinction between the company representatives and the financial analysts, while the internal information more frequently resulted in a common meaning.

4.3 The high-tech company

The high-tech company is the world leader within its specific industry and can be found on the Stockholm stock exchange.

4.3.1 Internal reporting

The first interview with the patent manager resulted in the information types presented in the table. This data was gathered through questions, since no internal report was shown to the authors. Subsequently, these information types were presented for the investor relations responsible, analyst three and analyst four.

Table 4.3.1 – Perceived importance for value creation (1-7)

Internal reporting	Patent manager	IR responsible	Analyst three	Analyst four
Submitted patents	3	-	4	4
Infrigement matters	7	-	4	4
Freedom to operate	4	-	-	-
Landscaping	4	6	5	4
Budget	6-7	-	5	4

Submitted patents

This document refers to an early stage in the patent process, whether a technology should be patented or not. The patent manager perceived the meaning to be whether the expected advantage of the patent protection is weighing up the costs for the process, therefore it is a question of protection as well as budget. This reasoning was to some extent followed by the financial analysts, who both interpreted that the information concerns an early stage before a patent has been issued. The investor relations responsible had a hard time to interpret this specific concept of submitted patents, despite this she thought it had an important meaning for the company. Some compliance in the value creation aspect could be detected between the patent manager and the financial analysts.

Infringement matters

Infringement matters refer to illegal usage of an already patented technology and this is reported internally by the patent manager. The infringement matters resulted in different meanings among the respondents. First, the patent manager described it as very sensitive and further declared the large costs that can be incurred. The investor relations responsible talked more about the time consuming juridical process, while the financial analysts interpreted it as infringement on the company's patents. This matter resulted in a gap in the value creation aspect between the patent manager and the financial analysts, where the patent manager concluded it to be very important.

Landscaping

Landscaping means monitor the patent landscape within the industry. The information about landscaping received a similar meaning by the Patent manager and the financial analysts. The patent manager described this information as business intelligence and concluded it as a pre-phase before entering new business areas. Then, both of the financial analysts referred landscaping as creating an impression of what patent areas that is available in the industry. The three of them also concluded it to be moderate to fairly important for value creation.

Freedom to operate

Freedom to operate is an evaluation where the result from the landscaping process is presented. The patent manager observed this document as a decision basis, whether a product could be released or not. The investor relations responsible tried to interpret this concept and she concluded it to be a data that determines if the daily work could continue as usual. Unfortunately, solely the internal perspective was caught in this matter, since the financial analysts had a hard time to interpret what this concept was all about.

Budget

The last information type reported internally by the patent manager was budget. All of the respondents pretty much perceived the same meaning in it and referred it as a management control tool or economic frames. Despite the commonalities in meaning, the patent Manger perceived it to be slightly more important for the value creation in the company than the financial analysts.

4.3.2 External reporting

The following information types connected to innovation capital were detected in the annual report and questioned during the interviews.

Table 4.3.2 – Perceived importance for value creation (1-7)

External reporting	Patent manager	IR responsible	Analyst three	Analyst four
New launches	-	6	6	5
Product strategy	-	6	6	4
Recruitment within R&D	-	6	5	4
Number of engineers	-	6	3	4
Patent applications	-	6	4	4
Patent portfolio	-	6	5	4
Relations with universities	6	-	3	4

New launches

The first information type covered in the interview regarding the external reporting was new launches. Despite the simplicity of this measure some differences in perceived meaning could be detected. Whilst the financial analysts phrased it to be new products, the investor relations responsible connected new launches to the company's innovativeness. The patent manger said

it signaled that the company is investing. Despite these differences in meaning, new launches' importance for value creation were rated similarly by all of the respondents. The interviewees' high rating reveals that this information type is one of the most important measures treated in the external information.

Product strategy

According to the patent manager it was a plan for product development. The investor relations responsible expressed a more specific meaning in the product strategy and connected it to certain product attributes, which are the future focus. The financial analysts interpreted the meaning of the product strategy from a market perspective, which resulted in some difference in meaning. Analyst three referred it as their way of using trends on the market and concluded the product strategy to be connected to the company's preferred market position. Analyst four had the similar reasoning as analyst three and described the product strategy as crucial for the niche or segment the company want to reach. However, this difference did not lead to any large distinction for the perceived value creation between the company and the financial analysts.

Recruitment within R&D

The perceived meaning with the information about recruitment within R&D resulted in some difference between the company representatives and the financial analysts. The patent manager and the investor relations responsible related this recruitment to investments in research and development, while the financial analysts explained it as to attract competent personnel. The slightly difference in the perceived meanings did not result in any major deviations in the perceived importance for value creation. The investor relations responsible said this to be important, while analyst three and analyst four perceived it as fairly important respectively moderate for value creation.

Number of engineers

The number of engineers meaning differed a lot between the respondents. No compliance was found, neither the financial analysts nor the company representatives perceived a common meaning in this information. First, according to the patent manager this information was required by the stock market rules, while the investor relations responsible mentioned the engineers as a large share of the total number of employees. Analyst three were rather pessimistic and meant that the company just wanted to emphasize their well-educated staff, while analyst four optimistically expressed it as an important parameter for product development. Further on, this information was subject to rather different judgement for value creation, where the investor relations responsible rated it as important and analyst four thought it were quite unimportant for value creation.

Patent applications

The patent application refers to the next step in the patent process after submitted patents. The meaning of patent applications was perceived quite similar by the patent manager and the investor relations responsible, they talked about new ideas and the innovative force. The

financial analysts talked more about that the company wanted to protect some of their ideas. Moreover, analyst four declared that he separated patents and essential patents. Patent applications were rated as moderate for value creation by the financial analysts. The investor relations responsible, liable to the more enthusiastic description of the meaning also had a more positive attitude and rated patents applications as important for value creation.

Patent portfolio

The definition of patent portfolio is the collection of patents owned by the company. The information regarding the patent portfolio resulted in different perceived meanings between the respondents. The patent manager concluded the fact that the number of patents were increasing. The investor relations responsible, once again, referred to it as the innovative force of the company. Neither the financial analysts interpreted the meaning to be the same. Analyst three perceived it as a description of the company's patent, whilst Analyst four reasoned that different patents can be used for different applications. The interviewees did not perceive any particular difference between this information and the patent application for value creation.

Relationships with universities

Relationships with universities were something that the high-tech company reported in their annual report and it resulted in some resemblance in the perceived meaning between the patent manager and analyst four. The patent manager connected this with the company's interest in the latest technique as well as a recruitment process. Similarly, analyst four concluded the meaning to be access to valuable competences and cheap labor. Analyst three interpreted the information differently and drew conclusions as the company might have been started from a university project. The patent manager perceived this information as important, while the financial analysts had a more indifferent approach to this information.

4.3.3 Overall patterns from the high-tech company

From the material in the high-tech company one can conclude that in a majority of the information types the financial analysts perceive a different meaning than the company representatives. Moreover, it should be added that there were a larger compliance regarding the meaning and the information's importance for value creation between the company and the financial analysts in the information reported internally than in the external information.

Among the internal information types the opinions about infringement matters deviated distinctly between the financial analysts and the patent manager. This deviation might be caused by the differences in perspective, while this represents the most important work task for the patent manger, the financial analysts assume that these matters always will be handled and therefore they may not pay so much attention to it.

Externally, new launches distinguish itself as the information type that was perceived most important for value creation, even though some discrepancies regarding the meaning were apparent.

Besides this, one can conclude that the opinions regarding the perceived meaning of the external information types are separated between the company representatives and the

financial analysts. In a majority of the cases, the company representatives and the financial analysts perceive different meanings, which in some of the cases lead to a difference in the value creating aspect. Also the perceived meanings of the company representatives differ in many cases. This difference may be a combination of the interviewees specialized working tasks and that the communication between them is limited to a couple times each year.

4.4 The engineering company

The following company is a listed relatively large engineering company based in southern Sweden but with customers worldwide.

The interviewees are a business unit director which is part of the management, research director, who reports indirectly to the business unit director with an intermediary and the analysts are from a smaller investment bank analyst three and the other from a well known bank analyst four.

4.4.1 Internal reporting

No formal report exists in the company between the company representatives, but the business unit manager points out that if he wants a report, he asks for it. Research manager also argues that no formal report exists but the flow of information takes place during the coffee breaks. The following information presented, states the two representatives, are reported within the organization. Despite the business unit director and the research manager two analysts were interviewed.

Table 4.4.1 – Perceived importance for value creation (1-7)

Internal reporting	Business unit director	Research manager	Analyst three	Analyst four
Timeplan	5	-	4	5
Business intelligence (omvärldsanalys)	-	5	4	5

Time plan

Time plan contains strong views from business unit manager and one finds clear that he perceives it as an important instrument to control the employees at the research department. He refers to the research employees as "that type of people" and similar which indicates that he feels strongly dependent on his control tools such as time plan. A specific perspective is noticed during the business unit director interview. For analysts there is no different meaning from the pharmaceutical company. One can see that it is possible to view the time plan in different ways. However, there was no major impact on how important it was for the value creation.

Business intelligence

Business intelligence does not distinguish between those interviewed surrounding the meaning. It was described very similar and considered it about as important for the value creation in the company.

4.4.2 External reporting

The following information types were found in the company's annual report from 2009.

Table 4.4.2 – Perceived importance for value creation (1-7)

External reporting	Business unit director	Research manager	Analyst three	Analyst four
New launches	-	7	5	6
Relations with universities	-	5	4	3
Research costs	4	7	4	6

New launches

New launches were perceived very differently by the interviewees but it did not affect the results significantly. Maybe it meant something completely different to the research manager since he started talking about the people behind the project. The information seems to be explained from different perspectives. There may be a depth in this information not apparent in the external report or which cannot be understood without taking part in the launch.

Relationships with universities

Relationships with universities divided the views and once again it seemed like there was more behind the information that was not apparent from the external report. Research manager stresses that this benefits the entire industry which is based on an analyst's perspective. This did not appeal to the same extent for the analysts. However, it was believed that progress for the entire industry is critical for value creation as research manager was well aware of but not understood by analysts. This may explain the differences in how the research manager felt that information was important for profitability which was not the same for the analysts.

Research costs

Research costs appeared to be a sensitive point for the research manager. One can assume that the research department must appeal to the management to get the resources they require to conduct the research. Research costs can be linked to the business unit director who commented on earlier about the new releases in which he pointed out that it was important to stop the development when the product is commercially ready. One sees a clear difference in particular between the research manager and the business unit director of how important it was rated for the value creation. There is, of course, a chance that the research manager overestimates these costs as the business unit manager has a more holistic perspective. Analysts' had a scattered response which can be from how they look at innovation. During the interview, there have been disagreements on if high research costs means that the company is innovative. The majority took the view that one cannot assume that from this context.

4.4.3 Overall patterns from the engineering company

The company gave some answers that were difficult to interpret, however, one realized that the project manager and the business unit manager had different perspectives on several

matters. This was especially visible when discussing research costs where the opinions were splintered in two. One can assume that this is a result from the lack of a working internal reporting system. This affects their standing point on what drives value in the company. The contempt of the research department from the business unit manager is probably also a product of the internal reporting system. Innovation capital is not rewarded in this company, focus is on sales and business development. This company has a lot of financial capital and is relatively easy to value for an analytic compared to the pharmaceutical research company. Although there is a lack of many opinions on how important different factors are for the value creation, one can conclude that the company has a tendency to rate the information higher than the analysts. The financial analysts are more careful on their valuation and does not consider everything very important, which is almost the case with the company representatives.

4.5 The food company

This company is a large Swedish food company with famous brands. The company is owned by a larger group which is listed on a major Nordic Exchange. This factor distinguishes the food company from the other companies examined, where all are listed with their own name.

4.5.1 Internal reporting

The interviewees are Innovation director whom are also a part of the management team and has major responsibility for the innovation. The second is the Product development manager and reports to the Innovation director. During the interviews, the authors did not get to see any internal reports, but instead raised questions about what was reported.

Table 4.5.1 – Perceived importance for value creation (1-7)

Internal reporting	Innovation director	Product developer
Contribution margin	7	7
New categories	5	4
Percentage of listings	7	6

Contribution margin

Contribution margin had a consistent meaning between the interviewees, probably because it is an accepted management tool with an easy to understand view. This was reflected in how important they rated the information.

New categories

New categories were attributed to very similar meaning from both interviewees, which also was in line with how important they considered it for the profitability.

Percentage of listings

Percentage of listings was described very differently by the interviewees but one can clearly sense an undertone of the two have the same meaning. They have both very clearly described the meaning and both emphasized how important this was.

4.5.2 External reporting

The following information connected to innovation was found in the 2009 annual report.

Table 4.5.2 – Perceived importance for value creation (1-7)

External reporting	Innovation diretor	Product development
New products	4	6
Sustainability – Packaging	4	3

New products

New products are no different in meaning and both company representatives are very clear that this is very important for the long term profitability.

Sustainability - Packaging

Sustainability - Packaging separated them in what was their own opinion and the company's. You can imagine the skepticism of the information provided by product development manager, while innovation director is more loyal to the company. Even if you perceive different meanings in information they agreed that this is not one of the key factors for value creation.

4.5.3 Overall patterns from the food company

Characteristic for this company was the few but clear measures that were reported internally. Even though they had high ambitions on develop an atmosphere of innovation, there were a great lack of routines to report information containing innovations. However the measures cover a large scope of information where conclusions can be drawn from. One can assume that if analysts would have been asked on how important these measures are for the future profitability, they would have given them a high rating. The measures are easy to understand and give a clear indication on how the company is doing and what needs to be improved.

4.6 The biotechnology company

The biotechnology company is a Swedish company, with headquarter placed in Stockholm and with departments in Sweden, USA and Japan. They are listed on the Stockholm stock exchange and their products are world leading within its industry.

4.6.1 Internal reporting

During the first interview with the product developers different information types were detected. The product developers never showed any internal report so the information was found through frequently asked questions. The second interview was performed with the receiving party of the report namely the vice president. Finally, analyst three and analyst four were interviewed and the results are presented in the table.

Table 4.6.1 – Perceived importance for value creation (1-7)

Internal reporting	Vice president	Product developers	Analyst three	Analyst four
Time plan	4	3	5	4
Quality tests	5	7	5	4

Time plan

According to the product developers the importance of the time plan differed depending on the projects. A knowledge based project was often less time specific, whilst a product based project had a determined time line which got more specific the closer it got to the product launch. The vice president said that the time plan obviously was important, nevertheless it was not of highest priority. The financial analysts concluded that this was the time up to product launch. The time plan's importance for value creation was perceived as moderate by the company representatives, while the financial analysts thought it were slightly more significant.

Quality tests

The perceived meaning of the quality tests among the interviewees was also quite alike, although the company representatives were more specific in their description. Both of them stated it was about following product specifications and assure the customer security and the health quality. Analyst three said it to be a test before product release, while analyst four perceived a meaning of testing if the specifications are fulfilled. The quality tests was graded relatively equivalent for value creation by the vice president and the financial analysts, while the product developers deviated and stated that it was a very important parameter.

4.6.2 External reporting

These are the information types selected from the external report.

Table 4.6.2 – Perceived importance for value creation (1-7)

External reporting	Vice president	Product developers	Analyst three	Analyst four
New launches	5	7	6	5
Staff competences	5	4	3	4
Relations with universities	5	4	3	4
Development costs	5	4	6	4

New launches

The information regarding new launches was given quite similar meaning by all of respondents, however the product developers perceived the most important meaning in this parameter and associated it with the company's innovativeness. This parameter's importance for value creation was rated within range from very important to quite important by the interviewees.

Staff competences

The information regarding staff competences resulted in some mixed opinions about the meaning between analyst three and the vice president. Analyst three were unable to perceive any particular meaning with this parameter and concluded that as a way of stating the competences in the company, while the vice president talked about it as the company's foundation. Their perceived meaning also resulted in a difference in perceived importance for value creation, where the vice president perceived this parameter to be more important than analyst three. Analyst four and the product developers both said that well-educated personnel are an important factor for product development. Their commonalities in meaning also resulted in the same rating regarding value creation.

Relationships with universities

In relationships with universities the perceived meanings differed most between the company representatives and analyst three. The vice president was talking about the building of an innovation network and the product developers said that this information signaled flexibility and that they were able to work over the entire world. Analyst three drew some conclusions that the company was originated from a university project. Finally, analyst four perceived the meaning as cheap and beneficial competences. This also led to the result that they perceived this parameter to be of varied importance for value creation.

Development costs

There was also some resemblance in the perceived meaning of development costs between the respondents. All of the respondents concluded it to be money spent on R&D, however, the company representatives pointed out that this was a large amount. The rating for value creation was subject to some difference between the product developers and analyst three.

4.6.3 Overall patterns from the biotechnology company

The result from the biotechnology company reveals a resemblance in assessment between the company representatives and the financial analysts in both the meaning and the perceived importance for value creation. Solely small deviations could be detected in the perceived importance for value creation. The most notable deviation was the internal difference concerning quality tests between the product developers and the vice president. Although both parties expressed a similar meaning, the product developers perceived the quality tests to be more important for value creation. Among the external information types, staff competences and relationships with universities lead to the largest diffusion both in meaning and perceived importance for value creation, while new launches and staff competences were more equivalently judged by all of the respondents.

5. Discussion

The purpose of this paper was to examine the meaning of innovation capital. Information on not only innovation were found within the internal reports, also opinions on other parts of the intellectual capital have contributed to these final chapters. The authors have found some prominent patterns that arose during the interviews. These are: the different perspectives between the research department and management affecting the meaning of the reported information, company representatives value information higher for value creation than analysts and also the internal information is more important for the value creation than the external information.

The different perspectives

In three companies it was clear that the person who represented the research department and the person who represented the management had different perspectives when they answered the questions. The researchers often tied their meaning to an ongoing project or another part of the research. The person from the management explained from an investor or end-user perspective. This perspective arises most likely from the profession, that one gets used to tie information to its own reference point. This means that experience and work tasks might affect the way one perceives the meaning of information. The different contexts are assumed to contribute to these perspectives. The study did not discover a certain perspective from the analysts.

Company representatives rate information higher for value creation than financial analysts

Another pattern found in the study was that the company representatives generally gave a significantly higher valuation of the information for its role as a creator of value in relation to the analysts. This applied to both internal and external information. As the thesis has been through the work that with various reference and knowledge of the information reported, one therefore values these factors differently for the value creation. One can assume that what the company reported externally but also internally should be consistent with what one considers to be value creation in the company. One explanation to this difference in value creation could be that the company representatives perceive the information in an organizational context. This can be connected to Marr *et al.* (2003) reasoning, where the company representatives experience how the reported information affect the organization and thereby better understand the future value creation in the company. Another explanation to the visible pattern can be related to Johanson's (2003) findings, where the lack of understanding of how the information types contribute to value creation results in a hesitance among the analysts. Also the external view of analysts and the lack of contact with the company might lead to that analysts estimate the indicators as less reliable. In order for the companies to achieve greater reliability they need to give up more information than what is required. One of the analysts requested information on the problems the company encounter that interferes with value creation. Perhaps such a section in the external data might give the impression that it improved the transparency and thus absorb more credibility from analysts.

Internal information is more important for value creation than external

Another interesting pattern that was visible in the interview section was the better match between the internally reported information in terms of meaning and its importance for value creation than the external information. The internal information was also generally considered more important for the value creation than the external information. This result does not necessarily mean that companies are reporting the wrong information but that if the companies would make their internal reporting external, then an improved transparency of the value of the company would be made available. Companies have of course many reasons to protect internal information. The intellectual capital might exist simply because it is confidential and reported externally would lower its value. These empirical findings indicate like the prior studies made by Sakakibara *et al.* (2010) that analysts have an interest in the internal information. However, the lack of disclosure obstructs them to include this information in the company estimation. This can also be seen as the external information are subject to deviating opinions, both from the company representatives and the financial analysts, which points out insecurities whether some of the information types disclosed really are connected to value creation. According Meer-Koistra and Zijlstra (2001) this choice of information disclosure is a result of the existing reporting standards. Based upon the results on the meaning and value creation one may assume that Bukh *et al.* (2001) approach that intellectual capital reporting generate more internal value than external might be correct. However, the external value would be higher if the companies decided to increase their disclosure of innovation capital information.

Meer-Koistra and Zijlstra (2001) argues that companies' ambivalence to intellectual capital disclosure is often connected to the fear of losing competitive advantages. Further on, Ittner and Larcker (2008) claim other reasons to be, low awareness of company value drivers or that the information is hard to understand for analysts. The results in this study reveal that the internal information often is perceived similarly for value creation by the company representatives, simultaneously, the authors noticed during the interviews that analysts were proficient regarding some of the information types, which might indicate that they actually would be able to understand the information if it were reported externally. Based upon that, one could speculate if the limited disclosures are connected to the fear of losing competitive advantages.

In the study one can also find so called non-patterns, i.e. patterns that are difficult to explain and that sometimes feels absurd. For example, when different meanings gave the same estimate as to how important it was for value creation, while equal meanings yielded different values. This contradicts much of the knowledge and the assumptions that the same meaning should give a similar score. This can be explained in the little information that analysts were assigned. Because of the privacy issue, analysts could not take part of what one may regard as sufficient information to give complete answers.

6. Conclusions

Based upon the results, one can conclude that differences in perspective may affect the content of the information when measured and reported. Companies must be aware of these differences in order to achieve as precise measuring and reporting of its innovation capital as possible. Further on, company representatives generally rate the information higher for value creation which can be explained by contextual factors. Therefore, it might be beneficial for companies to describe the internal context of the organization more elaborately, in order to increase the understanding of the reported information's internal importance. The third finding in the study reveals that financial analysts perceive internal information interesting and relevant. This implies reasons for an increased external disclosure concerning not only innovation capital, but intellectual capital in general.

The study has deliberately had a very open attitude to what it expected from the interviews. Few similar studies have been done, so one should therefore learn from the method of this paper and examine what can improve to gain more interesting facts on the meaning of innovation capital and its consequences. Further learning points for future studies one should study the discoveries of information types that were used in the various companies and how they differed between industries. For instance, it can be very interesting to focus on a specific industry for future research in innovation capital and how the meanings varies within and outside companies. One area that could have many interesting answers are the pharmaceutical and research industry. This industry is characterized by that the innovation capital plays an important role, and also seems to have a solid internal reporting. The information types found in this study can be used to design a checklist for future studies or use in a summary of the type of information reported by each industry. One can conclude after this study that clear procedures for reporting intellectual capital are rare. Since it seems meaningful to invest in intellectual capital one should be able to assume that it is important to report it both internally and externally. (Marr *et al.* 2003) In order to develop these reporting standards, these type of studies are required since it identifies and disseminates the type of information companies consider important for its value creation. Only by surveying opinions and content of reports, analysts and companies can move closer to each other in terms of analysts' understanding of what type of information considered important internally as well as for companies to understand what information may not be understood and ignored from analysts.

Although the starting point for this study was innovation capital, it is not, nor is it wise to only try to isolate questions and discussions to it. Innovation capital and value creation is complex and even if they are dependent on each other, you need to disassemble them and study them individually. The essential is not to which definitions of capital specific information types belongs to, but rather what one believes creates value and how to learn to communicate it effectively to external parties. As a result, the authors have not overlooked the information types that emerged from questions about the internally reported information even if they did not belonged to the definition of innovation capital. However, the external information selected by the authors was linked to innovation.

As stated earlier, analysts have an interest for intellectual and innovation capital to be visible in the external information. One should assume that the information reported externally are important for the value creation, this also applies to the internal information and the internal reporting. Therefore the innovation capital should be measured and reported so this information becomes formalized through the internal reporting. This study shows the general lack of measuring and reporting intellectual and innovation capital. In order to externally report innovation capital an organization need ways to formalize this capital and encourage capturing and communicating it.

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Appendix

Vilken information behöver du för att kunna styra verksamheten?

Hur samlar du in informationen?

Namn

Befattning

Datum

Tema A – Mottagande rapport

Vad står i den mottagande rapporten? Dela upp informationen.

Mått/information:

1. Vad är det för innebörd i denna information? (Mening, tolkning, vad säger det?)

_____

_____

_____

_____

2. Vad gör du när du får denna information, (användningsområde för informationen?

_____

_____

_____

_____

3. Hur viktigt är det här specifika måttet/information för framtida långsiktig lönsamhet? (1-7)

(1=inte alls viktigt, 7=Mycket viktigt)

1	2	3	4	5	6	7

Tema B – Vidarerapportering

1. Vilken information rapporterar du som du inte får in i underrapporter?

2. Vad är det för innebörd i denna information? (Mening, tolkning, vad säger det?)

Mått/Information

Hur viktigt är det här specifika måttet/information för framtida långsiktig lönsamhet? (1-7)

(1=inte alls viktigt, 7=Mycket viktigt)

1	2	3	4	5	6	7

3. Vilken information/mått rapporteras vidare till ledning, ekonomichef, områdeschef etc.?

4. Varför rapporteras denna information vidare?

_____

_____

_____

_____

Tema C – Extern rapportering

Mått/Information:

1. Vad ser du för innebörd i den info som rapporteras? (Mening, tolkning, vad säger det?)

_____

_____

_____

_____

2. Hur viktigt är det här specifika måttet/information för framtida långsiktig lönsamhet? (1-7)

(1=inte alls viktigt, 7=Mycket viktigt)

1	2	3	4	5	6	7

Tema D – Självbeskådning

1. Vilken roll har forsknings- och utvecklingsavdelningen i företagets framtida långsiktiga lönsamhet?

_____

_____

_____

_____

2. Vilka mått/vilken information från forskningsavdelningen tror du VD anser vara viktigast att kommunicera till företagets intressenter, såsom analytiker och investerare?

_____

_____

_____

_____

3. Om du var VD, vilka mått/vilken information från forskningsavdelningen skulle du ha ansett vara viktigast att kommunicera till företagets intressenter, såsom analytiker och investerare?

_____

_____

_____

_____

Article

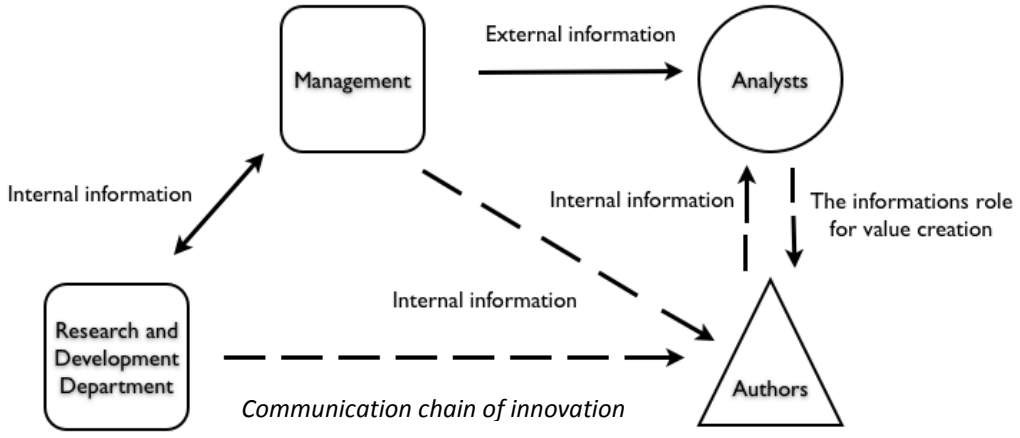
Different perceived meaning on innovation capital between companies and financial analysts

By Johan Andersson & Rickard Åstrand

A larger study surrounding innovation capital has taken place at Lund University in Sweden. The purpose of the study was to examine what meaning the management, research department and the financial analysts perceive in the reported information about innovation capital. The authors have found some prominent patterns that arose during the interviews. The different perspectives between the research department and management affect the meaning of the reported information. The company representatives value information higher for value creation than financial analysts, and also, the internal information is more important for the value creation than the external information.

Today, innovation capital is a small part of the discussion on what creates value in businesses. Since there is a lack of innovation capital information in the external reports, financial analysts does not use it as a basis for investment decisions. One can see how other types of information have increased the value of the companies in which the meaning is equal regardless of role or position within or outside the company. The problem arises if the perceived meaning differ both in companies and with the financial analysts. Different perceived meanings of innovation capital can lead to separate opinions on how important the information is for value creation. In order to provide information to improve the value creation, an understanding of the meaning is required. Otherwise, it will be impossible and unnecessary to measure and report innovation capital both internally and externally. Understanding each other's interpretations of the meaning should make it possible to change and improve the reported information. Getting closer to a similar perceived meaning of the information is a necessity for development around the measurement and reporting of innovation capital. Therefore a study of the perceived meaning of innovation capital is needed.

One can imagine how the innovation capital is communicated in a chain from its origins to a valuation of the information. It is in this chain, the study discovered what meaning



ascribed to different people. Emergences of innovations were expected to arise in the research department where research managers compile information about it. It was expected that this information would be shared with the management who subsequently

selects what information to be presented externally to fairly present the company's entire value, both financial and intellectual value. The model explains how the authors captured information in the communication chain described. The internal information was assumed to include innovation capital and report further in the external information. This study comprised six companies with representatives from the research department and the management. Also, four financial analysts have been interviewed. The following three sections explain the findings of the study.

In three companies it was clear that the person who represented the research department and the person who represented the management had different perspectives when they answered the questions. The researchers often tied their meaning to an ongoing project or another part of the research. The person from the management explained from an investor or end-user perspective. This perspective arises most likely from the profession, that one gets used to tie information to its own reference point. This means that experience and work tasks might affect the way one perceives meaning of information. The different contexts are assumed to contribute to these perspectives. The study did not discover a certain perspective from the analysts.

Another pattern found in the study was that the company representatives generally gave a significantly higher valuation of the information for its role as a creator of value in relation to the analysts. This applied to both internal and external information. One can assume that what the company reported externally but also internally should be consistent with what one considers to create value in the company. One explanation to this difference in value creation could be that the company representatives perceive the information in an organizational context. This can be connected to Marr *et al.* (2003) reasoning, where the company representatives experience how the reported information affect the organization and thereby better understand the future value creation in the company. This pattern can be related to Johanson's (2003) findings, where the lack of understanding of how the information types contribute to value creation results in a hesitance among the analysts. Also the external view of analysts and the lack of contact with the company might lead to that analysts estimate the indicators as less reliable. One of the analysts requested information on the problems the companies encounter. Perhaps such a section in the external data might give the impression that it improved the transparency and thus absorb more credibility from analysts.

Another interesting pattern that became visible during the interviews was the better match between the internally reported information in terms of meaning and its importance for value creation than the external information. The internal information was also generally considered more important for the value creation than the external information. This result does not necessarily mean that companies are reporting the wrong information but that if the companies would make their internal reporting external, then an improved transparency of the value of the company would be made available. Companies have of course many reasons to protect internal information. These empirical findings indicate like the prior studies made by Sakakibara *et al.* (2010) that analysts have an interest in the internal information. However, the lack of disclosure obstructs them to include this information in the company estimation. This can also be seen as the external information are subject to deviating opinions, both from the company representatives and the financial analysts, which points out insecurities whether some of the information types disclosed really are connected to value creation. According Meer-Koistra & Zijlstra (2001) this choice

of information disclosure is a result of the existing reporting standards. Based upon the results on the meaning and value creation one may assume that Bukh *et al.* (2001) approach that intellectual capital reporting generate more internal value than external might be correct. However, the external value would be higher if the companies decided to increase their disclosure of innovation capital information.

Based upon the results, one can conclude that differences in perspective may affect the content of the information when measured and reported. Companies must be aware of these differences in order to achieve as precise measuring and reporting of its innovation capital as possible. Further on, company representatives generally rate the information higher for value creation which can be explained by contextual factors. Therefore, it might be beneficial for companies to describe the internal context of the organization more elaborately, in order to increase the understanding of the reported information's internal importance. The third finding in the study reveals that financial analysts perceive internal information interesting and relevant. This implies reasons for an increased external disclosure concerning not only innovation capital, but intellectual capital in general.