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ETLA Discussion Papers, No. 778

Provided in Cooperation with:
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Suggested Citation: Lee, Stefan (2001) : Financial analysts' perception on intangibles: An interview survey in Finland, ETLA Discussion Papers, No. 778, The Research Institute of the Finnish Economy (ETLA), Helsinki

This Version is available at:
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Keskusteluaiheita – Discussion papers

No. 778

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FINANCIAL ANALYSTS´ PERCEPTION ON INTANGIBLES – AN INTERVIEW SURVEY IN FINLAND

This paper is the author´s Master's thesis approved by professors Guy Ahonen and Eva Liljeblom at the Swedish School of Economics and Business Administration.

ISSN 0781-6847 26.11.2001

LEE, Stefan, **FINANCIAL ANALYSTS´ PERCEPTION ON INTANGIBLES – AN INTERVIEW SURVEY IN FINLAND.** Helsinki: ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy, 2001, 44 p. (Keskusteluaiheita, Discussion Papers, ISSN, 0781-6847; no. 778).

ABSTRACT: The emergence of the current intangible-intensive economy does not only mean enormous opportunities but also serious challenges in different dimensions. These challenges are mainly due to some fundamental differences in nature between physical assets and intangibles. The very same reasons that explain the vast potential of intangible assets also constitute the main reasons for inadequate applicability of conventional measurement and valuation approaches. As a consequence, it is believed that accounting information fails to capture and reflect a company's value creation attributable to intangibles. And when the information provided by accounting fails to appropriately reflect the impact of intangibles on the company's current and future performance, investors will not be able to make efficient resource allocation decisions. Many empirical findings suggest that, despite the poor visibility, financial analysts do take intangibles into account and ascribe considerable value to them.

The primary source of the necessary data for the current study consists of twelve semi-structured interviews with 12 financial analysts active in Finland. One of the findings from the interview survey implies that although the respondents in general acknowledge the importance of intangibles in company's value creation, the types of intangibles and the degree of importance attached to various types of intangibles tend to vary among respondents.

KEYWORDS: accounting information, financial analysts, intangibles

LEE, Stefan, **Analyytikkojen käsitykset aineettoman varallisuuden merkityksestä – haastattelututkimus.** Helsinki: ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy, 2001, 44 s. (Keskusteluaiheita, Discussion Papers, ISSN, 0781-6847; no. 778).

TIIVISTELMÄ: Siirtyminen aineettomien pääomien vallitsevaan uudenlaiseen aikakauteen on merkinnyt paitsi lähes rajoittamattomia uusia mahdollisuuksia myös uusia haasteita. Aineellisten ja aineettomien pääomien välisen perustavaa laatua olevien eroavuuksien takia, pääsääntöisesti aineellisia pääomia silmällä pitäen kehitetty arvonmääritysmalli ja yritysten raportointimenetelmä soveltuvat puutteellisesti muuttuneessa todellisuudessa. Tämän seurauksena m.m. nykyinen kirjanpitoinformaatio antaa riittämättömän kuvan aineettomien pääomien merkityksestä yrityksen nykytilassa ja sen tulevaisuuden kehityksessä. Puutteellisten informaatioiden perusteella etenkin sijoittajien on vaikea tehdä tehokkaita allokaatiopäätöksiä. Tästä puutteellisuudesta huolimatta sijoittajien on todettu kiinnittävän huomiota aineettomiin pääomiin ja antavan huomattavaa arvoa aineettomille pääomille.

Käsilläolevan tutkimuksen aineistolähde käsittää 12 analyytikkohaastattelua. Tutkimuksessa käy ilmi, että vaikka analyytikot yleisesti tunnustavatkin aineettomien pääomien lisääntyneen merkityksen, niiden merkitys vaihtelee tuntuvasti aloittain.

AVAINSANAT: aineeton pääoma, analyytikko, tilinpäätösinformaatio

Yhteenveto

Viimeksi kuluneiden kahden vuosikymmenen aikana, taloudellisessa rakenteessamme on tapahtunut merkittäviä muutoksia. Nämä merkittävät suuret muutokset selittyvät lähinnä kiihtyneellä teknologian kehityksellä joka vuorostaan on johtanut yhä kiihtyneempään muutostahtiin ja yritysten väliseen kilpailuun. Näin merkittävästi muuttuneissa olosuhteissa, tiedon ja osaamisen merkitys on tullut etusijalle perinteisten aineellisten pääomien merkityksen jäädessä enemmän taka-alalle.

Tiedon ja osaamisen kohentunut merkitys johtuu näiden aineettomien voimavarojen tarjoamista lähes rajoittamattomista uusista mahdollisuuksista tuottaa yritykselle voittoa. Yritysten menestys ja olemassaolo on nykypäivänä pitkälti riippuvainen yrityksen hallitsemista aineettomista voimavaroista ja sen kyvystä tuottaa voittoa yhdistämällä aineettomien voimavarojen eri osia.

Siirtyminen aineettomien pääomien vallitsevaan uudenlaiseen aikakauteen on merkinnyt myös uusia haasteita paitsi itse yritykselle myös sijoittajille erilaisin seurauksin. Sijoittajien tekemät yrityksen arvon määritykset perustuvat hyvin laajalti yritysten julkaisemiin kirjanpitoinformaatioihin. Mutta aineellisten ja aineettomien pääomien välisen perustavaa laatua olevien eroavuuksien takia, pääsääntöisesti aineellisia pääomia silmällä pitäen kehitetty arvonmääritysmalli ja yritysten raportointimenetelmä soveltuvat puutteellisesti muuttuneessa todellisuudessa.

Sen seurauksena nykyinen tilinpäätösinformaatio antaa riittämättömän kuvan aineettomien pääomien merkityksestä yrityksen nykytilassa ja sen tulevaisuuden kehityksessä. Puutteellisten informaatioiden perusteella etenkin sijoittajien on vaikea tehdä tehokkaita allokaatiopäätöksiä. Tästä puutteellisuudesta huolimatta sijoittajien on todettu lukuisissa empiirisissä tutkimuksissa kiinnittävän huomiota aineettomiin pääomiin ja antavan huomattavaa arvoa aineettomille pääomille.

Käsillä olevan haastattelututkimuksen tarkoitus on selvittää mitä merkitystä aineettomilla pääomilla on analyytikoille. Analyytikkojen tulosennusteilla on huomattava vaikutus yrityksen osakekurssiin koska suurin osa sijoittajista tekee sijoituspäätöksensä näihin nojautuen. Analyytikoiden arvioinnilla voi siis olla varsin pitkälle ulottuvia vaikutuksia yrityksen osakearvoon ja näin ollen myös pääomamarkkinoiden käsityksen aineettomien pääomien merkityksestä yrityksen menestyspotentiaaliin.

Tutkimuksesta käy m.m. ilmi, että aineettomien pääomien merkitys vaihtelee aloittain. Etenkin kasvualoilla, kuten IT- ja telekommunikaatioaloilla, aineettomiin voimavaroihin kiinnitetään eniten huomiota ja ne vaikuttavat merkittävästi analyytikkojen arviointiin yrityksen tulevaisuuden kehityksestä. Sen sijaan aineettomien pääomien korostuneesta merkityksestä huolimatta, perinteisillä aloilla niihin kiinnitetään huomattavasti vähemmän huomiota. Tutkimuksessa havaittiin myös, että analyytikkojen käyttämät arvonmääritysmenetelmät ovat pysyneet melko ennallaan tapahtuneista rakenteellisista muutoksista huolimatta. Ehkä on tarvetta uudenlaiseen ajattelutapaan.

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1 INTRODUCTION

During the last two decades, we have witnessed a fundamental change in the structure of our economy. Due to intensified technological and economic changes around us, the relative importance of physical assets of the industrial age has being decreasing. Thanks to its almost limitless potential to create value, creation and recreation of knowledge is becoming increasingly important. Firm's success and survival nowadays depend largely upon the exploitation of ideas rather than upon the expansion of physical assets.

However, the dawn of the intangible economy poses serious challenges not only to firms but to others as well. These challenges are due to some fundamental differences between physical assets and intangibles in nature. Intangibles are often invisible, highly heterogeneous and inseparable. This implies among others that conventional accounting rules and valuation approaches cannot adequately be applied to intangibles.

So far, no one has succeeded in introducing a generally accepted and universally applicable solution that can help us to overcome this challenge. As a consequence of this, it is believed that accounting information fails to adequately capture a company's value creation attributable to intangibles. And when the information provided by accounting fails to appropriately reflect the impact of intangibles on the company's current and future performance, investors will not be able to make efficient resource allocation decisions.

Invisibility, however, does not necessarily imply insignificance. The discrepancy between a company's book value and market value of its equity in knowledge-intensive industries suggests that investors take intangibles into account despite the invisibility and ascribe considerable value to intangibles.

Some questions remain though. If intangibles matter, then which of them matter and how much do they matter? In this study, some possible answers to these questions from the financial analysts´ perspective are provided.

1.1 Aim and scope

The aim of this study is to explore and generate knowledge of financial analysts´ perception on intangibles.

Some specification of the purpose of this study is appropriate. The purpose of this study encompasses two different perspectives. Firstly how intangibles are perceived as concept and what distinguishable characteristics are associated with intangibles by analysts. Secondly, what kinds of intangibles do financial analysts in determining future success and survival of a company perceive as relevant and how are they valued.

In various intellectual capital-related literatures, the intensity and variety in importance of intangibles are shown to vary dependent on industrial age and growth potential. Therefore in order to identify possible similarities and dissimilarities, the respondents who participated in the interview survey carried out in this study represent industries of divergent industrial age and growth potentials.

This study examines solely financial analysts from both buy- and sell-side currently active in Finland. Thus the results and conclusions inferred from present study are not generalisable to other professionals in the capital market, such as brokers, portfolio managers and individual investors. These groups of professionals are not surveyed in this study.

As an integral part of the capital markets financial analysts exert considerable influence on the market price of a firm. It can be thus useful to obtain knowledge about the relevance of intangibles to financial analysts. This study will hopefully contribute to generate further understanding concerning the issue at hand.

1.2 Structure of current study

In chapter 2, relevant issues concerning the intangibles will be presented. It will mainly encompass some explanations for the emergence of intangible economy and its implications on various sectors in our economy will be presented.

In chapters 3 and 4, the description of research method employed in this study and the results obtained from the interview survey will be presented. And finally in chapter 5, summary of the findings from the current study and a suggestion for future research will follow.

2 INTANGIBLES AND THEIR IMPLICATIONS

In this chapter, issues which are intimately related to the emergence of the intangible economy will be discussed. First, some issues concerning the dynamics of intangibles in general will be presented. Then, some key implications of intangibles on different aspects of economy will be discussed.

2.1 The intangible economy

In various literatures many have asserted that during the last two decades, a fundamental shift has taken place from a tangible to an intangible economy.[1] The distinguishing feature of the knowledge-based intangible economy is that economic value and wealth is created mostly by brain rather than by brawn. As Goldfinger asserts:

” *The source of economic value and wealth is no longer the production of material goods but the creation and manipulation of intangible content*”.[2]

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1 Goldfinger, C. (1997). See also Canibano, L. et al. (1999); Lev, B. (2000).
2 Goldfinger, C, (1997), p. 5.

And as a consequence, the relative importance of physical assets of the industrial age continues to decrease. After the advent of the intangible economy, knowledge and innovations are the key trends that manifest the modern economy.

A company's success and survival nowadays depends largely upon the exploitation of ideas rather than upon the expansion of physical assets. [3] The increase in business-funded R&D activity among OECD member countries in real terms as a percentage of GNP since the late 1960`s affirms this assertion.[4]

There are three unique attributes associated with knowledge assets which physical assets lack, namely non-scarcity, increasing returns and network effects.[5]

Knowledge assets, unlike physical assets, are non-scarce because the deployment of a knowledge asset in a specific task does not constrain its simultaneous deployment in other tasks. Hence, it can be deployed simultaneously in multiple tasks.

Unlike physical assets in general, knowledge assets are not subject to diminishing returns to scale since knowledge is cumulative. Knowledge is cumulative when every new knowledge is often based upon already existent knowledge. In other words, the more extensive use of knowledge, the greater are the potential benefits. As Sveiby asserts:

" *Capital assets depreciate with use, but knowledge asset appreciates*"[6]

Network effects are one of the main contributors, which fortify the effects of increasing returns. When successfully employed, knowledge assets create network effects through positive feedback that is dependent upon the interaction between a company and its customers and suppliers.[7] In the intangible economy, mass production is replaced by mass customisation. Under such circumstances, companies are compelled to create specific products that reflect the requirements and individual preferences of consumers. And due to this change, companies are compelled to be constantly aware of customers´ needs and therefore consumers become involved in the actual production process through their feedback.

The vast value creation potential of knowledge assets is constrained by the potential growth and size of the market.

Knowledge, however, has always been the central source that constitutes core competence. And the core competence, in turn, has yielded sustainable competitive advantage and economic rents, long before the dawn of the intangible economy. Therefore, the assertion that economic prosperity depends upon knowledge and its useful application is not new wisdom.[8] Francis Bacon among others proclaimed already hundreds of years ago that "knowledge is power".

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3 Ibid.
4 Canibano, L et al, (1999).
5 Lev, B. (2000).
6 Sveiby, K.E. (1997), p. 23.
7 Lev, B. (2000).
8 Teece, D. J. (1981).

What distinguishes the current situation however is the unique structural changes in our economic reality that have occurred during the last two decades. The uniqueness of the current business environment can be inferred from the urgency of companies to innovate due to intensified competition. The increasing competition is believed to be mainly driven by globalisation and liberalisation in key economic sectors together with great advances in technology, especially information technology.[9]

Both economic and technologic developments, which pursuit each other, compel companies to recognise intangibles as the critical success factors due to their vast potential to generate economic benefits, and to focus on intangibles in order to succeed and remain competitive.[10] Knowledge creation and management have therefore become one of the main concerns of companies in the intangible economy.

Because of the profound importance associated with intangibles in our knowledge-based economy, several attempts have been made to find adequate definition and classification of them in order to broaden our understanding of intangibles.[11] This is because the prerequisite for developing and successfully exploiting intangibles is that they can be identified, classified, measured and reported appropriately.[12]

Failure to identify means also failure to efficiently exploit and allocate valuable resources, which may result in a loss of competitive advantage and economic wealth.[13]

2.1.1 Current definitions of intangibles

Despite various efforts to define and classify intangibles, there isn't any precise definition or classification that has gained common acceptance. As Johanson et al. contend, "There is no generally accepted definition of intangibles."[14]

According to IAS 38 issued by International Accounting Standards Committee, intangible assets are identifiable non-monetary assets without physical substance held for use in the production or supply of goods or services, for rental to others, or for administrative purposes that are identifiable and controlled by an enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise.[15] This definition does not encompass human resource such as employees skill and experience that are critical to value creation of a company.

Petrash and Bukowitz define intangibles as anything valued without physical dimensions that is embedded in people or derived from processes, systems and culture associated with an organisation. Their definition includes for instance brands, individual knowledge, intellectual property and organisational knowledge.[16]

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9 Lev, B. (2000).
10 Ibid.
11 Johanson, U. (2000).
12 Ahonen, G. (2000).
13 Canibano, L. et al. (1999).
14 Johanson, U. (2000), p. 2. See also Eronen, A. (1999b).
15 IASC. (1998).
16 Petrash, G. and Bukowitz, W. (1997).

Both Sveiby and Edvinsson and Malone define intangible assets as the difference between the market and book value of firm's equity or stock price premium. [17]

The Intangible Research Centre of the Leonard N. Stern School of Business views intangibles in two different ways, broadly and narrowly. According to the broad definition, intangibles are non-physical sources of future economic benefits to an entity or alternatively all the elements of a business enterprise that exist in addition to monetary and tangible assets. The narrow definition on the other hand defines intangibles as non-physical sources of probable future economic benefits to an entity that have been acquired or developed internally from identifiable costs that have a finite life and market value apart from the entity and are owned or controlled by the entity.[18]

According to Arthur Andersen, intangible assets are non-physical in nature capable of producing future economic benefits and protected legally or through a de facto right.[19] Its definition of intangibles comprises four kinds of intangibles, namely brands, intellectual property, publishing rights and licenses. Alike definition of intangibles in IAS 38, Arthur Andersen´s definition is far from exhaustive because it disregards other critical elements of intangibles, such as human resource and know-how. Its definition includes solely such kinds of intangibles that are typically acquired in connection with business acquisition and excludes such intangibles that are created internally.

Hendriksen and van Breda define intangibles as the assets that are inferred from deferrals of expenditures on services. They separate two different types of intangibles, traditional intangibles on the one hand and deferred charges on the other. Deferred charges include such elements as advertising and promotion, computer software development costs, organisation costs and training costs. The traditional intangibles include typical intellectual property rights, such as patents, licenses and copyrights.[20]

Distinguishing similarities between various definitions of intangibles are lack of physical form, requirement on some form of control on legal or illegal basis and capability of yielding future economic benefits.

2.1.2 Classification of intangibles

There are numerous suggestions of classification intangibles but there are also divergent views on how to appropriately classify intangibles.[21]

One of most widely recognised classification of intangibles is the classification of intellectual capital as suggested by Swedish insurance group Skandia and Leif Edvinsson(1997).[22] They divide intangibles into two main categories, namely human capital, structural capital. The structural capital in turn encompasses customer capital and organ-

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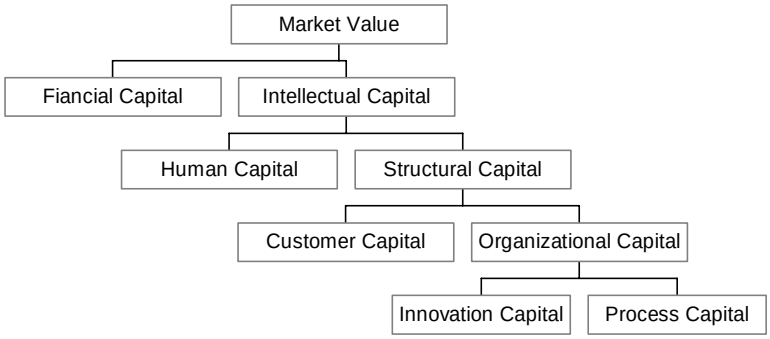
17 Sveiby, K.E. (1997). See also Edvinsson, L and Malone, M.S. (1997).
18 Canibano, L. et al. (1999).
19 Arthur Andersen. (1992).
20 Hendriksen, E.S. and van Breda, M.F. (1992).
21 Canibano, L et.al. (1999). See also Eronen, A. (1999); Johansson, U. (1999).
22 Gröjer, J. E. (2000).

isational capital which in turn comprises of innovation capital and process capital.[23] Their classification can be illustrated as following:



Source: Skandia (1994)

Human capital is defined as all individual capabilities, associated with the individual knowledge, skill and expertise of the employee and management that are non-stationary. It is crucial for the organisation because it facilitates innovation and strategic renewal.

Structural capital is defined as ”the embodiment, empowerment and supportive infrastructure of human capital” and refers to among others information channels and databases and corporate culture which are to a various degree owned or controlled by the company. It encompasses such systems, tools and operating philosophy that organises the flow of knowledge. These forms of intangibles are stationary and it enables companies to meet market requirements.

The organisational capital can be described as organisation’s ability to extract the best solutions from the knowledge of its workers. Firm can be regarded as a repository for knowledge. However each individual can possess a high level of intellect but if the organisation has inadequate infrastructure through which human intellect is embodied and empowered, the overall intellectual capital can not be maximised. This innovation capital within the organisational capital is a company’s ability to transfer, assemble, integrate and exploit knowledge assets.

The other element of the organisational capital, process capital, can be described as the company’s ability to create value from human capital by work. For instance in software industries, this element of organisational capital may be very important.

Finally the customer capital within the structure capital refers to customer relations. It is concerned with firm’s relationship with its external environment and may include such as customer relationships, customer loyalty and supplier relations. Its primary objective is to through interaction with its customers and suppliers better adapt to market demands by capturing value of loyal customers and external networks.

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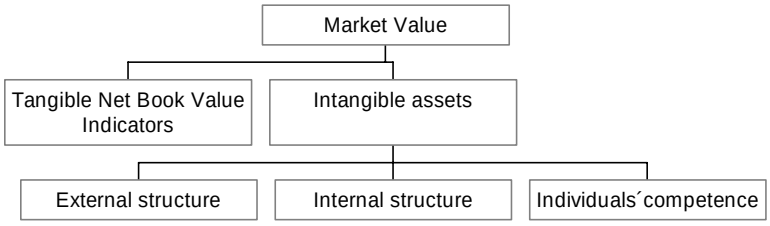
[23] Edvinsson, L and Malone, M.S. (1997).

Also Sveiby proposes the three-fold division of intangibles that of similar to Edvinssons and Malones. He refers to external structure, internal structure and individual competence.[24]

The external structure comprises of company's external relationships with its customers and suppliers, brand names, trademarks and reputation or corporate image. The value that can be derived from these assets are largely dependent on how well the company solves its customers´ problems.

The internal structure consists of such asset as patents concepts and administrative systems which are created by the employees and are either internally generated or externally acquired. Also the informal structure and the corporate culture belongs to the internal structure. The internal structure and the people together constitute what is generally referred to as organisation.

Sveiby defines individual competence as individual's ability to act in various situations. It includes skill, education, experience, values and social skills. All assets and structures are the embodiment of human action and depend ultimately on individuals for their continued existence. The competence cannot be owned by anyone but the person who possesses them because people cannot be object of property rights. Sveiby´s classification can be illustrated as following[25];



Sveiby´s classification is compatible to Edvardsson´s and Malone´s and the resemblance of the two classifications by Edvinsson and Sveiby is relatively obvious.

Roos et al. on the other hand propose a twofold classification of intangibles into human and structural capital.[26] These two main capitals are further divided into three subcategories each. Human capital is thus further divided into competence based on knowledge and attitude based on motivation and behaviour. In addition, human capital includes intellectual agility based on innovation, imitation, adaptation and packaging.

Structural capital in turn entails relationships with customers, suppliers, alliance partners and shareholders. Organisation includes infrastructure, processes and organisational culture. Structural capital includes also renewal and development.[27]

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24 Sveiby, K.E. (1997).
25 http://www.sveiby.com.au/EmergingStandard.html
26 Roos, J. et al. (1997).
27 Roos, J. et al. (1997).

Despite some variety, there are several common characteristics between various suggestions on classification of intangibles that are apparent. One of the apparently similar features is the categorisation of intangibles into human-related, organisation-related and external relations.[28]

Another distinguishable similarity between various suggestions for classification of intangibles is that intangibles are regarded often as financial or non-financial by their nature and as being internally generated or externally acquired and further more as person-dependent or person independent. [29]

A further similarity between different classifications of intangibles is that intangibles often entail either intangible property or/and intangible resource. Here the intangible property encompasses such assets that are protected by law. The intangible resources on the other hand constitute the remaining assets which does not qualify as intangible property within the legal framework. Hall defines intangible resources either as assets or skills. It involves either skills or competence and encompasses such resources as employee knowledge and suppliers, all of which enable the organisation to cope with change.[30]

One of major problems that encumber various attempts to produce a common prescriptive definitions and classifications of intangibles seems to be that intangibles are often difficult to identify and to separate from other assets. This is due to the fact that intangibles often interact with each other, which makes it difficult to separate.

This is further aggravated by the fact that intangibles are often highly heterogeneous not only between different category but also within the same category.[31]

2.2 Challenge for accounting

As addressed above, the economic wealth and corporate value were mainly produced by physical assets, which could easily be identified and recognised as either assets or costs. However as the firms are compelled to commit and direct more and more funds to intangible investments and since most of these assets are to a large extent invisible in financial statement, transformation into intangible economy poses many serious challenges to the informativeness of accounting information. As Gröjer and Johanson assert:

"These soft resources are only given minor recognition in today's financial statement".[32]

Several both academics and professionals within financial accounting field have claimed that value relevance of information disclosed by accounting has been deteriorating due to the change in economic reality.[33] Lately witnessed discrepancies between the market value and the book value of companies especially within the software and telecommunication

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28 Sveiby, K.E (1997). See also Edvinsson, L. and Malone, M. S. (1997).
29 Canibano, L. et al. (1999). See also Eronen, A. (1999); Gröjer, J.E. and Johanson, U. (2000).
30 Hall, R. (1992). See also Johansson; U. (1999); Eronen, A. (1999).
31 See also Goldfinger, C. (1997).
32 Gröjer, J.E. and Johanson, U. (2000), p. 2.
33 Lev, B. (1999); Amir, E. and Lev; B. (1997); Lev, B. and Zarowin, P. (1998); Eronen; A. (1999); Sveiby, K.E. (1997); Canibano, L. et al. (1999).

industry are often presented as prominent evidence of declining relevance. This is mainly due to failure by conventional accounting to adequately capture the company's value creation attributable to intangible assets.

The logic behind accounting practice that is designed for informational needs of manufacturing industries poorly corresponds the current situation where the intangible assets dominate. When business environment has gone through substantial changes since conventional accounting were invented, it is natural that there exists a need of corresponding change in the way companies disclose information. As Sveiby maintains:

" if we measure the new with the tools of the old, we won't be able to perceive the new".[34]

Especially when accounting information is competing in current information society with other information sources, the relative usefulness of accounting information decreases especially as the speed of diffusion of these informations has increased due to advances in information technology. This is because as accounting information becomes comparable, it can be partially abandoned if it is inadequate in comparison to alternative sources of information.

In order for accounting information to prevail in a competitive information market, it is essential that the information provided by accounting succeed in adequately reflecting the economic reality in which companies operate by providing relevant historical data on firm's past performance and firm's ability to create future value.

However many accounting standards and practices have remained stagnant while business has changed. Many of them still do not recognise innovative activities as strategic variables.[35]

On the other hand when evaluating the usefulness of accounting information for investors, one should also be aware of the fact that investors can and do readily take advantage of portfolio diversification.[36]

The theory of portfolio diversification suggests namely that most of unsystematic risks associated with stocks of each company can substantially be diminished through diversification. And as a consequence, the demand for firm-specific information diminishes as the degree of diversification increases.

This suggests that demand for firm-specific information among investors varies in relation to the degree of diversification. A diversified investor will not have demand for information about risk related to each security included in his portfolio whereas for less diversified investors security-specific information is crucial. Therefore the demand and usefulness of accounting information can vary substantially between investors dependent upon the degree of diversification.

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[34] Sveiby, K.E. (1997), p. 155.
[35] Canibano, L. et al. (1999).
[36] Beaver, W, H. (1981).

2.2.1 Recognition of intangibles

Although there seems to be a relatively unanimous opinion about the inadequacy of current accounting treatment of intangibles, there are several dissenting opinions of whether intangibles should be recognised as assets in financial accounting and if so how they should be reliably measured and depreciated.[37] And as a consequence asset recognition of intangibles differ across countries.

Those who advocate non-recognition of intangibles assert that there are significant differences between intangibles and tangible asset in several aspects.

According to them, intangibles are first of all often difficult to identify and to separate from other assets. Unlike tangible assets in general, intangibles are highly heterogeneous not only between categories but also within a given category. Furthermore intangibles often interact with each other. And when the value of an asset is predicated on the existence and/ or use of other assets, it is hard to determine the separate contribution of the intangible asset.[38]

Difficulties of reliably distinguish intangibles from each other means also lack of reasonable certainty in the measurement. Various expenditures on these items cannot be distinguished from the cost of developing the business as whole. Hence for instance IAS 38 paragraph 52 explicitly prohibits the recognition of such internally generated intangibles as goodwill, brand names as assets. [39]

The non-recognition of intangibles as assets is also often justified by the high level of uncertainty that is involved in investments in intangibles. Kothari et al found that earnings volatility of R&D investment is three times greater than that of investments in physical assets.[40] There is an inherent, high degree of risk of innovation process and the intangible investment underlying this process. Certainly investments in tangibles also involve some degree of risks, but the risk inherent in intangibles is generally substantially higher.[41]

Furthermore, it is argued that intangibles that are fundamentally derived from knowledge asset, do not follow the same patterns of depreciation as tangible assets. Because intangibles are not limited by physical constraints, they do not follow the classical progressive depreciation rules. Some assets impair rapidly in their value while others follow non-linear and often unpredictable life cycles. [42]

Also the absence of an active market for most of intangibles is claimed to justify the different accounting treatment of intangibles. [43] The absence of an active and organised market for intangibles make measurement and valuation of intangibles almost impossible within the framework of conventional measurement and valuation approach.

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37 Canibano,L. et al. (1999).
38 Lewis, E.E. and Lippitt, J.W. (1999). See also Canibano, L. et al. (1999).
39 IAS 38, paragrahp 52. (1998).
40 Kothari, S.P. et al. (1998).
41 Lev, B. (2000).
42 Goldfinger, C. (1997). See also Canibano, L. et al. (1999).
43 Canibano, L. et.al. (1999). See also Lev, B. (2000).

Issue of ownership of intangibles is also referred to as another weighty reason for non-recognition of intangibles as assets. This is because the ownership of intangibles is considerably ambiguous than tangible assets. For instance unlike tangible assets that are exclusively owned by a company, some intangibles cannot be owned by a company in legal sense. No employee cannot be owned by a company neither are the customers even though they both contribute significant value to a company.

Those who advocate equal treatment between tangible assets and intangibles contend that different asset recognition criteria for intangibles are beset by inconsistencies.[44] They maintain that discrimination of investments in intangibles by several accounting regulatory systems is inconsistent because the economic rationale underlying the investments in both types of assets are alike. They are both necessary for firm's value creation and inspired by common corporate goal to achieve a higher long-term profitability and competitiveness in the future. [45] When investment expenditures of intangible assets cannot be capitalised or amortised as tangible assets but must be immediately expensed, the principle of matching costs become distorted and eventually make it difficult to identify cause and effect-relationship in value creation.

2.2.2 Externally acquired vs. internally generated intangibles

In accordance with the conclusions from the Lisbon European Council, the European Commission has proposed that all EU publicly traded companies should be required to prepare consolidated accounts in accordance with IAS and provide an option for Member States to allow unlisted companies to report in accordance with IAS until year 2005.[46] As a consequence IAS issued by International Accounting Standards Committee will prevail as the only common accounting standard within EU. As the prescriptive accounting standard, IAS will have far-reaching consequences in the near future.

The International Accounting Standards Committee issued IAS 38 " intangible assets" in September 1998. IAS 38 prescribes that an intangible asset should be recognised initially at cost if and only if asset is identifiable, controlled and clearly distinguishable from enterprise's goodwill. It also prescribes that the future economic benefits attributable to an asset should be probable and the cost of the asset can be measured reliably.[47] These requirements applies to both intangible asset is acquired externally and generated internally through development activities or other types of activities. If an intangible asset does not meet above-mentioned criteria for the recognition, IAS 38 requires the expenditure to be recognised as an expense when it is incurred.

IAS has however not been well received by professionals. This is because despite its wording, the accounting treatment in IAS 38 for internally generated intangibles is substantially different from acquired intangibles. The qualification criteria for internally gen-

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44 Lev, B. (2000).
45 Sveiby, K.E. (1997).
46 EU Financial Reporting Strategy. (2000).
47 IASC. (1998).

erated intangibles are more restrictive than for externally acquired intangibles. As a result, very few internally generated assets would be able to qualify for recognition.[48]

Discrimination of internally generated intangible assets is, according to many, unjustified since there lies no significant difference between externally acquired intangibles and internally generated intangibles. They are equally vital for firm's value creation and are created or acquired by common corporate goal, that is to facilitate a higher long-term profitability and competitiveness in the future. [49]

IAS 38 specifically prohibits the recognition as assets of internally generated goodwill, brands, mastheads, publishing titles etc. However this prohibition does not apply when they are acquired. It is stated in paragraph 52 of IAS 38 that expenditure on internally generated brands and similar items cannot be distinguished from the cost of developing the business as whole. However this is equally impossible to distinguish brands when it is acquired.

Secondly it follows from the recognition criteria that all expenditure on research should be recognised as an expense. The same applies to training costs and advertising costs. However expenditures on internal R&D activities and advertising activities undoubtedly contribute to firm value creation. Results from several empirical researches indicate the value relevance ascribed by capital markets to certain internally generated intangible assets. For instance Chan et. al found a positive stock market reaction to firm's announcements regarding R&D activities.[50] Chauving and Hirschey show that not only R&D expenditures but also advertising investments have large, positive impact on the value of company.[51]

These empirical findings support the view that even though internally generated intangibles are not currently recognised as assets, they contribute to firm value and the capital market ascribe asset-like status to certain types of internally generated intangibles. These findings imply that non-recognition of certain intangibles can have deteriorating impact on informativeness of accounting information.

2.3 Challenge for capital market

The crucial role of information on financial market is unassailable. Movements in security price we witness in the stock market is a reflection of different actors´ assessment of companys´ future earning potentials based on available information set.

In their assessment different actors in the financial market including investors, financial analysts and creditors, primarily rely on information disclosed in accounting data. Accounting underpins the entire system of market information.

However when accounting fail to appropriately reflect the impact of intangibles on company's current and future performance, investors will not be able to asses the value of

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48 Canibano, L. et al. (1999).
49 Sveiby, K.E. (1997).
50 Chan, S.H., Martin, J.D. and Kensinger, J.W. (1990).
51 Chauvin, K.W. and Hirschey, M. (1993).

companies to make efficient resource allocation decision. And this may affect an effective resource allocation in the capital markets.

Investors may be reluctant to allocate his or her resource to companies that undertake large investments in intangibles, because these companies appear less appealing in the short term. Instead, they may decide to allocate investments to companies that invest little or nothing in intangibles and thus appear more appealing in the short term.[52]

According to Amir and Lev this may explain why R&D intensity firms are systematically undervalued. [53] Operations within these industries involve substantial investments in R&D and customer acquisition early in a firm's life cycle. Immediately expensing such investments that contribute to firm's future value, will distort the true picture of firm's future potential.

Furthermore when accounting information is distorted in this manner, the information gap between the corporate insiders and the investors increases, i.e. asymmetric information. Information asymmetry is a situation where for a given amount of information one party of the market has better information than the others, and the less informed side is aware of this difference. Eccles and Mavrinac found that there is a information gap among market participants and that this gap is most obvious between the management and investors in high-technology industries.[54]

Both theoretical and empirical researches suggest that asymmetric information has negative effect on the financial markets. According to van Ees and Garretsen asymmetric information in financial markets causes inefficiencies because problems related to adverse selection may arise and investors may demand for a higher risk premium in compensation for higher uncertainty.[55]

The salutory effect of shrinking the informational gap between the informationally superior management and the informationally inferior investors appears to be obvious. The main benefits of improvements in informativeness of accounting will most likely be enhanced probability of good investment decisions.

Several studies in relation to impact of accounting on information asymmetry in stock market have been conducted by using bid-ask spreads as proxies for transaction cost in the stock market induced by asymmetrical information. One of the main empirical findings from these studies is that the availability of better accounting information can reduce transaction costs that are proxied by reduction in bid-ask spreads.[56] These results imply that transaction costs in terms of reduction in bid-ask spreads may be achieved by enhancing the quality and content of accounting. Hence, it seems crucial to to transform the insider information to outsider information, thereby reducing the information asymmetry.[57]

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52 Canibano, L. et al. (1999).
53 Amir, E. and Lev, B. (1997).
54 Eccles, R. and Mavrinac, S. (1995).
55 Van Ees, H. and Garretsen, H. (1993).
56 Callahan, M.C., Lee, C.M.C. and Yahn, T.L. (1997).
57 Diamond, D.W. and Verrecchia, R.E. (1991). See also Callahan, C.M. et al. (1997).

However at the same time, it is important to bear in mind that security prices reflect a comprehensive range of information disclosed by various means among which accounting information constitute only one alternative source of information. Hence an investor is not constrained to use and does not use solely the information provided by financial accounting but they can and do exploit other sources and types of information.[58]

As Beaver states:

"It may be naive to believe that merely because an item does not appear in the financial statements, it is not reflected in prices."[59]

It is the economic meaning of any information for security prices which is important not the way in which it is described in accounts. When assessing the usefulness of accounting information, it is therefore necessary to take other available sources of information into account.

There seems to be a great controversy over the way in which to remedy the decreased informativeness of accounting information.[60] Lev and Zarowin suggest capitalisation of intangible investments as a remedy for deteriorating informativeness of accounting information and information asymmetry. They contend that such capitalisation will improve the periodic matching of costs and benefits. Furthermore, amortisation and write-offs of intangible assets will disclose at the same time information about manager's assessment of the expected benefits of intangibles. And this would decrease the information asymmetry associated with uncertainty of the progress and success of innovation producing activities.[61]

Some however have cast doubts on the suitability of extensive capitalisation.[62] Financial analysts, among others, have opposed the capitalisation of internally generated intangibles because capitalisation of intangibles´ costs may not accurately measure the economic value of these assets.[63] Their opposition may on the other hand be an attempt to secure their own position as a crucial information intermediary. Disclosing more accurate information about the value of intangibles may namely diminish the value of their contribution to information production.

Furthermore capitalisation and the amortisation of capitalised intangibles is opposed because it will be based on management's own discretion. There are some concerns that this may open opportunity for management to abusive reporting behaviour because capitalisation of costs attributable to intangible assets cannot accurately measure the economic value of intangible assets.

Some have suggested the possibility of enhancing current accounting information by including more extensive and detailed information. But there are also certain scepticism concerning more extensive and detailed disclosure to correct information asymmetry. This is

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58 Hopwood, A. (1981).
59 Beaver, W. H. (1981), p. 164.
60 Canibano, L. et al. (1999).
61 Lev, B. and Zarowin, P. (1998).
62 Ely, K. and Waymire, G. (1999).
63 Canibano, L. et. al. (1999). See also Lev, B. and Zarowin, P. (1998).

mainly due to competition issues.[64] Since too extensive information content may undermine the potential competitive advantage that the firm has achieved through investments in intangibles because of the possible danger of imitation. These imitations could result in a substantial decrease in ROE that ultimately may lead to impairment of share value.

It may be thus in the interest of both managers and shareholders with long-term interests in the firm not to reveal information, which may expose the firm to its competitors.[65]

2.3.1 Usefulness of non-financial information

There are several empirical findings that indicate that as a consequence of deteriorating informativeness of accounting information, increasing importance is being ascribed to non-financial indicators of qualitative nature by investor community.

Several empirical evidence of significant association between firm's market value and new product announcements[66], employee development programmes [67]and customer satisfaction[68] indicates usefulness of non-financial data for capital market.

Furthermore, the empirical evidence from studies conducted by Ernst & Young indicate that investors are taking broad range of non-financial information into account.[69] For instance results from survey conducted by them show that five most highly valued factors that influence investor's capital allocation decision were, strategy, quality of strategy, management credibility, innovativeness and firm's ability to attract talented people.

At the same time it is essential to bear in mind that the decreasing usefulness, however, should not be interpreted as a total absence of usefulness. Even though the relative importance of accounting information in a state of rapid phase of change may prove to be less, there is always a need for historical information about a company.
Historical information provide crucial means of interpreting the most recent information which in isolation may appear meaningless, especially for those who evaluate past relationships as a primary means of assessing company's future development.

What decreasing relevance implies is that in a world of accelerating rate of change where an extensive part of value creation is attributable to intangible assets, firms´ future financial performance can better visualised by more forward-looking, non-financial information. [70]

For instance Dzeng showed that financial information complemented with non financial information enhance accuracy of earnings forecasts than financial statement information alone.[71] Many of those who have asserted the decreasing value relevance of accounting information have thus proposed more extensive use of nonfinancial information.[72]

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64 Canibano, L. et.al. (1999).
65 Canibano, L. et al. (1999).
66 Chaney, P., Devinney, T. and Winter, R. (1991).
67 Gordon, L.A., Pound, J. and Porter, T. (1994). See also Canibano, L. et.al. (1999).
68 Ittner, C.D. and Larcker, D. (1998).
69 Ernst & Young. (1999).
70 Mavrinac, S. and Siesfield, T. (1998); Kaplan, R.S. and Norton, D.P. (1993); Sveiby, K.E. (1998).
71 Dzeng, S. (1994). See also Cohen, J.R. et al. (2000).
72 Ittner, C. and Larcker, D. (1998).

One of the main shortcomings which hampers the usefulness of non-financial indicators is that the outcomes from these indicators are due to the lack of comparability and impartiality because there is not any generally accepted standard for reporting these measures.[73] Comparisons across firms that are critical to investment decisions are difficult since the ways the non-financial measures are calculated may vary over time.

There are also some concerns that the non-financial data from companies may be biased and manipulated in the absence of sanction by external auditors.
Lev and Zarowin maintain therefore that in order for non-financial information to remedy its low reliability and comparability, it should be transformed into financial variables which will allow it to be linked to the financial reporting system.[74]

Sveiby however asserts that there are no significant differences on reliability and objectivity between financial and non-financial indicators. He contends that financial measures, as an established framework, has higher face value because it is experienced as being more objective measure and easy to quantify. However according to Sveiby there exists no objective measures because any measurement is limited by both uncertainty and subjectivity.[75]

The main reason why the financial measures seem more objective is because they have existed and exerted influence on us so long that their objectivity are taken for granted and are unquestioned. However taken-for-granted beliefs, unquestioned operating rules and other premises and practices can create self-constrained view of the world. While they create a way of seeing and acting, they also tend to create ways of not seeing and eliminate the possibility of actions associated with alternative views of the world.[76]

2.3.2 The role of financial analysts

Financial analysts form an integral part of capital market by functioning as information link between the company and investors.

Financial analysts are believed to have considerable influence on the market price of firm's security, when most investors rely on analyst earnings projections and estimates instead of producing their own.[77] Especially when the usefulness of traditional accounting information is decreasing in a world of rapid changes due to time lag, analysts´ provide valuable prospective information by relying on comprehensive range of different information sources.

Hirst et. al contend that among various sources of information that are available for investors, the information provided by financial analysts is one of the most important source of information for investors.[78] These information are believed to have value because financial accounting information are in general highly complex due to its technical nature it requires professionalism in order to be utilised meaningfully.

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73 Lev, B. (2000).
74 Lev , B. and Zarowin, P. (1998); Canibano, L. et al. (1999); Eronen, A. (1999).
75 Sveiby, K.E. (1997).
76 Morgan, G. (1997).
77 De Bondt, W. and Thaler, R. (1990). See also Beaver, W. (1982).
78 Hirst D. E. et.al. (1995).

Thanks to their expert knowledge, financial analysts play a significant role in promoting efficient functioning of the capital markets by reducing the information asymmetry by serving as an indirect external monitor of managerial activity and decision making. When there is a separation between the ownership and control, there is a possibility for the management to pursue activities that benefit themselves at the expense of shareholders.[79] Analysts help to reduce these agency costs associated with the separation of ownership and control by providing information about the activities of management.[80]

The relationship between financial accounting and financial analysts is therefore dualistic. On the one hand financial reporting is the main source of information for the analysts, but on the other hand the information produced by analysts through rework of financial accounting data compete with the information provided by financial accounting.

Financial analysts can be divided into two different groups, buy side- and sell side analyst. Even tough both perform analysis, it is primarily sell-side analysts who convey forecasts to buy-side analysts, portfolio managers and retail stockbrokers. Buy-side analysts are thus one of the various users of sell-side analyst forecasts and they use sell-side analysts report instead of making own estimates or as an additional input into decision process when they form their own judgement. And based on this judgement, buy-side analysts make recommendations to portfolio managers. However stock recommendation is common for both sell-side and buy-side analysts.[81]

There is also another notable difference between sell-side and buy-side analysts with respect to employment arrangement. Sell-side analysts function typically as a support capacity for brokerage or investment firms who provide underwriting and brokerage services. Sell-side analyst report is generally reported to clients through brokers.

The buy-side analysts, on the other hand, are usually employed by different asset management firms or institutional investors like pension funds, mutual funds, banks or insurance companies and their function more as an advisory capacity. [82] Buy-side analysts´ reports are used internally by a portfolio manager.

It is the sell-side analysts who primarily maintain close relationship with corporate management. They receive more detailed information from the management through various means e.g. conference call meetings. However the privileged access does not come without a price.

Some empirical findings imply that sell-side analysts are overoptimistic in their future estimates. This is referred to as upward bias.[83] One possible explanation for this upward bias is the incentive structure sell-side analysts are facing.

As stated above, most of sell-side analysts work for different brokerage firms or investment banks that have investment banking relationship with a company. Since information is costly to process and sell-side analysts do not contribute to generate profit to cover those

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79 Grinblatt, M. S. and Stephen, A. R. (1985). See also D´Mello, R. and Ferris, S.P. (2000).
80 Jense, M. and Mecling, W. (1976). See also D´Mello, R. and Ferris, S.P. (2000).
81 Schipper, K. (1991). See also Ackert, L.F. and Athanassakos, G. (1997).
82 Schipper, K. (1991). See also Williams, P. et.al. (1996).
83 De Bondt, W. and Thaler, R. (1990).

costs, these costs must be compensated by expected profits in forms of underwriting fees, trading profits and commissions from securities trading. Sell-side analysts are therefore likely to make more favourable recommendations of company with which his firm has investment-banking relationship in order to promote transactions.[84]

Evidence from Womack´s study indicates new buy recommendations occur seven times more often than sell recommendations.

Another possible reason for the upward bias is the fear of denied future access to management as a result of unfavourable forecasts on companies.[85] This may provide explanations for why analysts are reluctant to issue sells recommendations. In addition to possible denial of access to managerial information, an incorrect judgement on a sell recommendation is likely to be more costly for an analysts´ reputations than an incorrect buy recommendation.

However a more certain information environment through enhanced informativeness of accounting information may mitigate analyst bias. According to Ackert and Athanassakos, there is a strong positive relation between over-optimism and uncertainty which implies that if much uncertainty surrounds a firm, analysts are likely to issue overoptimistic forecasts with considerable dispersion.[86] When uncertainty on the other hand is low, little dispersion is probable among analysts´ forecasts. Under such condition when little uncertainty surrounds a firm, analysts may be unwilling to issue overoptimistic forecasts because of reputational concerns.

2.4 Challenge for management

The shift to intangible economy pose also somewhat different kinds of challenge to management.

As knowledge and application of knowledge are becoming the main source of competitive advantage for companies, it is imperative for companies to be able to efficiently identify, generate and exploit its intangible assets. Failure to do so would otherwise result in a loss of competitive power and financial position in the long run.

More intensified competition as a consequence of globalisation and other fundamental structural changes mean that companies competing in the intangible economy must possess and develop dynamic abilities.

The dynamic ability is company's ability to detect new opportunities and to seize those new opportunities by assembling, transferring reshaping its knowledge-based assets accordingly. In order to survive and sustain, it is inevitable that companies have ability to adapt quickly to external changes.[87]

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84 Womack, K.L. (1996). See also Ackert, L. and Athanassakos, G. (1997).
85 Previts, G.J. et al. (1994). See also Francis, J. and Philbrick, D. (1993).
86 Ackert, L. and Athanassakos, G. (1997).
87 Teece, D.J. (1998).

In order for companies to become dynamic, companies therefore require performance measurement that is more dynamic that those in current use. The challenge here is to develop a set of measures that capture the true essence of critical success factors for the company. Such measures will improve management's knowledge of the underlying process of value creation that is of substantial importance in order to better meet market's requirement.

However just like conventional accounting systems, performance measurement systems that were successful in the past are allegedly becoming inadequate and can result in wasted resources and missed opportunities. This is because traditional financial measurement is in general short-term oriented and may therefore result in management myopia.

Hence, growing number of companies are increasingly using non-financial performance measurements.[88] Kaplan and Norton introduced balanced scorecard as one possible solution that enables management to supplement the traditional financial measurements with non-financial performance measurement.[89]

There are four key and interrelated business perspectives identified in the balanced scorecards, namely shareholder, customer, internal and innovation which are linked with each other by vision and corporate strategy.

Balanced scorecard provides a useful link between company's long-term strategy with its short- term actions and helps management to track performance from a more versatile perspective by indicating cause and effect relationship among output measures and performance drivers which current performance measurement insufficiently reveal.

The balanced scorecard also assist management to focus on relevant issues by minimising information overload through decrease in number of measures.

Scorecard enriches current performance measurement by combining financial measures with non-financial measures in an effort to convey a more comprehensive and strategic, long-term view of the company's condition to management. The scorecard does not therefore discard the conventional financial measurement but enriches it by employing other relevant perspectives of a company besides financial perspective.

In addition to the balanced scorecards, there are other similar propositions prompting management to complement their management measurement system with non-financial performance measures such as Total Quality Management.

2.5 Summary

As discussed above, the emergence of intangible economy does not only mean enormous opportunities but also serious challenges in different dimensions that we must confront. The very same reasons that explain the vast potential of intangible assets are also the main

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[88] ibid

[89] Kaplan, R.S. and Norton, D.P. (1996).

reasons causing difficulties for the applicability of conventional measurement and valuation approach. Non-scarcity or non-subtractive nature of intangibles, for instance, means not only vast potential but also poor applicability of traditional economics of decreasing returns. This is why the classical progressive depreciation rules can seldom be applied to intangibles. They are too unpredictable. The inherently vast potential means also inherently high risk associated with intangibles. Non-constraints of physical form do not mean solely that they can easily be diffused through various networks but also difficult to identify.

Despite many efforts and endeavours made in order to overcome the barriers, a conclusive and prescriptive solution is still waiting to be found.

What seems most imminent in current situation is the need of change in our way of thinking. When we continue to rely on accustomed or familiar ways of thinking and interpretation, we become blind and cannot recognise certain changes that occur in our environment.

As Marcel Proust once said

" the real voyage of discovery consists not in seeking new lands, but in seeing with new eyes".

There already has been made many significant advances that insinuate changes in our way of seeing and thinking. Increasing use of non-financial indicators and measurement that helps current accounting and management performance measurement systems to capture relevant intangibles is a prominent sign of change.

3 DATA SAMPLING AND RESEARCH METHOD

This study is qualitative in nature. There are various ways of obtaining knowledge of different phenomena. In this chapter the central procedures that have been employed for data sampling will be described and an analysis of the relevant data will be presented.

3.1 Description of data sampling procedure

The primary source of the necessary data for the current study consists of twelve semi-structured interviews that had been conducted between January and March of 2001.

The purpose of these interviews was to acquire detailed knowledge about the financial analysts´ perception of intangibles. As explained above, the concept of perception in this study will be studied from two different dimensions. On the one hand, the perception of intangibles as a concept and, on the other hand, the perception of the importance of intangibles from the analysts´ perspective and how they value them.

Based on the analysis of the answers from the interviews, this study aims to draw inferences concerning the financial analysts´ perception on intangibles.

The specific form of interview chosen for this study was motivated by several important factors.

Knowledge can be acquired in several ways. Subsequently, there are various procedures or courses of action through which empirical information about human beliefs and behaviour can be obtained. The interview is frequently employed in qualitative research such as the current one. The main advantage of the interview is that as a philological interaction, it allows viewing people as thinking and acting creatures. By relying on this interaction, the investigator can attain knowledge about such human-related issues that other alternative methods may have difficulties in revealing.

Another main benefit of the interview is its flexibility, which allows both deep and versatile information to be obtained. This aspect is essential to this study because the phenomenon in question is relatively new.

Because of its flexibility, the interview offers investigators opportunities to encourage respondents to elaborate their thoughts and ideas further. It allows both respondent and investigator to, for instance, explain and specify different concepts or ideas that appear vague or ambiguous. Hence, it is deemed more productive to employ the interview survey in order to obtain deep insight into the respondents´ perceptions and beliefs.

Participants in the interview survey consist of 12 financial analysts from seven different financial intermediaries in Finland.

Five of the respondents were buy-side analysts and the remaining seven respondents were sell-side analysts. Two of the five buy-side analysts worked at two asset management companies, and three of the respondents were employed by two insurance companies. All sell-side analysts were employed by three investment banks that provide brokerage services.

The selection of respondents was arbitrarily carried out on the basis of a list of investment banks and insurance companies available on the Helsinki Stock Exchange's home page.[90]

The selection was also partially premeditated. It has been acknowledged in previous studies that industrial specific factors may have an influence on the perception of the relevance of intangibles. Eccles and Mavrinac, for instance, provide empirical evidence that the analysts´ perception may vary significantly with such variables as industrial growth rates and industry age.[91]

And in order to take this possibility of potential similarities and dissimilarities into account, the respondents were selected in such a way that they represent expertise in four different industry sectors, including IT and telecommunication-, biotechnology and pharmaceutics-, metal and paper-, and finally food- and trade industry. Each of them represents different industry age and growth age.

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90 www.hex.fi

91 Eccles, R. and Mavrinac, S. (1995).

Each respondent's working experience varied from 2 years to over ten years. Eleven of the respondents had acquired academic degrees in economic field and one of them had received degree in technology as well.

The respondents were first approached through telephone call where general subject of the interview was explained. To ensure openness and full engagement in their responses during interviews, respondents were assured of full confidentiality and anonymity. Therefore the names of the respondents and their employers will not be revealed.

For the interview purpose, a general interview guide was planned.[92] The interview guide was divided into two parts. The first half of the interview guide entailed questions related to how analysts comprehend intangibles as a concept in an attempt to ascertain what kind of dissimilar or similar features among the respondents are associated with the concept. And the remaining half was related to questions concerning whether and to which intangibles analysts ascribe value and how analysts assess their value.

The interviews were carried out in respondents´ work places. The length of each interview varied from 30 minutes to 55 minutes. Each interview was recorded and transcribed in entirety.

3.2 Description of analysis method

The data collected from the interview survey was analysed based on qualitative content analysis. Holsti defines content analysis as any technique for making inferences by objectively and systematically identifying specified characteristics of message.[93]

There are two different types of content analysis, namely quantitative and qualitative. Quantitative content analysis focuses mainly on frequency of occurrence of certain content characteristics. Qualitative content analysis, such as performed in this study, focuses on presence/absence of particular content rather than on relative frequencies.

The qualitative content analysis in current study was chosen because it allows using non-quantifiable frequencies and making inferences in such a way in which the different parts of a text are interrelated. As Kracauer asserts, it is this interrelationship which often contributes largely and sometimes definitively to determine the direction of the overall text. It studies a certain content as a reflection of deeper phenomena instead of content as such.[94] And it is also the context that constitutes a crucial source of knowledge for this study.

According to Bryder, data can be analysed by employing various analytical units.[95] The material from the interview survey was analysed by classifying the material into context- , recording and the measurement unit.

The context unit is according to Holsti, the largest body of content that may be searched to characterise a recording unit. Context unit is necessary in order to make register units

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92 See appendix.
93 Holsti, Ole. R. (1969).
94 Kracauer, S. (1952).
95 Bryder, T. (1985).

comparable because a reference to a certain object can appear to be irrelevant within the boundaries of a recording unit if it is disconnected from a broader context. In the present analysis, the twelve different interviews constitute the context unit.

Holsti defines the recording unit as the specific segment of content that is characterised by placing it in a given category. The types of recording units can vary. It can include a specific word, sentence or theme. In current analysis, theme constitutes the recording unit. And different types of answers from the respondents to interview questions constitute the theme in this study. Hence, focus is not placed on some specific word but rather on meaning in different sentences. The recording units in current study were categorised into 4 categories depending on the subject of a question.

The relevant categories in this study consist of following categories:

a) The definition of intangibles
b) Relevant intangibles
c) Valuation of relevant intangibles and necessary information sources
d) Possible similarities and dissimilarities between industries in above mentioned categories

The content of three first mentioned categories consists of obtained answers to certain questions in the interview survey. The last category however were of such nature that recording units consist of the entire interview material.

The coding procedure was carried out by carefully reading through the transcription and by relying on the non-frequency technique, i.e. by examining presence/absence of particular content as the measurement unit. This technique made it possible to categorise different types of answers, i.e. recording units, into categories at hand.

According to Holsti, the findings from research can also be expressed in less strict manner by using such terms as more, less or increasing. Results from this study will also be described by relying on these less restrictive terms.

4 PRESENTATION AND INTERPRETATION OF THE RESULTS

Following chapter consist of two main parts. Firstly, issues concerning analysts´ perceptions on intangibles as a concept will be presented. Thereafter, the analysts´ perception on relevance of various types of intangibles will follow.

4.1 Analysts ´ perception of intangibles

The purpose of the questions related to this category was to ascertain how intangibles as concept is perceived or comprehended by both buy-side and sell-side analysts representing

various industries. In the light of non-consensus on definition of intangibles within literatures, possible variety in definitions among analysts was reasonable to anticipate.

Results from the interview survey indicate that the concept is perceived as somewhat abstract and difficult to concretise. In general the concept appears to be ambiguous and difficult to clearly restrict to certain content.

Even thought respondents ´ own definitions of intangibles vary to some degree certain common characteristics of the definition of intangibles could be identified.

Some of the analysts tend to associate the concept primarily with the employees. They were inclined to associate intangibles as a concept with latent or invisible reserve of brainpower or capacity of employees as a whole.

Others on the other hand tend to think in a more general and abstract term without associating the concept with any specific asset. They rather appear to think more in terms of company's aggregate invisible and uncertain potential to yield future profits. All of them associated intangibles with something abstract that require sacrifice in short term without any kinds of guarantees of future profits. However they seem to find investments in intangibles essential and regard intangibles as critical future success factors.

One of the respondents from the sell-side responded:

> ” The concept is equivalent to short-term cost and long-term gain. It is good thing to possess but who are willing to invest in it. Generally investors prefer the profits now because there are substantial degree of uncertainty involved since you don't know what company's intangibles consist of , how they are created and what their potential to generate profits in the future are”

Some of the respondents defined the concept intangibles by conceptually distinguishing intangibles from intangible asset, which are currently recognised by accounting practice. They distinguished intangibles from intangible assets in terms of cause and effect relationship where the former represents the cause and the latter being equivalent of the effect. As one of the four respondents who concur this view noted:

> ” Employees of the company constitute the intangibles…. Intangible assets are result of intangibles…. Intangible assets are for instance patents and other intellectual property rights…Intangibles are a part of these intangible assets”

The logic behind this reasoning appears to be that these respondents regard intangibles as an important input to intellectual property and thus as a invisible, non-physical part of more visible intellectual property. Their way of perceiving intangibles as a concept appears to be compatible to the definition introduced by Hendriksen and van Breda, namely traditional intangibles such as intellectual property rights on the one hand and deferred charges on the other. Those elements of intangibles that belong to the deferred charges are perceived as secondary in relation to intellectual property.

This can be regarded as more or less contradictory to currently available classification of intangibles introduced in various literatures where intellectual property constitute only a part of intangibles, not vice versa.

The issue of ownership especially in respect to human capital seems to explain why the respondents did not ascribe asset status to employees and management. They tend to perceive intangibles as only something that can be owned. Other resources without legal protection of ownership did not qualified as assets.

Overall, most of the respondents did not seem to associate those elements of intangibles beyond firm's organisational boundaries or direct control as intangibles.

On the basis of obtained responses from the interview survey presented above, one can draw following conclusions:

a) Like the situation in the literature, the concept intangibles seems to be something vague and ambiguous for analysts and there seems to be little consensus on what actually constitutes intangibles. This can partially be explained by the current circumstances where any precise and prescriptive definition of intangibles is not yet to be found and partially by the fact that the respondents do follow conventional accounting and valuation approach rather strictly. However since current accounting information provide only a part of truth but not the entire truth, there seems to be a gap between contribution of various types of intangibles to underlying process of value creation and the actualised visual value. This may explain why many of the respondents associated high uncertainty in intangibles and why crucial interaction within a company as well as outside a company did not qualify as intangibles. On the other hand the general impression of respondents was that they did not seem to be interested in other crucial parts of intangibles except intellectual property in any detail despite many advocacy of the emphasised importance of intangibles as a consequence of the fundamental transition.

b) Definitions of intangibles by the respondents imply that analysts define intangibles in two different ways, extensively or restrictively. In broad sense, the definition of intangibles by the respondents include abstract nature due to invisibility and uncertainty in ability of generating future profits and also exclusion of network of internal and external interaction such as customer capital. In other words, intangibles are regarded as a entity of abstract nature within company's formal boundaries. According to the more restrictive view of intangibles by some respondents, intangibles correspond the collective knowledge of employees, among which the management constitutes the most significant repository of knowledge. Furthermore intangibles were in general defined in relation to intellectual property rights where intangibles are regarded as a part of legally protected or traditional intangible assets. Also this narrow definition of intangibles tend to disregard the economic benefits that could be generated by interaction between the firm and its external environment.

c) Despite the different views on what the concept intangibles entails, knowledge and different forms of application of knowledge such as innovation regarded as important source of company's value even though how they contribute to value did not seem to be well established.

4.2 Relevant intangibles and valuation of intangibles

The purpose of various questions related to the category in question was to find out which intangibles exert crucial influence on respondents in their assessment of company's future

potential and to what extent the respondents ascribe value to this intangibles in valuation. The intention was also to ascertain how respondents in practice proceed in valuation of company's intangibles.

The respondents were asked to mention such factors that they regard as the crucial factors affecting their assessment. The question was specified by the investigator by first asking the respondents to mention such firm- internal factors that trigger revision of their assessment where after respondents were asked to disclose such external factors that have impact on company's share price.

The obtained results imply that although analysts in general acknowledge and ascribe some importance to intangibles in creating and maintaining company's future potential, types of intangibles and the significance ascribed to different elements of intangibles vary across different industries mainly dependent upon industry age and R&D intensity.

In following results from each industry will be presented separately although industries similar in industry age and growth potential will be examined jointly.

4.2.1 Metal- and paper industry.

One of the fundamental characteristics of metal- and paper industry is its maturity and limited and slow growth. The industry is also characterised by its main emphasis on physical production capacity and its correlation with market conditions.

Three of the respondents, two from sell-side and one from buy side, monitored mainly publicly traded companies in metal- and paper industry.

The intangibles that these respondents consider relevant in their assessment of company's value were know-how, innovation, product development , employee, management, organisational structure and customer relationship.

There were however divergent views on significance of different intangibles among these respondents.

Two of the respondents, one from buy-side and another from sell- side, attached little importance to innovation in traditional sense, i.e. in terms R&D. Innovation in terms of R&D seem to have rather marginal relevance to them because within this industry, the main emphasis lies upon physical production capacity or machinery. Also the degree of maturity and the homogeneity of products may provide explanations for relatively insignificant importance associated by these respondents to innovation in terms of R&D.

This interpretation of their perception is supported by statement of two of the respondents from both buy-and sell-side. One of them warranted the little significance of innovation in terms of R&D by stating:

> " R&D has little value since the market is mature…It isn´t company's main task in this industry…..It isn't as important and crucial as in for instance pharmaceutical industry."

Only one of the three respondents acknowledged that importance innovation in terms of R&D has been increasing, mainly due to intensified competition and globalisation.

The two respondents who did not ascribe much value to innovation in terms of R&D seemed to comprehend innovation in two separate ways, namely in terms of R&D and innovativeness equivalent to flexibility and dynamic ability of company in adapting and responding to external changes. According to these respondents the innovativeness in terms of flexibility and dynamic ability means for instance finding new business solutions or doing things differently than others by finding a way of offering same product with a new product mix.

Unlike R&D, the respondents considered innovativeness in terms of sufficient flexibility and company's dynamic ability to cope with external changes as extremely essential. Therefore they revealed that they pay considerable attention to how and how rapidly the company has been able to cope with different changes and crisis and whether there is any flexibility at all

All three respondents regarded the management of a company as company's most important sensor, which helps a company to identify external changes which in accordance with those changes provide appropriate solutions to adapt. A company was believed to operating on a solid foundation if its management has deep knowledge of its environment. One of the respondents from sell-side stated:

> ” There are some companies that have clear picture of the situation which implies that they are aware of what is happening around them, whereas others don´t…”

Strategy, which is regarded by all three respondents as another extremely significant factors, is perceived by respondents as one of the management´s main tools for optimising and co-ordinating value creation process in order to success and maintain its competitiveness. Innovativeness of a management was believed to be closely linked to how the management succeeds in finding the right way of implementing and realising the strategic goal in a constantly changing and highly competitive environment.

Despite the advocacy in many literatures about importance of human resource in current business environment, two of respondents appear to ascribe only little value to employees other than the management and do not invest much time on analysing value of human resource. They believed that closely examining the employees and employee-related issues do not yield any additional value. This may be explained by the heavy reliance on physical production input within this industry. As one of the respondents from buy-side noted:

> ” The role of employees is significantly larger in IT- industry. ”

Only one of the three respondents from sell-side attached value to employees ´ knowledge and competence mainly due to the technological and economic advances and more globalised economy. When the flow of physical and non-physical artefacts in such a setting is highly uninterrupted and it is important than ever before, it was understandable that the respondent emphasised the importance of employee's knowledge and skill in order to avoid any unwanted interruptions. Otherwise the company will not remain competitive. The respondent stated:

> ” …The employees must be up to date so that the flow of material remains undisturbed.”

All three respondents ascribed significant value to the management as a part of the human capital. They regard management as the most important part of human capital in determination of the future of a company. Management’s dynamic ability, which enables innovation and strategic accomplishments, was regarded as the most crucial by all respondents.

It appears that in the respondents ´ view the two categories of the intellectual capital presented by Edvinsson and Malone coalesce in management. The management is the main human capital that facilitates strategic renewal and innovation and at the same time the management constitute the most significant part of structural capital that enables company to integrate, transfer and exploit company’s resources efficiently in order to gain competitive advantage. As one respondent from sell-side noted:

> ” Organisational structure is important but it has to do with the management…The fact that a company has considerable resource of brainpower is positive, but to be able to exploit them in a right way is of greater importance and it’s mainly management’s task to see to it, which isn’t always an easy task.”

All three respondents regarded the different types of supportive infrastructure employed within company which enable company to maintain efficiency as one of the most important. This may be so mainly because there is provisional abundance of capacity at regular intervals due to changes in market conditions.
As one of the respondents from sell-side replied:

> ” Normally there is always over-capacity in this industry. It is therefore crucial that the company can manage that ….Every organisation should strive to exploit its capacity to the maximum to remain competitive. Efficiency is therefore very important.”

The structural capital that allows efficient exploitation of both physical assets and intangibles encompasses in respondents ´ view also the efficient way of responding to external changes. Therefore this kind of promptness was believed to be important by two sell-side respondents. He noted:

> ” If company is incurring loss, it is important that one can act rapidly and do not remain stagnant”

Two sell-side respondents, especially in paper industry regarded relationship with customers and company’s ability to meet its main customers´ demand as very important. One of these respondents noted:

> ” In paper industry, the main customers consist of few large publishers to whom the company must ensure a steady flow of papers. As a consequence the customer relationship becomes more prominent….The company must understand the needs of its customers and meet those needs.”

The main findings within the metal and paper industry are illustrated in following table:

HUMAN CAPITAL	*ORGANISATIONAL CAPITAL*	*CUSTOMER CAPITAL*
- Competence and innovativeness of management	- Innovativeness in terms of dynamic ability and flexibility - Strategy and implementation of strategy - Realisation of strategic goal - Management - Different types of supportive infrastructure	- Customer relations

Tabel 1. Metal and paper industry

4.2.2 Food- and trade industry

Both food- and trade industry in Finland is characterised by intensified competition due to entrance of new foreign competitors. Both industries show slow but steady growth which are largely dependent upon consumer´ s demand.

Three of the respondents of which two belong to sell-side, monitored primarily publicly traded companies within food- and trade industries.

The main elements of intangibles that these respondents regard as crucial in determination of company's future value were quite similar to those regarded by the respondents within metal- and paper industry.

The respondents mentioned that in their assessment of a company they take such factors as; employees´ know-how, innovation, organisational learning, efficient production- technology, product development, trademark, management, customer relationships into account.

As within metal- and paper industries, different elements of structural capital which enables the efficient exploitation of intangible resources were viewed as important. This seems to be mainly due to the degree of maturity within food- and trade industries where the growth potential is rather limited. Thus advanced production technology which aims to enhance efficiency and maximise extraction of value from company's resources is regarded as important by all.

Innovativeness of a company appeared to embrace same signification as in the case of respondents within metal- and paper industries. Thus innovation in terms of company's ability to differentiate from its competitors by finding solutions from company's resources was regarded as significant. As one of the respondents from sell-side remarked:

> " Innovation is important…. How a company offers its products in order to attract customers´ interest."

Unlike respondents who monitored metal- and paper industry, these respondents tend to attach value to innovation in terms of product development to a large extent as well. All of them perceived product development as a significant factor that increases company's value. The importance attached to product-development was believed to have significant influence on finding adequate solution to attract customers.

Even the employees besides the management gain greater recognition as important value-creation factor by the respondents in question than by the respondents who specialise in metal- and paper industry. Especially within the trade industry, where role of customer service and employees´ interaction with customers has an important role and influence in satisfying customers´ needs and demands. This may also explain the perceived significance of employee's know-how as well as company's ability to attract employees and ability of its management in motivating employees. One of the respondents explicitly admitted that she diligently follow company's recruiting policy.

Alike respondents within metal- and forestry industries, the respondents regard the management as one of the most crucial intangibles that influence on their evaluation of company´s future performance. All three respondents stated that the management and its capability are essential. Management was also regarded as the most important part of the human capital responsible for the strategic renewal and innovation. What the management has previously accomplished influence largely on the assessment of reliability and competence of the management. As one of the respondents from sell-side stated:

> ” The strategy of a company and realisation of that strategy and the competence of management are very important… I focus on whether the key persons are capable of realise the strategy on the basis of their track-record, that it is not just a slogan. ”

Customer loyalty within trade industry was ascribed significant value by all three respondents. The respondents tend to pay considerable attention to what kind of concrete measures a company is taking in order to maintain and increase loyalty of existing customers and company's awareness of its customers and their preferences. Customer loyalty was regarded by the respondents as an useful mean of gaining control over its customers and as a significant factor that contribute to company's value.

To achieve customer loyalty, respondents deemed it inevitable that company acquires knowledge of its current and potential customers in order to improve its readiness to sense how, when and what customer demands. Employee's role in creating customer capital was emphasised due to their closer interaction with company's customers.

An increase in customer loyalty was associated with positive impact on company's reputation and brand by the respondents. Another notable advantage of enhanced customer loyalty was believed to be its impact on marketing costs. As one of the sell-side respondents remarked:

> ” I regard customer loyalty as company's control over its customers that enhances company's competitiveness.... And as company's possibility to optimise its marketing and its ability to know what, when and how customers want”

Here the innovativeness of a company appears to play an important role in increasing customer loyalty. Since other competitors also employ various methods in an effort to attract and maintain more customers and increase customer loyalty, the respondents attached sig-

nificant value to company's different innovative solutions and approaches employed in order to identify customers needs and fulfil their needs in a different way than the others.

The respondents within food- and trade industries also tend to regard management as the most significant part of an entire organisation. Also in their view, human capital and structural capital coalesce in management.

The findings within this industry is illustrated in following:

HUMAN CAPITAL	*ORGANISATIONAL CAPITAL*	*CUSTOMER CAPITAL*
- Competence and innovativeness of management - Employees´know-how	- Innovativeness in terms of dynamic ability - Strategy and implementation of strategy - Realisation of strategic goal - Management - Different types of supportive infrastructure - Product development - Production technology	- Customer relationship and customer loyalty - Brand

Tabel 2. Food and trade industry

4.2.3 Biotech- and pharmaceutical industry

One of the most distinguishable features in biotech- and pharmaceutical industry is the vast investment directed into R&D activities. The emphasis within this industry lies upon the potentials of various R&D projects. Most of companies within biotech industry are incurring losses due to the long period of time necessary in product development. However once a company has commercialised its product, the company can achieve relatively stable market position.

Two of the participants in the interview survey, equally one from sell- and buy-side, monitored publicly traded companies in biotech- and pharmaceutical industry.

The variety of intangibles regarded as crucial success factors was somewhat narrower in comparison to other industries. The main importance within biotech- and pharmaceutical industry was placed upon R&D and the competence of key employees involved in R&D activities. Other intangibles regarded as relevant in valuation of companies within biotech- and pharmaceutical industry were intellectual property rights, co-operation network, favourable contracts with partners and also customer capital.

Both respondents emphasised the profound importance of R&D activity and in connection to R&D, the competence of key persons in charge of R&D projects. One of the respon-

dents disclosed that previous achievements of key persons in charge of a project and their reputation are important factors from which potentials of the project can be assessed. Know-how and innovation of a company were mainly associated with the key persons in charge of R&D projects. Therefore they seem to place considerable significance on ascertaining background information about key persons in charge of R&D project such as what kind of achievements they have accomplished and what kind of reputation they have. This all reveals how credible or competitive the project may be. Company's image or reputation was believed to be largely dependent upon these key persons and their individual competence and recognition.

The importance attributable to R&D within biotech- and pharmaceutical industry may also explain the considerable importance ascribed to intellectual property rights, mainly patents.

Also within this industry, the management besides key persons of R&D projects tends to play significant role. In addition to the general competence of leadership, one of the respondents from sell-side remarked the essentiality of management's ability of correctly recognising the potentials of its main resources and establishing relationship in company's external environment in order to extract maximal values from company's resources. As she noted:

> " It is essential that they have good knowledge of what is the realistic potential of their projects as well as the ability of identifying those companies with whom the company can maximise the value of its projects. "

Thus the ability to interact with its external environment mainly in forms of co-operation and favourable contracts with partners and customers were regarded as crucial especially within in biotech industry which mainly focuses on invention of new medicines without distributing and marketing them to consumers.

Unlike food-and trade industry, brand appears to be of less significance within biotech industry. Neither did the respondents regard such infrastructure, which enables improvements in efficiency as significant. One of them stated:

> " Different kinds of efficiency are little tricky, since the major part of costs within the industry consists of R&D expenses."

The finding within biotech and pharmaceutical industry is summarized in following table.

HUMAN CAPITAL	***ORGANISATIONAL CAPITAL***	***CUSTOMER CAPITAL***
- Competence of the core employees in R&D - Management	- R&D activity - Intellectual property rights, such as patents - Innovativeness in terms of dynamic ability	- Customer relationship - Cooperation and partnership - Company´s reputation

Tabel 3. Biotech and pharmaceutical industry

4.2.4 IT- and telecommunication industry

Both industries are two of the major driving forces behind the emergence of intangible economy. Most of the currently listed companies within IT industry find themselves at relatively early stage of building up their organisation. The major part of costs incurred within this industry is induced by R&D activities and many of young companies within IT industry are currently incurring loss. The competition for market-share within telecommunication is intense.

Four respondents, equally two from both sides, monitored mainly publicly traded companies within IT- and telecommunication industry.

Factors that these respondents consider relevant in their assessment of company's value were know-how, innovation, employees, management, corporate culture or spirit, R&D, customer relationship, brand, image or reputation, intellectual property.

Overall employee's contribution to value creation and competitiveness of a company was perceived by the respondents as clearly more prominent than within other sectors. All of four respondents seem to agree upon the considerable importance associated with employees and their know-how. Accordingly three of the respondents found extensive investments in employees inevitable within high-tech industry. It became evident that these respondents attach considerable value to employee and regard them as the critical success factor. As one of buy-side respondents mentioned:

> ”Employees are undoubtedly significant... Even though often employees are primarily associated with the management, a company cannot achieve anything without its competent workers regardless of a competent management.”

All four respondents regarded management and its quality as one of most important element of human capital. Dynamic ability and management credibility is regarded as most significant qualitative characteristics of the management. Also here the dynamic ability refers to management's capability of identifying and seizing opportunities. As one of sell-side respondents noted:

> ”Management is extremely crucial.... It is important to know if they have knowledge and capability of creating value to its shareholders....”

Also here the credibility of the management appears to be associated with management's capability of setting realistic goals and achieving those goals and how they have previously performed. As one of the sell-side respondents responded:

> ” The credibility of the management is crucial, especially within this industry...also how realistic their expectations are... One must take track-records into account.”

One of the respondents also mentioned the significance of composition of company's management. He remarked:

> ”The management is extremely important. But it is equally important that everything does not depend on one person.”

Different infrastructure aimed to enhance efficiency was found important but due to the existing growth potential within the industry it was not regarded as crucial as within more mature industry where the growth potential is restricted.

As the competition on competent employees increases within IT industry, the organisational culture as a part of structural capital was believed to play an important role in retaining employees and improving company's potential to value creation. Intellectual property rights as one of the visible embodiment of human capital and R&D were considered important by all four respondents..

Brand and corporate image which signal advanced know-how and product quality to customers gained unanimous recognition as important assets attributing to a company's value.

All respondents ascribed value to customer capital as well as co-operative relationship such as joint ventures and strategic alliances. Concerning customer capital, the respondents pay especial attention to the composition of company's customers. As one of buy-side respondents responded:

> " Customer capital is important, especially large customers with established names."

The findings within this industry can be summarized as following:

HUMAN CAPITAL	***ORGANISATIONAL CAPITAL***	***CUSTOMER CAPITAL***
- Employees and their know-how - Management and its competence	- R&D activity - Intellectual property rights, such as patents - Innovativeness in terms of dynamic ability - Implementation of strategy - Realization of strategic goal - Organisation culture	- Customer relationship - Cooperation and partnership - Brand and corporate image

Tabel 4. IT and telecommunication industry

4.2.5 Summary

On the basis of findings from the interview survey regarding the intangibles, following inferences can be made:

a) Results from the questions related to perceived importance of intangibles imply that although the respondents in general acknowledged the importance of intangibles in company's value creation, the types of intangibles and the degree of importance attached to various types of intangibles tend to vary among respondents, depending on which industry they monitor. Overall the respondents who primarily monitor compa-

nies active in more mature industries do not seem to attach any great significance to what types and amount of intangibles a company possesses. They tend to show also little interest in what kinds of measures a company takes and how a company employ and convert different intangibles within the structural boundaries in order to extract value from different intangibles. They all seem to deem it almost indifferent how the company generates and exploits its resources. All that matters the final result observable in financial measures They tend to ascribe greater importance to numbers and the effect, not so much to intangibles per se or cause. Thus it is the harvest that matter more than the seeds. They are result-oriented and are therefore less interested in underlying process of value creation beneath the surface. This can be explained by the fact that within these industries, significant portion of value is attributable to physical assets. Within high-tech industries, the respondents seem to place much more importance on value creation process and role of intangibles beyond financial figures even though intangibles were not any more visible than within the mature industry. Same accounting rules and regulations apply there as well. But despite the difficulties of gaining information of true value extraction process, they seem to show greater diligence in establishing cause and effect relationship in indirect ways, mainly by relying on different kinds of non-financial indicators.

b) Despite the divergent views on importance of different kinds of intangibles among the respondents, the management was perceived as one of the most relevant and important intangibles regardless of the industry. The management was perceived as the major part of employees or/and as the most significant part of structural capital. Management's ability to sense making or interpreting its internal and external environment is regarded as essential characteristics of a management.

c) The corporate strategy serves as the crucial instrument for the management as a linkage between different phases of company's value creation chain. The strategy was viewed as a conclusive evidence of innovation that empowers and supports an organisation to integrate and exploit company's assets in order to meet market's demand. In addition to management, different parts of company's infrastructure that improves efficiency s, such as cost efficiencies, were appreciated by respondents in more traditional sectors, such as in metal- and paper industry, food- and trade industry. Within knowledge intensive sectors, other kinds of structure capital such as R&D and intellectual property rights were regarded as more crucial.

d) The majority of the respondents regarded customer relationship and the value attributed to company's quality image or reputation as significant. Within food- and trade industry and high-tech industry, establishment of external collaboration network was regarded also as essential factor that determines company's future success potential.

4.3 Valuation of intangibles

The most common valuation approach that the respondents employ was discounted cash flow or DCF-valuation approach together with multiple valuation approach often simultaneously. These valuation approaches mainly based on accounting information in an effort to find miss-priced securities on the basis of security's intrinsic value.

By employing various multiples, i.e. financial ratios, the respondents compared company with its competitors in order to assess company's relative strength and weakness.

The logic behind DCF-valuation model is that the entire value of a company is equivalent to the present value of all future free cash flows generated by entire assets in company's control. Thus in DCF-valuation model value of an asset is the present value of the future cash flows yield by the asset.[96]

To be able to employ DCF-valuation model it is necessary to estimate the life of asset, the cash flows attributable to the asset during its life and the proper discount rate for these cash flows when using DCF-valuation model.

In the light of the distinguishable features associated with intangibles, it is rather easy to understand the difficulties in estimating value of intangibles. As mentioned previously, most of intangibles do not follow the classical progressive depreciation rules and most of intangibles interact with each other which makes it difficult to identity their separate contribution to future cash flows. Furthermore the lack of active markets for most of intangibles cause difficulties.

This may provide some explanations for why all respondents ´ valuation of intangible was mainly qualitative of nature based on subjective assessment by almost entirely relying upon intuitions and knowledge acquired through experience. None of the respondents valued separate intangible and their contribution to value in quantitative terms.

Within more mature industries such as metal-, forestry-, food- and trade industries, the respondents did not deem it necessary to perform separate valuation of intangibles. This was based upon the belief that the aggregate impact of company's intangibles must be reflected quite rapidly on the competitiveness of the company due to increasing competition. As one of the sell-side respondents in metal- and forestry industry stated:

> " I do not ascribe any monetary value to a certain intangible… It cannot be measured….No one has so far succeeded in presenting any clear and reliable way of measuring their value and nor is it necessary….The value of intangibles is reflected very quickly in company's business activity because if the state of the company is poor, it will be outperformed by its competitors and consequently its growth will decrease…In other words the value of intangibles become apparent rather quickly into financial numbers.."

As indicated above, within these industries in question intangibles as input does not appear to have any significant relevance to the respondents. It appears that it is rather the output that can be expressed in figures, which attracts considerably more attention. This may be partially because they are more result-oriented. On the other hand, the absence of generally accepted measurement and valuation approach as well as inadequacy of current accounting information in potentials of intangibles may also explain this. As a respondent from sell-side in food- and trade industry for instance noted:

> " We are extremely focused on numbers… You cannot quantify these assets….You don't know what kinds of assets exist within a company, how they are created and how much profit they can generate. You can only have a feeling of how important they are….Since a company has many means to achieve a goal, it is for me indifferent how they achieve that goal as long as they achieve it."

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[96] Brealy, R. A. and Myers, C. (1996). See also Copeland, T., Koller, T. and Murrin, J. (1996).

Another respondent from sell-side in metal- and forestry industry supports the interpretation. He stated:

> ” Of course there are various kinds of potential within a company but in fundamental sense, the most significant issue that matters to investors is how much earnings a company generates.”

Unlike the respondents within more mature industries, six of the respondents who specialised in knowledge-intensive industries relied on various non-financial indicators in an attempt to better understand cause and effect relationship between intangibles and their contribution to value creation.

Despite difficulties as an external observer to obtain information about company’s employees, they employ such qualitative indicators as employee revenue and sales per person. As one of the respondents from sell-side stated:

> ” Employees are very important ...In IT- sector we observe such indicators as employee turnover. A low employee turnover imply that productivity is high”

In connection to the employee-related issues, the respondents within IT- and telecommunication industry found company’s ability to attract and retain employees especially important. This is understandable because of the lately experienced increasing shortage of competent workforce within IT-sector and the emphasised significance of contribution of employee’s in value creation in this sector.

Different incentive-programs that companies offer to its employees were also an important indicator. As the buy-side respondent stated:

> ” Since competition on competent employees has intensified and since they are important above all within this industry, the company must have some way to attract and keep their employees, for instance with help of different option programs. Option program a company offers is therefore important.”

Although measuring value of various intellectual property rights separate from other assets in monetary terms is not possible, the existence or non-existence of legal protection seems to be an important aspect. As one of sell-side respondents in biotech- and pharmaceutical industry stated:

> ” I cannot determine the value of a certain patent per se…However at least one must ascertain whether the key innovations are legally protected. One usually approaches in similar manner when estimating value of intellectual property rights. ”

Regardless of the industry age and intensity of intangibles that vary between the industries, all respondents rely on non-financial indicators at least to some extent and the respondents employed such non-financial indicators mainly related to innovation, management’s track record and quality of strategy.

When evaluating the management and its competence all respondents pay significant to its credibility on the basis of past performance, so called track record. It was believed to be especially significant that a management has succeeded in delivering what they have promised and thus meeting market’s expectation.

Another aspect of the management to which large significance was placed upon was its innovativeness. When the respondents evaluate the innovativeness of the management, they pay mainly attention to management's ability to strategic renewal and adaptation. The quality of strategy tends to cohere with the credibility of the management. The respondents pay attention to the implementation and completion of strategy in the long run.

Answers from analysts imply that, despite the recent criticism in literatures against the usefulness of accounting information, accounting information constitute one of the main sources of information for analysts when performing security analysis. Almost all of the respondents regarded accounting information as an inevitable, fundamental framework of analysis. Only one of the respondents from sell-side who monitored mainly companies within IT-sector dismissed accounting information as irrelevant. Five other respondents who specialised in high-tech industry admitted the relatively limited usefulness of accounting information but did not discard accounting information as useless.

In general, the respondents who monitored companies within more mature industries that experience less volatility and intensity of intangibles find current accounting information as satisfactory. This appears to be so because mature industry do not experience much change and therefore some regularity or trends can be identified by examining how a company has historically performed.

On the other hand, heavy reliance on intangible and volatility due to high rate of change and inherently high uncertainty associated with intangibles may also explain why usefulness of accounting information was perceived as more limited within high-tech industry.

Notwithstanding, some of the respondents within the traditional sector showed desire for more detailed and specified information regarding management goal and strategy, competitive position of its operating units and management assessment of future development. Desire for more specified information about company's operating units or segments was believed to be useful because it may provide a refined way of identifying and analysing those critical opportunities and risks that company encounters.

Besides accounting information, the respondents made use of various sources of information. The most commonly employed sources of information by sell-side respondents were management, company's department of investor relations, interim reports, Internet, database and financial press. For five buy-side respondents, sell-side analysts ´ analysis constitute the most important source of company-specific information. In addition, they also rely on various source of information.

All respondents from sell-side appear to agree upon the fact that in order to establish a more comprehensive and accurate picture of a company's potential, one is compelled to rely on extensive range of information sources.

5 SUMMARY OF FINDINGS AND SUGGESTION FOR FUTURE RESEARCH

In this final chapter main findings from the interview survey will be summarised. In conclusion, a suggestion for future study will be made.

5.1 Summary

In the beginning of this paper, several implications of the rise of intangible economy were discussed. Despite the difficulties of measuring and valuing intangibles, the financial market is taking intangibles into account and ascribes significant value to intangibles. This however gave rise to some questions. If we infer that the intangibles matter than one can ask what actually matters and how much do they matter? These two questions also constituted the main issue in current study.

Findings from this study imply that;

- The concept intangibles was perceived by the respondents as something vague and there seems to be little consensus on what actually constitutes intangibles. This may partially be explained by the current circumstances where any precise and prescriptive definition of intangibles isn't yet to be found and partially by the fact that the respondents do follow conventional accounting and valuation approach rather strictly. Despite current advocacy of the emphasised importance of intangibles in the intangible economy the respondents did not seem to be interested in other crucial parts of intangibles except intellectual property in any detail.

- Although the respondents in general acknowledged the importance of intangibles in company's value creation, the types of intangibles and the degree of importance attached to various types of intangibles tend to vary among respondents, depending on which industry they monitor. Overall the respondents who primarily monitor companies active in more mature industries do not seem to attach any great significance to what types and amount of intangibles a company possesses. The respondents within more mature industry tend to ascribe greater importance to numbers and not so much to intangibles per se. Within high-tech industries however, the respondents seem to place much more importance on value creation process and role of intangibles beyond financial figures.

- The management was perceived as one of the most relevant and important intangibles regardless of the industry age or growth potential. Also the customer capital in forms of customer relationship and the value attributable to company's quality image or reputation were regarded as significant in general .

- All respondents´ valuations of intangible were mainly qualitative of nature based on subjective assessment by almost entirely relying upon intuitions and knowledge acquired through experience.

Intellectual Capital / Industry type	**Human capital**	**Organisational capital**	**Customer capital**
- *Metal and paper industry*	- Competence and innovativeness of management	- Innovativeness in terms of dynamic ability and flexibility - Strategy and implementation of strategy - Realisation of strategic goal - Management - Different types of supportive infrastructure	- Customer relations
- *Food and trade industry*	- Competence and innovativeness of management - Employees´ know-how	- Innovativeness in terms of dynamic ability - Strategy and implementation of strategy - Realisation of strategic goal - Management - Different types of supportive infrastructure - Product development - Production technology	- Customer relationship and customer loyalty - Brand
- *Biotech and pharmacy industry*	- Competence of the core employees in R&D - Management	- R&D activity - Intellectual property rights, such as patents - Innovativeness in terms of dynamic ability	- Customer relationship - Cooperation and partnership - Company´s reputation
- *IT and telecommunication industry*	- Employees and their know-how - Management and its competence	- R&D activity - Intellectual property rights, such as patents - Innovativeness in terms of dynamic ability - Implementation of strategy - Realization of strategic goal - Organisation culture	- Customer relationship - Cooperation and partnership - Brand and corporate image

Table 5. Variation in types of intangibles between different types of industry

- The respondents who specialised in knowledge-intensive industries relied on various non-financial indicators in an attempt to better understand intangibles and their contribution to value creation.

- Despite the recent criticisms in literatures against the usefulness of accounting information, accounting information constitute one of the most main sources of information for analysts´ security analysis.

In conclusion, the main findings of current study concerning the relevant intangibles within four relevant industry types will be illustrated in following table.

5.2 Suggestion for future research

One should bear in mind that no research design is ever perfect because all research is beset with limitations of various kinds. And current study does not constitute any exception.

Low and Siesfeld maintain that people's report on decision making process is not based on any actual introspection but on their own theories that seem plausible in the situation. They assert therefore:

" People may say that their actions are guided by a set of values and beliefs they can articulate, but often their self-reported preferences are belied by their actual decisions in the real world."[97]

This aspect may also be the main limitation in this study.

Even though the qualitative and quantitative methods are occasionally viewed as two competitive methodological approaches, they do not contradict each other. They rather complement each other. As Pool maintains:

"The relationship between theses two approach is a circular one. Each provides new insights on which the other can feed".[98]

Hence in the future, examining the actual relevance attached by financial analysts to intangibles in practice, where analysts´ reports are compared with inferences drawn in this study may provide further understanding in their actual preferences in relation to analysts ´ stated preferences.

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[97] Low, J. and Siesfeld, T. (1998).
[98] ool, I de S. (1951), p. 192.

References

Ackert, L.F. and Athanassakos, G. (1997): Prior Uncertainty, Analysts Bias, and Subsequent Abnormal Returns. The Journal of Financial Research, Vol. 20 No. 2

Ackert, L.F. and Church, B.K. (1996): What Affects Individuals ´ Decisions to Acquire Forecasted Information?. Contemporary Accounting research, Vol. 13 No. 2

Ahonen, G (2000): Generative and Commercially Exploitable Intangible Assets. In Ahonen et.al.: Classification of Intangibles. HEC School of Management, Paris. CR 712/2000, pp. 206-213.

Amir, E. and Lev, B. (1997):Value Relevance of Nonfinancial Information: The wireless communications industry. Journal of Accounting and Economics, 22

Arthur Andersen. (1992): The Valuation of Intangible Assets. Special Report No P254. The Economist Intelligence Unit, London

Arthur Andersen. (1998): Knowledge Measurement. Global Survey Findings Report, October, Arthur Andersen

Beaver, W.H. (1981): Financial Reporting: An accounting revolution. Prentice-Hall, Inc., Englewood Cliffs, New Jersey

Brealey, R.A. and Myers, C. (1996): Principles of Corporate Finance, 5th edition, Mcgraw Hill College

Bryder, T. (1985): Innehållsanalys som ide och metod. Publications of the research institute of the Åbo Akademi Foundation, Turku, Finland

Callahan, C.M., Lee, C.M.C. and Yohn, T.L. (1997): Accounting Information and Bid-Ask Spreads. Accounting Horizons, American accounting association, Vol. 11 No. 4

Canibano, L., Garcia-Ayuso, M. and Sanchez, M. (1999): The Value Relevance and Managerial Implications of Intangibles: A literature review. Background paper prepared for the OECD symposium held in Amsterdam

Chan, S.H., Martin, J.D. and Kensinger, J.W. (1990): Corporate Research and Development Expenditures and Share Value. Journal of Business Finance

Chaney, P., Devinney, T. and Winter, R. (1991): The Impact of New Product Introductions on the Market Value of Firms. Journal of Business Finance

Chauvin, K.W. and Hirschey, M. (1993): Advertising, R&D Expenditures and the Market Value of The Firm. Financial management, No. 4

Commision of the European Communities. (2000): EU Financial Reporting Strategy: The way forward. COM(2000) 359 Final, Brussels

Cohen, J.R., Krishnamoorthy, G. and Wright, A.M. (2000): Evidence on the Effect of Financial and Nonfinancial Trends on Analytical Review. Journal of Practice & Theory, Vol. 19, No 1

Copeland, T., Koller, T. and Murrin, J. (1996): Valuation- Measuring and managing the value of companies. 2nd edition, John Wiley & Sons

Corrigan, J. (1998): Performance Measurement: Knowing the dynamics. Australian CPA, Melbourne

De Bondt, W. and Thaler, R. (1990): Do Security Analysts Overreact?. American Economic Review, 80

D´Mello, R. and Ferris, S.P. (2000): The Information Effects of Analysts Activity at the Announcement of New Equity Issues. Financial Management, Spring

Dzeng, S. (1994): A Comparison of Analytical Procedure Expectation Models Using Both Aggregate and Disaggregate Data. Journal of Practice & Theory, Fall

Diamond, W.D. and Verrecchia, R.E. (1991): Disclosure, Liquidity and the Cost of Capital. Journal of Finance, 4

Eccles, R and Mavrinac, S. (1995): Improving the Corporate Disclosure Process. Sloan Management Review, Vol. 36, No. 4

Edvinsson, L and M.S. Malone. (1997): Intellectual Capital- The proven way to establish your company´s real value by measuring its hidden brainpower. Judy Piatkus, U.K.

Ely, K. and Waymire, G. (1999): Intangible Assets and Stock Prices in the Pre-SEC Era. Journal of Accounting Research, 37

Ernst & Young. (1999): Measures that matter. Executive summary

Eronen, A. (1999): Henkilöstöinformaatio ja yrityksen arvo. ETLA ,Taloustieto Oy, Helsinki

Eronen, A. (1999): Classification of Intangibles- Some comments. Discussion paper. ETLA, Helsinki

Francis, J. and Philbrick, D. (1994): Analysts ´ Decisions As Products of a Multi-Task Environment. Journal of Accounting Research

Goldfinger, C. (1997): Understanding and Measuring The Intangible Economy: Current status and suggestions for further research. CIRET-conference, August 1st, Helsinki

Gordon, L.A., Pound, J. and Porter, T. (1994): High Performance Workplaces: Implications for investment research and active investment strategies. Waban: The Gordon Group

Grinblatt, M. S. and Stephen, A. R. (1985): Market Power in a Securities Market with Endogenous Information. Quarterly Journal of Economics, 1143-1167

Gröjer, J.E. (1999): Intangibles and Accounting Classification; in search of a classification strategy. School of Business, Stockholm University

Gröjer, J.E. and Johanson, U. (2000): Accounting for Intangibles at the Accounting Court. Work in Progress, School of Business, Stockholm University

Hall, R. (1992): The Strategic Analysis of Intangible Resources. Strategic Management Journal, 13

Henriksen, E.S. and van Breda, M.F. (1992): Accounting Theory. Irwin

Hirst, D.E., Koonece, L.and Simko, P.J. (1995): Investor Reactions to Financial Analysts´ Research Reports. Journal of Accounting Research, 33

Holsti, O.R. (1969): Content Analysis for the Social Sciences and Humanities. Addison-Wesley Publishing Comapny, Masachusetts

Hopwood, A. (1974): Accounting and Human Behaviour. Prentice-Hall, Inc., New Jersey

Ittner, C.d. and Arcker, D.F. (1998): Are Nonfinancial Measures Leading Indicators of Financial Performance? An analysis of customer satisfaction. Journal of Accounting Research, 36

International Accounting Standards Committee. (1998): International Accounting Standard IAS 38; Intangible assets. London

Jense, M. and Mecling, W. (1976): Theory of the Firm: Managerial behaviour, agency costs and ownership structure. Journal of Financial Economics, 3

Johanson, U. (2000): Characteristics of Intangibles-Proposals generated from literature and experienced Swedish firms. School of Business, Stockholm University

Kaplan, R. and Norton, D. (1996): The Balanced Scorecard. Harvard Business School Press, Boston

Kothari, S.P., Laguesse, T. and Leone, A. (1998): Capitalization Versus Expensing: Evidence on the uncertainty of future earnings from current investments in PP&E Versus R&D. Working Paper. Simon Graduate School of Business, University of Rochester, Rochester, NY.

Kracauer, S. (1953): The Challenge of Qualitative Content Analysis. Public opinion quarterly, 16, Winter

Lagerberg, D. (1975): Contribution to the Theory and Method of Content Analysis. Fyris-Tryck AB, Uppsala

Lev, B. (2000): Intangibles: measurement, management and reporting. Stern School of Business, New York University

Lev, B.and Zarowin, P. (1999): The Boundaries of Financial Reporting and How to Extend Them. NYU working paper

Lev, B. and Sougiannis, T. (1996): The Capitalisation, Amortisation and Value-relevance of R&D. Journal of Accounting and Economics, 21.

Lewis, E.E. and Lippitt, J.W. (1999): Valuing Intellectual Assets. Journal of Legal Economics, Spring/Summer

Low, J. and Siesfeld, T. (1998): Measures that matter. Strategy & Leadership

Mavrinac, S. and Siesfeld, T. (1998): Measures that matter: An exploratory investigation of investors´information needs and value priorities. OECD 1998

Morgan, G. (1997): Images of Organization. Sage Publications, London

Petrash, G. and Bukowitz, W. (1997): Visualizing, Measuring and Managing Knowledge. Research Technology Management, July- August

Pool, I.de S. (1959):Trends in content analysis. Urbana: University of Illinois Press

Previts, G.J., Bricker, R.J., Robinson, T.R. and Young, S.J. (1994): A Content analysis of Sell-Side Financial Analyst Company Reports. Accounting Horizons, Vol. 8 No.2

Roos, J., Roos, G., Edvinsson, L. and Dragonetti, N.C. (1997): Intellectual Capital-Navigating in the new business landscape. Macmillan Pres Ltd., London

Schipper, K. (1991): Analysts´ Forecasts. Accounting Horizons

Skandia. (1994): Visualizing Intellectual Capital in Skandia. Supplement to Skandia´s 1994 annual report, Stockholm, Sweden

Sveiby, K.E. (1997): The New Organisational Wealth; Managing & measuring knowledge-based assets. Berret-Koehler Publishers, Inc., San Fransisco

Teece, D. J. (1998): Capturing Value from Knowledge Assets. California management review, Vol. 40. No. 3

Womack, K.L. (1996): Do Brokerage Analysts´ Recommendations Have Investment Value?. Journal of Finance, 1

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