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**The balanced scorecard
– A tool for managing knowledge?**

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1 BACKGROUND

Economical – *careful in the spending of money, time and in the use of goods; not wasteful. (Oxford English Dictionary, 1974)*

1.1 INTRODUCTION

The word Economical stems from the Greek word "oikonomia" that translates to manage or economise. The most common definition is managing scarce resources (Andersson, 1995). To manage their scarce resources is the main task for modern companies, but there seems like there is no standardised formula for how to do it. Companies try their best to utilise their resources to create value for shareholders, its personnel, and other interest groups in order to stay competitive in the battle of the market. This is no easy task, and therefore several ideas of how to do this in the best possible way have been tried. Today there are many business school academics and consulting firms trying to sell new solutions to the problem of how to utilise the company resources in the best possible way, and thereby many new management models have seen the light of day (Robertson, 1995). No one has tried to state that one model is applicable to all companies and all sets of conditions, but attempts have been made to adapt to the demands of the rapidly changing corporate environment.

Today's companies often find themselves unable to influence the environment surrounding them. Instead, the environment forces a rapid change within companies if they want to stay competitive. The last decades, national as well as international competition has stiffened and the pace of technical innovation has increased. In order for an enterprise to survive these tough conditions, great demands are placed upon the corporate strategies. In the short run, a company's competitiveness derives from the price/performance attributes of current products. But many companies today are converging on similar and formidable standards for product cost and quality - minimum hurdles for continued competition, but less and less important as sources of differential advantage. In the long run,

competitiveness derives from an ability to build, at lower cost and more speedily than competitors, the core competencies that spawn unanticipated products. The real sources of advantage are to be found in management's ability to consolidate corporate-wide technologies and production skills into competencies that empower individual businesses to adapt quickly to changing opportunities (Hamel & Prahalad, 1990). To be able to do this, it is important for companies to utilise all of their resources. To consider only the financial resources will be a terrible waste, and might benefit competitors.

Another important task for every company is to follow-up completed processes. By thoroughly examining the outcome of business processes, management encourages the desired degree of responsibility, and at the same time obtains an indication whether specific goals have been reached or not. Traditionally, financial control has been based on earning capacity such as ROCE, or return on capital employed. Managers focusing on a single financial measure often tend to manage for the short term, which may lead to a failure to invest in assets essential to long-term success. Investing in employee motivation and skills and ensuring customer satisfaction often only pay off over the long term (Samuelsson, 1996). By focusing on the long-term development, it is evident that a company must be interested in developing all of its scarce resources and to use all of them to create future progress. A too narrow focus will benefit competitors wanting to pass them by.

These conditions thereby require new forms of managerial control. In the past, extensive formal control systems were developed in many, mostly larger, corporations (Samuelsson, 1996). Even though the idea was to decentralise decision-making, these systems often led to widespread bureaucracy and strict centralisation because of the detailed regulations from the top management. Individual competence and qualifications were poorly utilised and the opportunity for employees to act independently was insignificant. Nowadays, these managerial shortcomings are scrutinised.

The new systems are concentrated on individual development and progress, they are more customer-focused, and decisions are made as close to operations as possible (Samuelsson, 1996). The purpose of these new management control methods is to increase efficiency within organisations, to include strategic goals, and to provide a better opportunity to evaluate and guide a business toward desirable results. These models provide the opportunity for managers to see the whole nature of their company, and the dashboard often serves as a metaphor for this (Anthony & Govindarajan, 1998).

In this thesis, we are going to focus on two concepts that we believe have, and further will, add insights into how to manage a company today: the Balanced Scorecard and knowledge management. The reason for focusing on these two concepts is the following. The Balanced Scorecard provides a new way to manage more of a company's resources than just the financial. It was one of the first management control tools used with the aim to change management awareness into focusing on both strategy and long-term success, and short-term financial earnings. The changed focus is achieved by a widened scope for essential management activities and processes for future competitiveness. The reason for choosing the knowledge management concept is that it also aims at increasing the effectiveness of a company's internal processes. Further, it provides insight into how to manage a company's intangible assets and its personnel, which are important parts when developing a company's competitive strengths. We are not stating that these two concepts could serve as the saviours for all companies in all kinds of businesses, but we will focus on them since we believe that they contribute many sound ideas for managing a company in a competitive way.

2 RESEARCH PROBLEM, PURPOSE & LIMITATIONS

2.1 RESEARCH PROBLEM

The fundamental problem with knowledge management seems to be that many managers avoid the concept because they think it is too vague and difficult to understand (Dodge, 1999). When trying to make an inventory of the disciplines that are involved with knowledge management, you find an almost never ending list of branches of learning, for example artificial intelligence, information technology, psychology, philosophy, pedagogy, organisational theory, neurobiology, human resources, management accounting and computer science. All of these disciplines, and others as well, are likely to have significant roles since knowledge management is much more likely to be understood as an interdisciplinary field than mono-disciplinary. However, we believe that it is important not to dismiss this concept just because it is hard to grasp at first hand. Knowledge management ideas could help companies utilise their intangible assets and thereby develop and sustain competitive advantage. Knowledge management ideas have to be a part when developing the company strategy (Zack, 1999). An organisation's ability to function and prosper depends, in large part, on the knowledge and skills of its people, and the knowledge base that it collectively develops and deploys. A question that many companies struggle with is how to turn the strategy into reality: how to make optimum use of the knowledge that the organisation possesses (KPMG, 1998).

The Balanced Scorecard tool is an attempt to deal with these types of issues. It was originally designed as a tool for measuring performance that developed into a new strategic management control system, which helped implement the company's strategy (Kaplan & Norton, 1996c). The aim of the Balanced Scorecard is basically to translate the strategy into action. It supplements traditional financial measures with criteria that measure performance from three additional perspectives - those of customers, internal business processes, and learning and growth. It is also used as a

system for communication, information and learning (Kaplan & Norton, 1996a). It therefore enables companies to track financial results while simultaneously monitoring progress in building the capabilities and acquiring the intangible assets they will need for future growth. The Balanced Scorecard is not a replacement for financial measures; it is their complement (Kaplan & Norton, 1996).

Given that companies' survival depends on their ability to innovate, they need to have knowledge in order to learn, adjust and make changes (Allee, 1997). Or as the Japanese management expert Nonaka (1991) says; "In a world where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge". Thereby, a Balanced Scorecard where ideas from the knowledge management theories are taken into consideration, could provide an even better way to manage those hard-to-reach resources that the organisation possesses, but often has inadequate tools for managing. Today, every business is a knowledge business, and almost every worker is a knowledge worker (Drucker, 1991). Given the rapid changes and advances in most fields, skills and techniques learned more than a decade ago are inadequate to compete in today's market. In the face of these challenges, the major defence for many organisations is to manage knowledge on a broad basis. That is to educate, build an internal knowledge base, pool and deploy the knowledge they have, invest in the development of new and proprietary knowledge, and put their knowledge to use as effectively as possible (Wiig, 1995). The Balanced Scorecard – a clearly defined management tool - combined with the knowledge of management ideas could be just the right way to do it.

Accordingly, our research question will be: Can the Balanced Scorecard be used as a tool for managing knowledge? Depending on the outcome of the main question we will also try to answer which of the knowledge management ideas that are suitable for implementing in a Balanced Scorecard and which parts that are not.

2.2 PURPOSE

The main purpose of this thesis is to explore if the Balanced Scorecard is a proper tool for managing knowledge in an organisation. If the answer is yes, we will try to determine how to go about to incorporate the knowledge management issues into the Balanced Scorecard. If possible, we will also explain benefits and difficulties with integrating the two concepts. However, if the answer to the main question is no, we will explain why we think the Balanced Scorecard is not a suitable tool for knowledge management work.

By doing this research we want to show companies a way to deal with the intangible resource called knowledge, which we believe can help them create the competitive advantages they will need to succeed in the future. We also hope that some fuzziness of the knowledge management concept might be reduced.

2.3 SCOPE AND LIMITATIONS

In the methodology chapter, we will explain the methods we use to answer the research question. The chapter will give insights into the scope and limitations of our thesis, and state the choices made by us during the research process.

As we display in the methodology chapter, our research will be conducted in three companies. Our analysis of the knowledge management work in each of the three companies will be focused on what they have pointed out – during the interviews or in other material – as the most important knowledge management issues for them. The purpose for these proceedings is to increase the practical relevance of our research question.

The empirical study will be limited to Swedish companies. One reason is that many Swedish companies quickly adopted the ideas of the Balanced Scorecard. The ideas suited Swedish companies and their management

style, where "soft" values are often appreciated. Another reason is the time-limitation. We have only got 20 weeks at our disposal for the making of the thesis, which naturally restricts the scope of the study. Choosing Swedish companies therefore comes naturally.

3 RESEARCH METHOD

Research methodology refers to the procedural framework within which the research is conducted. It describes an approach to a problem that can be put into practice in a research program or process, which could be formally defined as an operational framework within which the facts are placed so that their meaning may be seen more clearly (Ryan et al, 1992). In other words, the method is the tool used to retrieve new knowledge. How good the method is depends on how appropriate it is for solving the research problem with its scope and limitations.

In this chapter we will discuss our decisions regarding the chosen method. We explain what choices we have made, and what actions we have taken to be able to answer our research question.

We have chosen to try to answer the research question by doing both theoretical and empirical research. In the empirical study, we interview three Swedish companies in different businesses to help us get a practical perspective to complement our theoretical studies. In the following, we will present a more detailed discussion of the studies made. Throughout this thesis we will see the research problem from a management or company perspective, which means that we apply a proprietary view (Kam, 1986). By this we mean that when we attach values to certain knowledge management aspects we mean value from the management's or the shareholders' point of view.

3.1 SCIENTIFIC APPROACH

It is common to divide research strategies into two principal scientific approaches: the positivistic and the hermeneutic. These two doctrines represent two different points of view, which mean they yield different scientific results (Johansson-Lindfors, 1993).

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The concept of positivism reflects a desire to draw conclusions based on empirically determined knowledge. It implies that the researcher is working with an observable social reality and that the end product of such research can be the derivation of laws or law-like generalisations similar to those produced by the physical and natural scientists (Ryan et al, 1992). This approach sees only knowledge that can be measured as true and proper, and it is extremely important to separate fact from opinion.

The other main theoretical approach, the hermeneutic, focuses on understanding the entirety and interpretation of events. For this reason the hermeneutic approach is often considered as the opposite of positivism. Unlike the positivist, the hermeneutic does not consider the world to consist of an objective reality but instead focuses on subjective consciousness. Each situation is seen as unique and it's meaning is a function of the circumstances and the individuals involved (Arbnor, 1996)

In this thesis, we are more biased towards the hermeneutic approach. The reason is that we are going to conduct research that is based on our interpretations of the reality and the phenomenon we are studying. There will be no measurable "truth" to our research, since it is a study where human beings' behaviour and social constructions will create the base for our conclusions. Hence, there is no scientific truth to the answers this research will produce. Each situation is seen as unique and its meaning is a function of the circumstances and the individuals involved. It will be biased with our opinions, the characteristics of the companies studied, and the individuals we interview. The conclusions of this thesis are thereby not automatically true for all organisations, but can serve as pedagogical tools used to change the reader's awareness and inspire changes.

3.2 RESEARCH APPROACH

Depending on the purpose of the study, how well the problem is structured, and how well the problem is known, researchers have to choose a research approach (Widersheim & Eriksson, 1991). The four main research ap-

proaches are the exploratory, explanatory, descriptive and the predictive (Ryan et al, 1992).

In this thesis, most of the research is done with an exploratory approach since the knowledge management topic is very broad, and we have to adjust for company characteristics as our research proceeds. Our newly found insights might demand revision of the research problem and conclusions as we continue. This is important since we are trying to answer the question how or why the Balanced Scorecard could be used for managing knowledge. To be accurate, we have to revise our attempts to solve this as our knowledge grows in the subject.

A descriptive approach is used when we as researchers try to document or map the phenomenon in question. We are, in this thesis, also using this approach, since we are trying to clarify the parts of the knowledge management concept used in this thesis plus describe the Balanced Scorecard tool to prepare the reader for deeper understanding of our conclusions.

Research with an explanatory approach often tries to explain the forces causing the phenomenon in question. It also tries to identify plausible causal networks shaping the phenomenon (Ryan et al, 1992). Hence, it is trying to study cause and effect. Since in this thesis we have no hypothesis that we try to falsify or any other cause and effect we want established, we do not use the explanatory approach. Finally, in this research we will probably speculate on future development in the subject area, but it involves no predictive approach.

3.3 DATA COLLECTION

Collecting and processing information can be done in two separate ways, either by the quantitative or by the qualitative method.

By the quantitative research method, data is collected in numbers from which statistical calculations and conclusions are drawn. This method is

often used when large populations are analysed. The qualitative method, on the other hand, penetrates every observation in a deeper way, focusing upon variables that are harder to classify and quantify. The main purpose of qualitative research is to obtain a more profound knowledge than the fragmented information generated by quantitative methods (Holme & Solvang, 1991). This thesis is of a more qualitative character, which is derived from the use of a hermeneutic scientific approach. We are mainly going to analyse three companies, representing different businesses, which will present us with an opportunity to draw in-depth conclusions. This also implies that it is important for us to get extensive access to the companies analysed in order to develop a deeper understanding. It is the chosen companies' subjective image of the situation that we are interested in, and it is not possible to translate this image into numeric variables. Thereby, it is only natural that our research takes the form of a qualitative one. In trying to understand the phenomenon we are studying, we must be flexible to the situation at hand and the respondents we interview. This also implies that we are searching for more qualitative information. However, we are aware of the fact that this might lead to fewer general conclusions being made.

3.4 COLLECTION METHOD

There are numerous approaches to the task of gathering data needed in the examination of a problem. A common distinction is made between two different types of data, namely primary data, which consists of information collected through direct examination; and secondary data, which includes earlier examinations, existing statistics, literature, and articles (Patel & Davidson, 1994). In this thesis, both primary and secondary data will be used.

In order to establish the research question, we started by collecting secondary data. Since the Balanced Scorecard and the knowledge management concept are used differently in different companies, it is important that we start our research by creating a basic understanding of them. The Balanced

Scorecard tool is fairly well defined, but we searched for recent literature and articles in academically reviewed journals in order to pick up the latest discussions on the subject. The other topic, knowledge management, is not a new phenomenon either, but requires a more in-depth study in management literature and articles in order for us to describe how we use the concept in our research. The Balanced Scorecard tool and the knowledge management ideas are thoroughly described in the theory section of this thesis. Secondary information in the form of annual reports and so forth was also used for a thorough review of the studied companies.

The primary data we collected has the characteristics of information directly suited to our research. Through the understanding and knowledge we got during the collecting of secondary data, we were able to shape the understanding of the information we needed to collect. The primary data was mainly acquired by conducting personal interviews, telephone interviews, and letter inquiries with employees in the studied companies.

When working with interviews as the information gathering method, we considered two aspects. First, how much we, as researchers, control the design and the relative order of the questions asked. This is called the standardisation of the interview. Second, we considered the possibility for the respondents to interpret the questions and the boundaries that restrict their answers. This is called the structure of the interview (Johansson-Lindfors, 1993). The interviews that we conducted in our research are in the form of qualitative interviews. This method is characterised by the researcher and the respondent having a discussion, where the researcher controls the topic discussed, but also that the respondent has the opportunity to affect the direction of the interview. The advantage of conducting such an interview is that it provides opportunity for the researcher and the respondent to discuss complex and unstructured issues that are hard to cover with other methods (Johansson-Lindfors, 1993). In our research, we used an interview guide, which helped us cover all the relevant topics during the interview. We include the interview guide as an

appendix to the thesis, so that the reader understands what topics we tried to cover during the interviews. It is important to remember, however, that in the discussions that took place during the interviews, the respondents were able to explain aspects of the subject that they feel are important. This is also a vital part of our research, but hard to foresee, and therefore hard to display in an interview guide.

To be able to collect as many and as detailed answers as possible, we tried to motivate and prepare our respondents. This is done by explaining the purpose of the study and by sending them some information in advance of what the interview will cover. We further explained that we were not going to present the individual respondent's exact answers, but only present our interpretation of the answers and other material received. There is also a negative aspect to this procedure, and that is that we might affect the respondent into giving us the answers that he or she believes that we want (Johansson-Lindfors, 1993). We tried to avoid this as much as possible by only giving the respondents general information, and asking the detailed questions at the interview.

At the interview, we tried to avoid indistinct, but also leading questions. We asked more general questions first, to get the respondents relaxed and to be able to get a better overview and background before asking the more detailed questions. We avoided asking the respondents our explicit research question, and instead asked other questions that aimed at helping us to answer the research question in the latter parts of the thesis.

The interviews were performed by both of us together. They were taped and then printed out so that we were able to go back and read the interviews again if we disagreed on how to interpret an answer. One of us also took some additional notes during the interview in order to reduce uncertainties which could than be clarified at the end of the interview.

The interpretation of the answers was performed by both of us together. We tried to put the answers into a context, where we should be able to understand the whole picture (Holme & Solvang, 1991). The interviews were thereby a part of other collected material, like information about the companies' Balanced Scorecards, their knowledge management work, their annual reports, and policy reports.

To avoid misunderstanding and to reduce the fear of the respondents that their answers would be misinterpreted, we let the respondents read the parts in our thesis that refer to their company and them as respondents. Thereafter, we discussed potential changes and explained our position in the different interpretations with the respondent. We believe that through co-operation with the respondent we are able to present a better understanding of what they really mean, and thereby increase the credibility in our research.

3.5 SAMPLE

To increase credibility in our research, it is important that the sample we have chosen is representative of the population we are going to investigate. In order for our research to have a broader scope, it is important that we do not focus on companies that operate in the same line of business. To make sure that we get companies that differ enough from each other and exhibit certain criteria that are characteristic for the population, we have to do a strategic sample (Johansson-Lindfors, 1993).

We have chosen to interview companies that are working with the Balanced Scorecard on a strategic level, and that have been doing so for a period of time. The reason for this criterion is that we wanted the companies to have experience of the advantages and disadvantages of using the scorecard. We also wanted the companies to have insights into, and worked with, knowledge management. With this criterion, we believed that insights into the topic together with experience from their company would help us expand the knowledge gained by theoretical studies. As previously mentioned, we also wanted to interview companies that did not operate in

similar businesses. The reason is that we believe that differences between the companies and the environment they work in will spur differences in the way they work with the Balanced Scorecard and knowledge management. By choosing three different types of companies, we believe that we are able to see similarities and differences that help us draw conclusions in our research.

To find companies to use in our research, we searched in literature and theses to find what companies could fulfil our criteria. We saw that several companies could fulfil the Balanced Scorecard criteria, but it was more difficult to find information about their knowledge management work. In order to find out how they work with knowledge management, we contacted companies by phone and asked them to explain if and how they worked with these issues. Cap Gemini, Ernst & Young, Shell, KappAhl and SKF seemed to fulfil all our criteria and we considered them suitable for our research. Cap Gemini and Ernst & Young are in the same type of business, and since Cap Gemini explained that they had very little time at our disposal, we chose Ernst & Young instead. We also chose to not work with Shell since the people with knowledge about their knowledge management work were working in the Netherlands. So, a common ground for all three companies' chosen was that they are all operating on an international level with headquarters in Sweden or with an autonomous Swedish management.

To make sure that we got companies that operated in different environments in order to spot differences between them, we chose companies from different industries. We chose SKF since it is a global industrial group and operates in the heavy industry sector. It has been established since 1907 and has operated on a global scale for several decades. Originally, we were determined not to work with SKF since they do not work with the scorecard at the moment. But, on second thoughts, we were excited to include SKF since they have the knowledge of the Balanced Scorecard and knowledge management we were looking for and had taken the decision not to work with the scorecard for now. Thereby, SKF might be able to provide us

with additional insights into the Balanced Scorecard that the other two companies maybe have not discovered yet. The second company we chose was KappAhl. This company operates in the retailing industry, and works internationally – focusing on the Scandinavian market and Poland. KappAhl operates with a decentralised organisation with few levels and clearly defined responsibility for all individuals. The third company chosen is Ernst & Young, where we focus on the Management Consulting division (MC) since it possesses the best in-house knowledge about knowledge management and the Balanced Scorecard. It is a Swedish company owned by its partners that work in a global network together with representatives from other Ernst & Young offices in other countries. The company works with global as well as local customers in teams or as individual consultants. Ernst & Young describe themselves as a knowledge company. Since these three companies operate in quite diverse environments, we believe that if there are significant differences in their way of working with the Balanced Scorecard and knowledge management, we will have the opportunity to pick up on the differences and present a more interesting analysis.

It was also important for us to select the right persons to interview in the three companies. We wanted to interview both a person that worked with the Balanced Scorecard, and knew how the work with the scorecard started in the company. Additionally, we wanted to interview a person that was active in the work with knowledge management, and had some influence over the future direction of the knowledge management work in the company. The reasons for choosing two persons with different backgrounds were that we wanted, first, to talk to two specialists, one in the Balanced Scorecard and one in the knowledge management area, and second, to find differences in the way they perceive the work being done in these two areas. By asking both respondents questions about both the Balanced Scorecard and knowledge management work, we wanted to find discrepancies between how the specialist described their work, and how the other specialist perceived it. We also aimed to discover if there was any co-operation between the two specialists and their work today.

We selected the individuals to interview in co-operation with the three companies interviewed. When describing the type of person we wanted to interview we were directed to employees within the company that, after a discussion with us, either set up an appointment or directed us to another employee, more suited to our research.

3.6 RESEARCH EVALUATION

Credibility is important to all types of research. The issue of credibility refers to being able to demonstrate that the research was designed in a manner that accurately identifies and describes the phenomenon to be investigated (Ryan et al, 1992). In order to reach credibility in a qualitative study, issues concerning validity and reliability should be described. It is difficult in this type of study to reach a commonly agreed "truth", but a main concern is to present the research so that it could be perceived as credible to the reader (Norén, 1990). Since there is no universal "truth" to our research, we have tried to reach credibility by, as openly as possible, showing how we pursued this research. We have tried to show the path of our research and describe the ways we have taken to reach the conclusions. We will also reveal the sources we used. Finally, we will try to account for our opinion of this research's validity and reliability below.

3.6.1 Validity

In our research the validity will be affected by how sensitively and effectively we collected our evidence. This means that it is important to be thorough when defining interview questions and to explain the purpose with the interview in order to avoid misunderstandings and misinterpretation. It is also important for us to establish a quality relationship with the companies to be able to get the best kind of information and support. A way to ensure this is for us to present useful and adequate conclusions that could improve the companies' knowledge in this area. In addition, it is important for the validity of the thesis to disclose all information about the research process so that the reader could shape her own opinion about how

the evidence was collected and the interpretations made. This is how we try to provide the reader with the ability to question the quality of the arguments in the interpretations and conclusions drawn in this thesis.

3.6.2 Reliability

With a high reliability, the study has a low frequency of random errors and its result could be replicated. Again, since the study is executed in three companies and interpretations are made from open-ended interviews, this research will be hard to replicate. Even if the study is repeated, the situation might have changed. The employees in the interviewed positions might have quit or had to change jobs and there might have been new research published, changing conceptions about the Balanced Scorecard and knowledge management. Therefore, our best effort to ensure reliability is to follow good practice guidelines such as establishing an audit trail (Ryan et al, 1992).

3.7 SUMMARY

To answer our research question, we perform the research at three Swedish companies. We conducted descriptive and exploratory research with a hermeneutic approach. The information gathered is of both primary and secondary nature. The primary information was collected through open personal interviews. The research is of a qualitative nature, and we have tried as far as possible to openly display all our actions so that the reader can judge the validity and reliability of the research.

4 THEORY

4.1 INTRODUCTION

This chapter consists of three main parts. In the first part we describe knowledge management theories and discuss related subjects that need to be explained, in order to make the knowledge management area more understandable. In the second part we discuss the common ground for the Balanced Scorecard and knowledge management, and aim to show the potential links that we see between the two. In the third part we describe the Balanced Scorecard in detail, in order to increase the understanding of this tool, and to facilitate understanding of the analysis.

4.2 KNOWLEDGE MANAGEMENT

"In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge" (Ikujiro Nonaka, 1991)

Knowledge management is one of the buzzwords that have become extremely popular in recent years. Or rather, it is a concept that has again been paid a lot of attention. Knowledge management is actually a fairly old idea in the management literature. Friedrich von Hayek observed decades ago that a company's most important asset was its ability to process information. Peter Drucker invented the term "knowledge worker" about 40 years ago, and Kenneth Arrow, an American thinker, emphasised the importance of informal knowledge to companies back in the 1960's (Nonaka, 1997). So, knowledge management has existed for a very long time, although dressed up in various outfits and with emphasis on different aspects of the area. Hence, there are deep sources of information to pour from in the area, but some of the leading theorists are Michael Polanyi (1996), Chris Argyris (1977), Peter Senge (1995), and Ikujiro Nonaka (1991).

In the modern business environment, knowledge has become the main competitive tool of many businesses. Given that their survival depends on their ability to innovate, companies need to have knowledge for them to learn, adjust and make changes (Allee, 1997). Several authors in the knowledge management field (e.g. Allee 1997, Edvinsson & Malone 1997, Zack, 1999) stress the importance of making knowledge a strategic issue in the organisation in order to stay competitive in the market. Today, every business is a knowledge business and almost every worker is a knowledge worker. Consequently knowledge management has come into focus. The ideas for how to realise this are numerous, and can be found in various disciplines.

4.2.1 What is knowledge?

4.2.1.1 Definition of knowledge
When discussing knowledge management, the inevitable question of what knowledge really is comes into focus. However, it is no easy task to try to define knowledge. In the past two millenniums, people have tried to correctly define the evasive concept of knowledge. Socrates and one of his apprentices made one of the first documented attempts.

"SOCRATES: *If, when it tells us to add an account, it's telling us to get to know, rather than judge, the differentness, then we'll have an amusing thing in this most admirable of our accounts of knowledge. Because to get to know is surely to get hold of knowledge, isn't it?*

THEAETETUS: *Yes.*

SOCRATES: *So, when it's asked what knowledge is, this account will apparently answer that it's correct judgement together with knowledge of differentness. Because that's what adding an account would be, according to it.*

THEAETETUS: *Apparently.*

SOCRATES: *And when we're investigating knowledge, it's absolutely silly to say it's correct judgement together with knowledge, whether of differentness or of anything else. So it would seem, Theaetetus, that knowledge is neither perception, nor true judgement, nor an account added to true judgement.*

THEAETETUS: *Apparently not.*" (Plato)

Even though it seems that Socrates never really got a grip on the concept of knowledge in this dialogue, it shows the difficulties in correctly pinpointing the meaning of knowledge. In more recent times we see others trying to explain the concept.

In the Oxford Dictionary of Current English, we find a simpler explanation. It states that "*Knowledge is understanding or familiarity gained by experience; range of information*".

Sigmund Freud tries to explain the issue by saying that "…*knowledge is the intellectual manipulation of carefully verified observations*".

Another attempt has been made by Pemberton (1998), who refers to earlier literature when saying that "*…. what can be recorded is not knowledge, but only a representation of knowledge…Where there is knowledge, there must be a knower; pieces of paper represent nothing..*"

In this thesis, we will not thoroughly explore the exact meaning of the word knowledge. The reason is that the thesis would then have to be stretched out, touching other disciplines such as psychology, philosophy, neurobiology, etc. This would not make our study any good, mainly because when it comes to knowledge management, it is obvious that the concept of knowledge important to manage varies substantially between different companies. However, in order to be able to elucidate the different aspects of

knowledge management, we will have to explain how this discipline divides knowledge into subparts. This is done in order to increase the understanding of the concept of knowledge management, and its underlying theories. We will not present all the ongoing discussions of how to define knowledge, just show how knowledge is dichotomised in the knowledge management research field today.

4.2.1.2 Different types of knowledge
There are two types of knowledge according to the doctrine of knowledge management today. They sometimes have different names by different authors, but essentially explain the same basic approach.

Polanyi (1966) as well as Nonaka (1991) and Sveiby (1999), talk about the two types of knowledge; they call them explicit and tacit. Explicit knowledge is formal and systematic. For this reason, it can easily be communicated and shared, in product specifications, a scientific formula or a computer program. Tacit knowledge, on the other hand, is not as easily expressible. It is hard to formalise, and therefore difficult to communicate to others. Tacit knowledge consists partly of technical skills – the kind of informal – hard to pin-down skills captured in the term "know-how". A master craftsman after years of experience develops a wealth of expertise "at his fingertips", but he is often unable to articulate the scientific or technical principles behind what he knows (Nonaka, 1991).

Converting tacit knowledge into explicit knowledge means finding a way to express the inexpressible. Articulation (converting tacit knowledge into explicit) and internalisation (using that explicit knowledge to extend one's own tacit knowledge base) are the critical steps in the spiral of knowledge (Nonaka, 1991)

A model presented by Stein (1996) of the different dimensions of knowledge is slightly different compared to the ideas from Nonaka et al (1996) since this model also takes into consideration the willingness and capability

to communicate knowledge. This is a way to explain why explicit knowledge sometimes stays tacit, although it is possible to communicate.
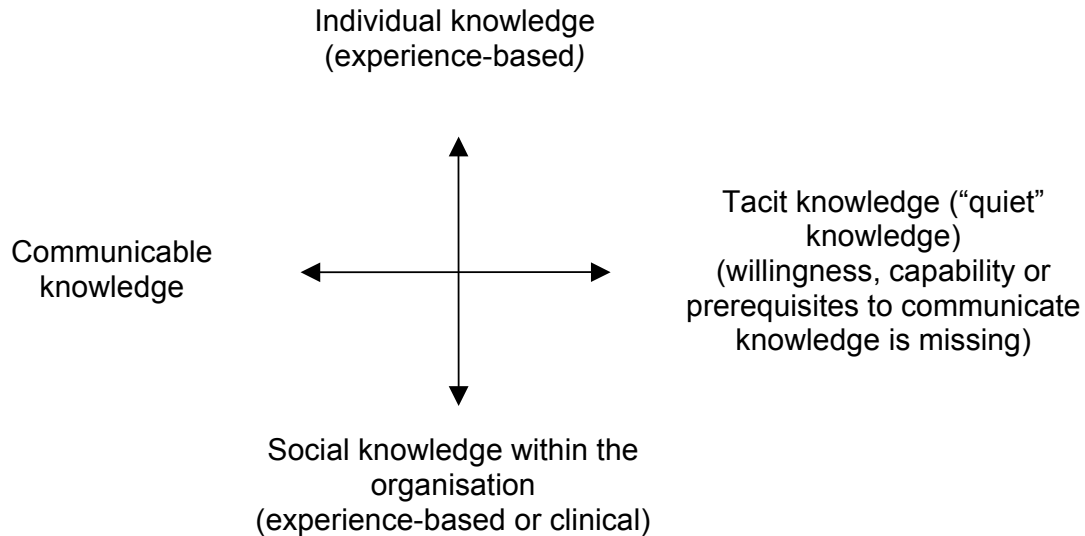
Individual knowledge
(experience-based*)*

Communicable
knowledge

Tacit knowledge ("quiet"
knowledge)
(willingness, capability or
prerequisites to communicate
knowledge is missing)

Social knowledge within the
organisation
(experience-based or clinical)

Figure 4.1: *Steins model of the dimensions of knowledge, Source: Stein 1996, p 22*

4.2.1.3 What is the difference between knowledge and information?

Most people have an intuitive feeling that knowledge is a more extensive, deeper and richer concept than data and information. Davenport & Prusak (1998) mean that it is possible to talk about a person as knowledgeable, experienced and informed. When talking about books, memos, databases and so on, we never use words such as knowledgeable or knowledge filled, even though knowledgeable individuals or groups might have created them.

Rognhaug (1996), just as Pemberton (1998), claims that the principal difference between information and knowledge is that knowledge – "know-how" – can only be carried by people since they have insight, knowing and learning that they can act from. Information – "know-that" – can be stored in databases, books, video etc and is not directly connected to human activities. Rolf (1991) is supporting this view when saying that the practical knowledge that professionals have mainly consists of know-how and competence. Know-how is the capability to steer ones acting according to

quality criteria within the area, while competence is know-how and a capability to, by reflection, influence the criteria for exercising the profession.

4.2.1.4 What is the difference between knowledge and competence?

Knowledge and competence are concepts that gain meaning in the interaction between people. Several factors play a role when determining whether people are knowledgeable and competent. It might be their qualifications, the tasks they perform or socially shared norms, values and expectations (Stein, 1996).

According to Sveiby (1997) competence comprehends matter-of-fact knowledge, skilfulness, experience, values and social networks. He claims that competence is the best word to use when describing knowledge in a businesslike context. Hamel & Prahalad (1990) assert that competencies are like glue that ties together different business units. Competencies include communication, participation and a strong commitment to work across the organisation's borders.

Looking at the individual level, explicit knowledge is independent of the individual that created it, which is not the case when it comes to competence (Sveiby, 1997). On an organisational level Stein (1996) shows that competence usually is described as the capability of holding and keeping a co-ordinated usage of resources for reaching the organisational goals.

When Sveiby (1997) uses the word competence he usually refers to practical knowledge. Very often, though, authors (e. g. Gärdenfors 1992; Stein 1996) also include other things than knowledge in the concept, for example personal relations and interests.

4.2.2 What is knowledge management?

In its broadest sense, knowledge management is a conceptual framework that encompasses all activities and perspectives required for gaining an overview of creating, dealing with and benefiting from the company's knowledge assets and their particular role in support of the company's

business and operations (Wiig, 1995). One of the reasons for the increased interest in the subject is that business organisations are coming to view knowledge as their most valuable and strategic resource (Zack, 1999). There are at present a lot of discussions about how to define the term knowledge management and how it is linked with other terms such as intellectual capital, competence, human capital etc. Here we present some of the discussions concerning knowledge management in order to show how the development continues at present. We believe that concepts are best defined from how people use them, and therefore we will try to define knowledge management by looking at what people in this field are doing.

4.2.2.1 Intellectual Capital

One aspect that has been discussed a lot in recent years, and that touches on the knowledge management issues, is the value of the companies' intellectual capital (Edvinsson & Malone, 1997; Roos et al, 1997; Stewart, 1997). In this discipline, besides defining the new concepts regarding a company's value, theorists have focused much of their efforts on the problems of measuring intangible assets. The theories about intellectual capital set out to explain the value in a company that is not evident in the financial reports. To be able to do this, Edvinsson & Malone (1997) and Stewart (1997) try to explain what it is in a company that contains and creates value. Edvinsson & Malone's (1997) point of departure is the market value, which they say consists of the financial value, which can be seen in the financial reports, and the intellectual capital. The intellectual capital is usually defined as the companies' structural capital (customer capital and organisational capital) and human capital. Two simple definitions used for the two concepts are that the human capital is the value that is embedded in the employee and the knowledge they possess. The structural capital is the value that is preserved in the company as the employees go home for the day. The structural capital therefore consists of the value of the knowledge held by the company, like customer databases, manuals and methods. One company that has been world famous for its efforts in the area is the Swedish insurance company Skandia.
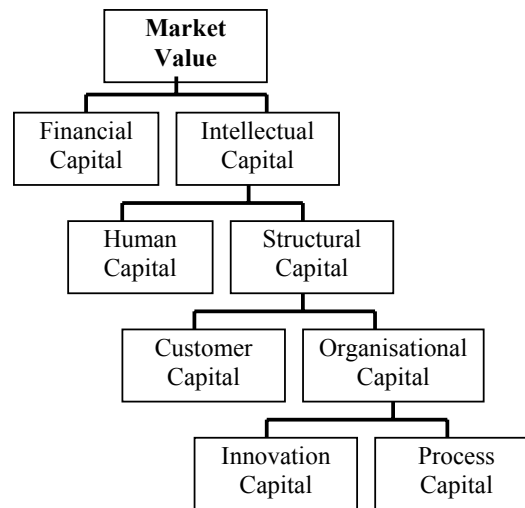
Market Value
├─ Financial Capital
└─ Intellectual Capital
   ├─ Human Capital
   └─ Structural Capital
      ├─ Customer Capital
      └─ Organisational Capital
         ├─ Innovation Capital
         └─ Process Capital

Figure 4.2: *Skandia market value scheme, Source: Edvinsson & Malone, 1997*

Roos et al (1997) discuss the conceptual roots of intellectual capital. They claim that the intellectual capital is strongly connected to knowledge development and knowledge leverage. Knowledge development refers to the fact that a company can develop knowledge in two different ways, either by acquisition – for example by recruiting or buying another company, or by internal development – for example by research and development or internal training. The authors also describe how important it is to share the developed knowledge in the organisation to facilitate its growth. Knowledge leverage is the process that occurs when the knowledge that once has been created comes to use in the company and is applied in the routines and in daily operations. Roos et al. (1997) summarise the ideas about knowledge development and knowledge leverage as follows:

- Knowledge and learning are key competitive advantages in today's world.
- While information technology, organisational structure and physical layout can help, companies should aim for a behavioural change.

- The developing and leveraging of knowledge cannot be separate activities.
- Widespread application of knowledge is a goal in itself and a means to develop new knowledge.

Both aspects – knowledge development and knowledge leverage – are also closely tied to the concept, knowledge management.

4.2.2.2 Organisational learning

Another contribution to the knowledge management area is the ideas about organisational learning. Organisational learning is, according to Argyris (1977), "…a process of detecting and correcting error." He stresses the importance of implementing the capability to question behaviour and ways of thinking in the organisation. The organisation has to be double-loop learning, which means to question not only the actual behaviour but also the grounds – e.g. norms and strategies - for this behaviour. To achieve this a lot of freedom has to be given to the employees, as well as a wide scope for mistakes (Argyris & Schön, 1978).

4.2.2.3 Learning organisations

The concept learning organisations has also played an important role in the discussions about knowledge management. "Learning organisations" has become a comprehensive term for an organisational form that fill their employees with enthusiasm, and that is always ready to learn new things and to develop the knowledge within each individual in the organisation. According to Peddler et al (1991), a learning organisation is an organisation that supports learning among the majority of its employees, and that continuously renews itself. There are some other principal points in the theories about learning organisations that most authors in the field agree upon. One of these points is that learning organisations are decentralised with a lot of responsibilities given to each individual in the organisation (Senge, 1996, Morgan, 1995). Another point is that continuous education of the employees gives better knowledge and thereby better results (Peddler et al, 1991). A third point is that the communication in the organisation has to be open and not directed by the formal organisational structure (Morgan,

1995). It is also stressed that reasoning power and the right to make decisions should be moved downwards in the organisation, to ensure high motivation among the employees and to make decisions more rational (Senge, 1996).

4.2.3 Two knowledge management schools

Both among knowledge management vendors (researchers and consultants) and knowledge management users (companies and other practitioners) there seem to be two schools; knowledge management as *management of information* and knowledge management as *management of people* (Sveiby, 1999). The two schools within knowledge management can in turn be related to two different kinds of occupational categories.

In the following we will present the two different schools and the means, activities or practical methods that are used for managing knowledge in them. Throughout the rest of the thesis we will use the word "method" as a generic term for these means, activities and methods in both knowledge management schools in order to simplify the understanding of theory descriptions and the following analysis.

4.2.3.1 Management of information
The first school, whose advocates often have an education in computer and systems science, state that knowledge management stands for handling information. To them, knowledge is objects that can be identified and handled in information systems. This school is thereby strongly connected to new IT solutions (Olve et al, 1999). This view has also been found in research performed in knowledge intensive companies. In some companies, knowledge strategies focus very much on information technology.

In the management of information school there are three main methods for managing knowledge that we will explore in this thesis – Databases, manuals and knowledge mapping. The first two aims at converting the knowledge possessed by the employees into knowledge possessed by the company. This has been described by theorists as converting human capital

into structural capital (Edvinsson & Malone, 1997, Sveiby, 1998) or to articulate knowledge – converting the tacit knowledge into explicit knowledge (Nonaka, 1991). Hansen et al. (1999), say that this is part of a knowledge management strategy called the codification strategy. The first method in the codification strategy is the construction of databases and the second is the construction of manuals and education material.

Databases

When building databases, companies create a medium where knowledge can be carefully codified and stored and where it can be accessed and easily used by anyone in the company. The purpose is to extract the knowledge from the person that developed it and to make it independent of that person so it can be reused for various purposes (Hansen et al. 1999). This method naturally requires more advanced IT solutions, but allows many people to search for and retrieve codified knowledge without having to contact the person that originally developed it. An advantage with this method is that when the knowledge has been codified and entered in the database, it can be used by anyone in the company the same day.

Manuals

Writing manuals and education material etc. is another way of trying to convert the individual knowledge into company knowledge (Edvinsson & Malone, 1997). Again, the aim is to share the knowledge in the company so that it can grow and other people can benefit from it. It also makes the company less vulnerable for employees leaving the company and taking the knowledge with them. To make manuals and other material have the same purpose as making databases, even though it is not using IT as the tool for sharing the knowledge.

Knowledge mapping

The third method for management of information aims at understanding what knowledge the company possesses at the moment. The method is called knowledge mapping (Wiig, 1995). The knowledge map is only a means to an end and should be used to establish the knowledge gap in the company. The knowledge gap is the difference between the existing

knowledge and the knowledge needed. In essence, companies need to perform a knowledge based SWOT analysis, mapping their knowledge resources and capabilities against their strategic opportunities and threats to better understand their points of advantage and weakness (Zack, 1999). The company then have to map the knowledge to be able to determine if they have a knowledge gap. Knowledge mapping can be done by interviews, questionnaires or diagnostic tests to examine the level of education and knowledge the company's employees possess (Edvinsson & Malone, 1997). After determining these knowledge gaps, the company must determine how to close them. This can, for example, be achieved by recruiting new personnel, by educating the present personnel or through knowledge sharing activities.

4.2.3.2 Management of people

The other school in knowledge management deals with management of people. In companies using this approach, knowledge is closely tied to the person who developed it and is mainly shared through direct person-to-person contacts and by educating and training. The chief purpose of computers in these companies is to help people communicate knowledge, not to store it. Supporters of this school tend to be educated in philosophy, psychology, sociology, business and human resources etc. To them, knowledge is not objects, but processes consisting of complex and dynamic human abilities and constantly changing behaviour. To influence learning is a question of how to handle the individuals within an organisation. This school in the knowledge management field is very old and includes concepts such as organisational learning as presented by e. g. Argyris (1977) and theories about learning organisations as presented by e. g. Senge (1995) and Morgan (1995).

In the following we will focus on four methods by which the management of people school works. These are personalisation, employee education, acquiring knowledge and leadership.

Personalisation

A company pursuing personalisation wants to enable communication of knowledge in the company from one employee to others. The reasons are much like the ones for building databases, but the focus here is to get the knowledge to live in the organisation's employees (Hansen et al. 1999). Companies using this method invest less in IT than the ones building databases, since the goal of the IT is to facilitate conversations and exchange knowledge. In this way knowledge is not converted into structural capital, but has the liberty to flourish freely in the organisation. Companies that use the personalisation strategy focus on direct dialogue between individuals and try to build social networks so that people are linked together in a natural way. Knowledge that has not been codified – or perhaps cannot be codified – is transferred by other means, such as discussions or in personal networks (Hansen et al. 1999). The personalisation method also facilitates the transfer of tacit knowledge, since this type of knowledge might be hard to express and explain in a manual or database, but is easier to share in a personal relation (Nonaka, 1997; Sveiby, 1999).

The personalisation method also harmonises with the ideas presented by e.g. Argyris (1977) and Senge (1996), about organisational learning and learning organisations. Both stress the importance of giving freedom and responsibility to the employees themselves. To improve learning, Senge (1996) emphasises decentralisation and open communication that is not restricted by the formal organisation. This kind of learning is supported by the personalisation strategy, where the personal contacts and discussions leave room for variation and new ideas.

Employee education

Employee education is connected to the development of knowledge (Roos et al. 1997). By educating the employees, for example through briefings, conferences or training, the company can enable knowledge development internally. By educating the employees in new knowledge, the company also have the opportunity to spread new knowledge effectively in the organisation. Employees can add the explicit knowledge to their own tacit

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knowledge, which creates potential for further knowledge creation. The knowledge invested in the employees provides increasing returns as they use it. The more they use it, the more valuable it becomes, creating a self-reinforcing cycle (Zack, 1999). There is also an opportunity to share the tacit knowledge developed if the training features interaction between teacher and employee (Roos et al. 1997).

Acquiring knowledge

A company can also increase their knowledge by acquiring it from external sources, for example through recruiting new employees with special knowledge. Other ways can be to purchase patents or companies that hold certain knowledge. This method might be perceived as an easy way to increase company knowledge, but it is very hard for the company to know that the knowledge they acquired is that which they really need (Roos et al. 1997). This method also increases the need for knowledge sharing in the organisation in order to make the entire company benefit from the new knowledge.

Leadership

According to Nonaka (1991) the whole company is involved in the knowledge management processes, both employees and managers at all levels. This is not to say that there is no differentiation among roles and responsibilities concerning knowledge management, though. The main job for top-managers when it comes to knowledge management is to give voice to the company's future by articulating metaphors, symbols and concepts that can orient the knowledge-creating activities of employees (Nonaka, 1991). In short, they should communicate the company's goals concerning knowledge management to the whole organisation. At lower levels, middle managers are to serve as a bridge between the visionary ideals of the top and the reality of those on the front line of the business (Nonaka, 1991). The leaders in an organisation also have an important role to spread the knowledge they possess in the company. The employees learn from the managers who should serve as role models. The manager will then be the

teacher and an example for the others, and he or she might need to be educated to handle this leadership situation (Wiig, 1995).

4.2.4 Measurement of the knowledge management activities

To be able to follow-up the performance of the knowledge management methods, the company needs to measure the outcome of them. This is a difficult process since the measures of the knowledge management activities differ from the traditional financial measures. The purpose of measuring is to provide information that is useful when making decisions about the company's assets and to motivate managers to make sound decisions – i.e. decisions in the best interest of the company (Anthony & Govindarajan, 1998).

In most companies it is important for management to measure the activities and structure the measures to fit in their management control system. When using a tool like the Balanced Scorecard, to measure the outcome of different methods and activities will therefore be an important part both for managing information and for managing people. We want to stress that when measuring any kind of performance the organisation's leaders also point out the direction and the importance of the activities measured. "What gets measured gets done" (Claesson, 1998) or "If you can't measure it you can't manage it" (Kaplan & Norton, 1996) are famous quotations that are frequently used in today's debate about management control. We believe that this should also be true when it comes to managing knowledge.

4.2.5 Combining the two schools

Due to their different origins, advocates of the two schools within knowledge management – management of information and management of people - use different languages in their dialogues and thus tend to confuse each other when they meet. But not all theorists are trying to narrow down the concept to one of the two knowledge management schools. One definition of knowledge management that deals with both schools is voiced by Sveiby (1999) who claims that knowledge management is "the art of creating value from an organisation's intangible assets". It is therefore not

necessary to separate knowledge management into two schools. Sveiby claims that companies that try to be knowledge focused must consider both schools' ideas and apply them to the company's specific situation. As we continue in this thesis, we include both management of information and management of people when we talk about knowledge management.

4.3 USING THE BALANCED SCORECARD FOR KNOWLEDGE MANAGEMENT

In this section, we aim to show some common bases that knowledge management and the Balanced Scorecard have. The Balanced Scorecard tool spokesmen and the knowledge management theorists sometimes use the same vocabulary, which indicate how the two concepts could be linked to each other. We will discuss these aspects and also highlight potential problems. To increase the understanding of this discussion, the Balanced Scorecard tool will be thoroughly described in the next section of this chapter.

As mentioned earlier, knowledge management should be a strategic issue, since it, to a larger degree than most activities, affects a company's future capabilities, potentials, and direction. It is important to ascertain that the knowledge management work is in line with and provides strong support of the enterprise's mission and plans (Wiig, 1995). With a traditional management control system, focused on budgets and historic figures, this is not always the case. Strategy is seldom communicated to the whole organisation, but stays at the management level (Kaplan & Norton 1996, Wiig, 1995). This affects the scope of what the company management monitor. The company goals, originating from demands by owners, are broken down into subparts and divisions and departments and employees are evaluated on the financial performance. Employees will see the financial goals as the primary goals, and they will work to fulfil them to the best possible effect. This might create some adverse effects, since the employees then have little or no possibility of understanding other strategic objectives or the long-term goal of company operations. Non-financial goals, among which we

find goals for knowledge management work (e.g. "increasing the annual hours of training and education per capita"), then risk getting rated as secondary goals, since performance evaluation is done according to the financial goals. This, in turn, will probably result in less effort being made in the non-financial areas, no matter how ambitious projects and plans they might contain.

In a company that uses a Balanced Scorecard, there might be better chances for knowledge management work to succeed. Since the Balanced Scorecard tool aims at communicating the strategy to the entire company (Kaplan & Norton, 1996), all employees in a company using this tool should know where they are heading. They will then have the possibility to judge their own actions in the light of the company's complete strategies. Since knowledge management is supposed to be a strategic issue (e. g. Wiig, 1995; Zack, 1999; Edvinsson & Malone, 1997), the knowledge management strategy then is to be communicated to the whole organisation if a Balanced Scorecard is used. With a Balanced Scorecard, the employees' performance is evaluated not only in relation to the financial goals, but also in respect of the whole set of balanced measures that the scorecard consists of (Kaplan & Norton, 1996). Thereby, knowledge management will have the opportunity to be judged equally to other strategic issues, which will certainly facilitate the outcome of the knowledge management work.

Thereby, we reach another aspect that we see both in the knowledge management ideas and in the aim of the Balanced Scorecard tool, namely the future orientation. In the past, with traditional management control systems, many compared managing a company to rowing a boat – you are looking backwards, to see where you are heading (Wennberg, 1998). The Balanced Scorecard tool is an attempt to change that by introducing future-oriented perspectives. Again, employees that are presented with the strategy and future direction of the company will have the possibility to evaluate their actions and results in the light of this. With a balanced set of measures, the employees will also see that financial goals alone will not

help them reach their strategic objectives. It will be clear that also other, more future-oriented goals, e.g. in the knowledge management area, are equally important for the long-term survival of the company. As mentioned earlier, knowledge management has become a strategic issue since the future success of a company depends on how well it develops and takes care of the knowledge it possesses today.

Another aspect of the Balanced Scorecard, which indicates that it could be a good tool for knowledge management work, is that it implies a review of the company's internal processes, and thereby helps to create a more efficient organisation. Making the organisation more efficient is also one of the purposes of knowledge management work, for example by sharing knowledge throughout the organisation in order to enhance the company knowledge and avoid making the same mistake twice. The Balanced Scorecard could therefore be useful for knowledge management work too, by initiating a review of e.g. knowledge sharing processes and making them more efficient.

The Balanced Scorecard tool also puts a focus on the importance of enhancing the employee- and information-system capabilities as well as increasing the employee motivation. This is truly close to the aim with knowledge management work. In the Balanced Scorecard these aspects are usually measured in the learning and growth perspective.

When reviewing the common grounds for the Balanced Scorecard and ideas about knowledge management, we see that the Balanced Scorecard is one of the first management control tools that can be used for incorporating both financial and non-financial objectives. Additionally, the Balanced Scorecard both endorses knowledge management activities and serves as a tool for measuring the performance. Depending on how a company brings the Balanced Scorecard tool into play, it can be used both for internal management control - for implementing strategy and managing the com-

pany's resources – and/or as a more externally oriented system, designed to create disclosure for owners and other interest parties.

The aspects previously mentioned all indicate why there is a possibility that the Balanced Scorecard could be an accurate tool to facilitate knowledge management in a company. However, there are threats to the success of the implementation of a Balanced Scorecard that could affect knowledge management work as well. One of the disadvantages with using the Balanced Scorecard as a tool for knowledge management work is that, if the implementation of the Balanced Scorecard falls short, the knowledge management work carried through by means of the scorecard risks getting washed out along with it, as the baby with the bath-water.

In the final part of the theory chapter, we will describe the most important aspects of the Balanced Scorecard. We do this to make sure that we have a common understanding of the expressions used and the links we present in the empirical part of this thesis.

4.4 THE BALANCED SCORECARD

The main purpose of the Balanced Scorecard model is to put the company's vision and strategy into action. It puts the strategy and vision, not control, at the centre. It establishes goals, but assumes that people will adopt whatever behaviour and take whatever actions are necessary to arrive at those goals (Kaplan & Norton, 1992). This is done by transforming the vision and the strategy into critical success factors within four different perspectives, a financial perspective, a customer perspective, an internal perspective, and a learning and growth perspective. From the critical success factors, a number of suitable measures and objectives are compiled and balanced in the scorecard. One of several positive effects of working with the Balanced Scorecard is that it serves as an incentive for the employees to work and strive for the joint vision of the company (Kaplan & Norton, 1992).

So, a properly designed Balanced Scorecard should explain the company's or the business unit's strategy. It should identify and make explicit the sequence of hypotheses about the cause-and-effect relationships between outcome measures and the performance drivers of those outcomes. Every measure selected for a Balanced Scorecard should be an element in a chain of cause and effect relationships that communicates the meaning of the company strategy to the organisation.

4.4.1 The Balanced Scorecard's four strategic processes

As previously mentioned, the Balanced Scorecard links the company's vision and strategy to a number of measures, which together function as a framework for strategic measurement. Thereby, companies that use the scorecard do not have to rely on short-term financial measures as the sole indicators of the company's performance. Instead they have the opportunity to introduce four new management processes that contribute to linking long-term strategic objectives with short-term actions (Kaplan & Norton, 1996a).
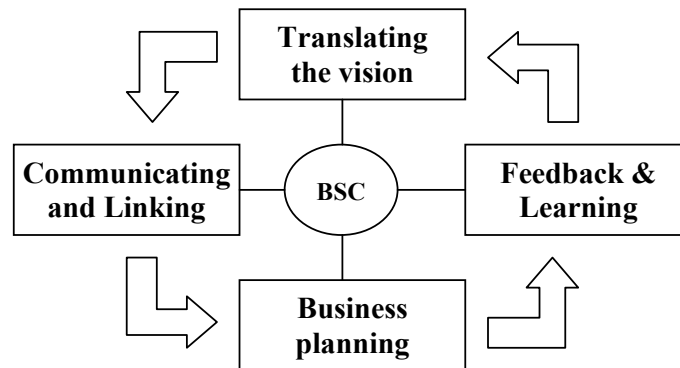
Figure 4.3: Managing Strategy: Four Processes, source: Kaplan & Norton, 1996a

4.4.1.1 Translating the vision

This first process helps managers build a consensus around the organisation's vision and strategy. The difficulty of this process largely depends on how the strategy has been developed. It is easier to translate a vision and strategy if it is shared among the employees in the company. The executives developing the strategy need input from people throughout the

organisation to be able to develop a competitive strategy. They need information from the experts within the company to help them take the right decisions. For example, the workers on the front line are the ones that really understand what customers want, and who can execute strategies in a way that will please the customer (Birchard, 1996).

4.4.1.2 Communicating and linking

The second process is very vital. It aims at communicating the strategy and objectives throughout the organisation and linking the strategy and objectives to the departmental and individual goals. This helps the employees to focus their efforts on a common goal and work in the same direction. Properly done, this should also increase flexibility in the organisation, since the Balanced Scorecard helps employees to understand the company's core competencies and its values. The Balanced Scorecard therefore gives managers a way of ensuring that all levels of the organisation understand the long-term strategy and that both departmental and individual goals are aligned with it (Kaplan & Norton, 1996b). However, unless a company ties the balanced set of measures to the compensation system, it will not be able to use the scorecard as the central organising framework for its management systems (Kaplan & Norton, 1996).

4.4.1.3 Business Planning

The third process is the process where the company should integrate its business plans with its financial plans. It includes aligning departmental business plans to the company strategy. The Balanced Scorecard aims not at reducing the creative initiatives from different departments but tries to set balanced measures as the basis for allocating resources and setting priorities, so that the organisation and its subparts can co-ordinate and undertake the initiatives that move them toward their long-term strategic objectives.

4.4.1.4 Feedback and learning

According to Kaplan & Norton (1996a), the fourth process gives the companies the capacity for strategic learning. The basis for this is that the com-

pany applying the Balanced Scorecard can monitor the results from the four perspectives and evaluate the strategy in the light of recent performance. Thus, the scorecard enables the company to reflect over their situation and thereby provide opportunity to adapt or change strategies to fit the current situation. In other words, the organisation needs the capacity for double-loop learning. This is the kind of learning that occurs when managers question their assumptions and reflect on whether the basic values and ideas under which they were operating are still consistent with current evidence, observations and experience (Kaplan & Norton 1996, interpreting Argyris, 1982)

4.4.2 The four perspectives

The Balanced Scorecard, according to Kaplan and Norton, consists of four perspectives. These are the Financial perspective, the Customer perspective, the Internal Business Process perspective, and the Learning and Growth perspective. These four perspectives provide the framework for the scorecard, and measure the performance of a company during the past, present and the future. What is done today, in order to prepare for tomorrow, might not yield financial results until the future. This repositions the focus of a company from traditional short-term operation control, to more progressive long-term control.

There is no "law" in the Balanced Scorecard that states that a company should use all the perspectives described below or that it cannot add an extra perspective. On the contrary, companies implementing a Balanced Scorecard should consider adapting it to their environment and internal business processes. Kaplan & Norton (1997) also recognise that there is sometimes a need for changes in the Balanced Scorecard perspectives, but they say that companies should consider changes in the scorecard perspectives carefully. They claim that there is a risk of wanting to put focus on too many things, and thereby to lose the focus on the things that set the basis for competitive advantage.

To achieve "balance" within the scorecard, the four perspectives need to be mutually dependent in order for the effects of different actions not to counteract with each other. The purpose of the concept is, as mentioned, to put the company's vision and strategy into action, as well as to outline business strategy in four different respects, corresponding to the four perspectives (Kaplan & Norton, 1996):
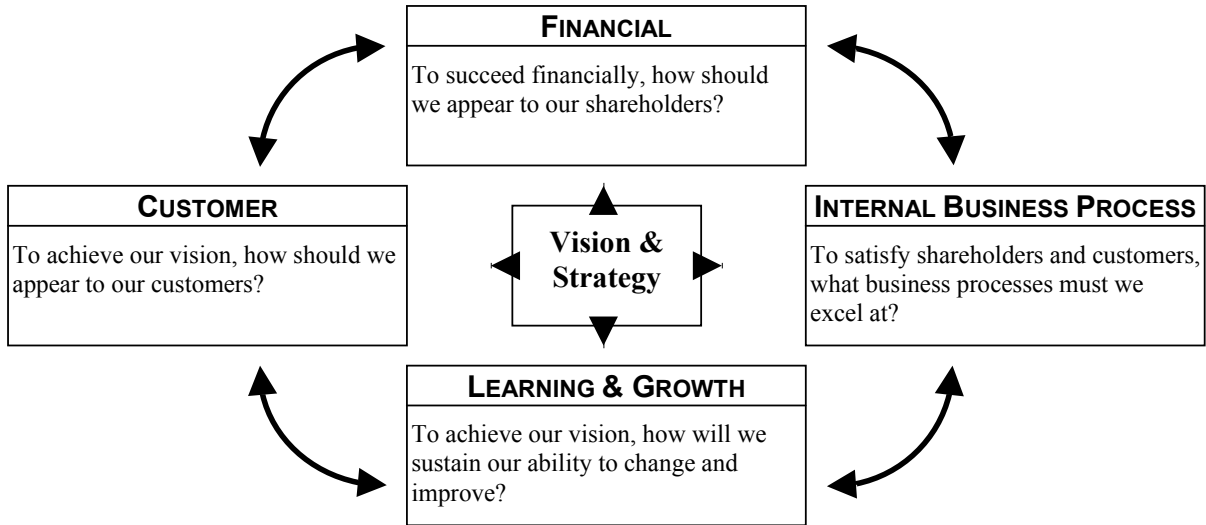

Figure 4.4: *The four perspectives, source: Kaplan & Norton, 1996*

4.4.2.1 Financial perspective

The financial measures define the long-run objectives of the business unit (Kaplan & Norton, 1996c). These objectives are established in the strategy and linked to sequences of action that should be taken within the four different perspectives in order to achieve the desired long-term outcome. The different measures selected in the Balanced Scorecard should be links in a chain of cause-and-effect relationships that culminate in improved financial performance. Eventually, all objectives and measures in the other scorecard perspectives should be linked to achieving one or more of the objectives in the financial perspective (Kaplan & Norton, 1996). By doing that, the company recognises that the long-run goal for the business is to generate financial returns to investors, and that all the strategies should enable the business unit to achieve its financial objectives.

Financial objectives are typically related to profitability, asset returns or revenue enhancement. A basic financial goal for most companies is to provide superior returns based on the capital invested in the unit (Kaplan & Norton, 1996). As in the traditional management control systems, the Balanced Scorecard also recognises the need for financial information. The periodic financial statements and other financial measures continue to play an essential role in the scorecard. They are there to remind managers that the measures in the following perspectives are just the means to an end. If they are not translated into financial performance, the shareholders will lose their faith in the management and demand changes to ensure profits.

4.4.2.2 Customer perspective

In this perspective, the company establishes their customers and market segments in which they want to compete. Then they must arrive at adequate objectives and core measures, and determine which critical success-factors influence company competitiveness. When these steps are completed, the company can create its own product mix. This perspective enables companies to align their core customer outcome measures – satisfaction, loyalty, retention, acquisition, and profitability – to targeted customers and market segments (Kaplan & Norton, 1996).

According to Kaplan & Norton (1996c), the company should determine what characteristics it is that their products should have in order to satisfy customers, and how the company should act. Customers' value propositions represent the attributes that supplying companies provide, through their products and services, to create loyalty and satisfaction in targeted customer segments. Kaplan & Norton (1996c) identify three sets of attributes that organise the value propositions in all of the industries where they have constructed Balanced Scorecards:

- Product/Service attributes (such as price, quality, time, functionality and uniqueness)

- Customer Relationship (perceived characteristics of the company or products by the customer. For example personal relationships, responsiveness and trust)
- Image and Reputation

By selecting specific objectives and measures across these three classes, managers can focus their organisation on delivering a superior value proposition to their targeted customer segments.

4.4.2.3 Internal Business Process Perspective

The internal-business-process perspective, and the process of deriving objectives and measures, represents one of the sharpest distinctions between the Balanced Scorecard and traditional performance measurement systems. The Balanced Scorecard usually reveals entirely new business processes. Objectives and measures for the internal-business-process are derived from explicit strategies in order to meet shareholder and target customer expectations. A common shortcoming of traditional measurement systems is that they attempt to improve performance of individual departments rather than of integrated business processes. A second shortcoming is that traditional measurement systems tend to focus on products and services for today's customers, while the Balanced Scorecard concept put the focus on entirely new products and services for future customers, in order to achieve long-term financial success (Kaplan & Norton, 1996). Companies should also attempt to identify and measure their core competencies, the critical technologies needed to ensure continued market leadership (Kaplan & Norton, 1992).

4.4.2.4 Learning and growth perspective

This final perspective aims at helping managers develop objectives and measures that drive organisational learning and growth. This perspective's point of departure is the company infrastructure, and how it must be changed to create long-term growth and improvement. The objectives in the learning and growth perspective provide the infrastructure to enable ambitious objectives in the other three perspectives to be achieved. The infrastructure consists of three parts (Kaplan & Norton, 1996): people,

systems and organisational processes. All organisations that want to achieve the ambitious goals set in the other three perspectives should develop and refine their infrastructure in order to reach those objectives.

Kaplan & Norton (1996) divide the learning and growth perspective into three principal categories; employee capabilities, information system capabilities and finally motivation, empowerment and alignment.

In employee capabilities, the core measurements are *employee satisfaction* – stems from a basic notion that satisfied employees tend to have the most satisfied customers, *employee retention* – where the organisation recognises that it is important to retain qualified employees within the company, and *employee productivity* – where the total number of employees is related to the total output.

Information systems capabilities acknowledge that the efficiency of the employees is connected to the information systems they have at their disposal. It is important that it provides fast and accurate follow-ups on completed activities so that it can be evaluated in order to affirm or change decisions taken. A low capacity information system greatly affects the impact of the Balanced Scorecard, since accurate feedback is an important part of ensuring efficiency.

Motivation, empowerment, and alignment are all important to "grease the wheels" of the organisation. The employees must be motivated if they are to work in the best interest of the organisation and towards the common goals. Here is where many organisations fail (Westin & Wetter, 1998). The reason is that no matter how brilliant the vision or how pedagogical the structure of the scorecard, there will be no significant change in the organisation until the employee behaviour has changed. They will not change until they recognise that they can contribute to reaching the defined goals and objectives of the organisation. They will contribute when they see how their actions in the daily operations affect their evaluation and

appreciation. This might seem a fairly easy task since the Balanced Scorecard should support this work – connecting the employee goals via the scorecard to the common organisational goals and thereby evaluating the employees on these goals. However, the organisational change that the implementation of the Balanced Scorecard brings about might not be welcomed. For many employees, change is neither sought after nor welcomed. They find it disruptive and intrusive as it upsets the balance in their workplace (Strebel, 1996)

4.4.3 Balanced Scorecard Discussion

4.4.3.1 Advantages
The discussion of whether a company should use a Balanced Scorecard or a more traditional financial control system will probably continue for a long time. All systems have their benefits and disadvantages, and for the Balanced Scorecard, Roos et al. (1997) have tried to summarise some of the scorecard's characteristics compared to financial control systems.

	Financial	BSC
Reliability	High	Medium
Ease of use	High	Low
Comprehensiveness	Low	High
Time and effort required to develop	Low	High
Comparability	Medium	Low

Table. 4:1 – *Financial vs. Balanced Scorecard, Source: Roos et al. (1997)*

The authors conclude, despite the fact that they recognise its drawbacks, that they believe that a balanced approach is preferable. The reason for choosing the scorecard is that they think it is important that a company adopts not a single measure to guide its decisions, but an assortment of indicators that can draw a clearer picture of the real situation and thus be far more useful for the company. As we have described earlier, the Balanced Scorecard - correctly implemented - could provide benefits that traditional management control systems have a hard time matching. The

following are some of the advantages that have been found in previous studies:

- *Communicating strategic messages*. The Balanced Scorecard clarifies organisational goals, that is, what the organisation as a whole is expected to accomplish, and measures the degree of success in attaining these goals (Bergendahl & Dagås, 1997; Olve et al, 1997).
- *Long-term planning and control* is a desirable element for most companies, and it is provided for in the Balanced Scorecard, since the scorecard enables long-term planning by establishing several future oriented, progressive key measures (Bergendahl & Dagås, 1997; Olve et al, 1997; Sundin, 1998).
- *The ability to focus on non-financial measures*, for example measures related to customers and processes, generates positive results even in a financial perspective. Increased understanding of such "soft" measures is essential in order not to neglect customers. Emphasis on other perspectives indirectly should result in an increase in corporate profitability (Bergendahl & Dagås, 1997; Olve et al, 1997).
- *Creating increased motivation*. The Scorecard approach has a breadth that enables every single worker to identify with one of its components. Moreover, each worker is provided with feedback on the contribution he or she makes to the organisation, which clarifies how the individual helps the overall business reach the defined corporate objectives (Westin & Wetter, 1998; Lindvall, 1997; Bergendahl & Dagås, 1997).
- *External awareness*. By adding a customer and a learning & growth perspective, the company shows increased awareness of external influences and is better suited to react to its environment (Björklund et al. 1998).

4.4.3.2 Criticism and potential pitfalls
No model can suit all companies and satisfy all critics, so the Balanced Scorecard has also been criticised and questioned. Since implementing a

Balanced Scorecard is a tough, time-consuming process we will also present some of the most common pitfalls to the scorecard's success.

One aspect where the Balanced Scorecard receives critique is the way the measures in the scorecard are determined centrally. This is especially evident with the non-financial measures. A company uses non-financial measures to a certain degree before implementing a Balanced Scorecard, but these measures are mainly active on a local level. They have been developed locally over a long period of time and are also used and followed-up on the local level, where they have relevance. They might even be specific for a set of employees and managers – the ones that have developed the measures. With a Balanced Scorecard, the top management decides on a set of non-financial goals on a company level that risks being forced on the employees in the organisation (Mouritsen et al. 1996). The old goals were set in a local context and relevant there, while the new goals are set in a strategic context and thereby risk losing their relevance on the work-floor. The employees will have limited influence over the new goals that are set and thereby risk being alienated.

Another critique, very relevant to this thesis, is the problem to accrue and explain the non-financial goals. The financial goals used in traditional accounting and management control have been developed over several hundred years. Today, we have methods, like the Du-Pont system, of how to explain the meaning of different financial goals and how they are linked to each other. For example, a return on total assets can be broken down into profit margin and total asset turnover. However, the non-financial goals do not have these kind of reciprocal links. Kaplan & Norton claim that the non-financial goals are essential to company strategy and that they should eventually be linked to the financial goals. The attention the Balanced Scorecard model has received indicates that many companies support this idea, but there are still unsolved questions of how to link these non-financial goals to each other and to financial performance. There is no possibility to test the non-financial measures in a situation where we hold

everything else constant. For example, what happens when employee or customer satisfaction rises? Will profitability increase as a result? Will the company increase their turnover? Will our internal processes be more efficient? They might, but it is very hard to prove (Mouritsen et al. 1996). Hence, the lack of established connections between non-financial goals are one of the reasons why sceptics doubt the Balanced Scorecard.

There are also some threats to the success of the Balanced Scorecard, or at least issues that must be considered and dealt with so that it does not provide future problems for companies implementing the Balanced Scorecard.

- *Declining worker participation*. If the personnel in an organisation is not prepared for, and informed about the process of change, extensive resistance toward the project can develop (Strebel, 1996).
- *The lingering dominance of the Financial Perspective*. The danger in focusing too much on financial factors is that this can restrict focus-linked planning discussions, and that short-term financial considerations can create a gap between strategy development and implementation. (Sundin, 1998; Westin & Wetter, 1998).
- *Too many measures – the risk of losing clarity*. Defining an overdose of measures in the scorecard can make follow-up too complicated. In that case, clarity can be lost (Sundin, 1998).
- *Keeping the scorecard alive*. Continuous maintenance of the Balanced Scorecard is essential. The risks of failure increase dramatically if the measures of the scorecard are considered "fixed", or are not constantly reviewed. (Kaplan & Norton; 1996, Westin & Wetter, 1998)
- *The time aspect*. Change takes time. Even if the creation of the Balanced Scorecard might just take a few months, it often takes several years before the whole process is established throughout the organisation. Therefore, it is important for the management to be patient, and continue to work hard with the implementation (Lindvall, 1997).

4.5 SUMMARY OF THEORY

Knowledge management has proved to be a vast subject. The first problem is to define knowledge. Several theorists dichotomise knowledge into explicit knowledge, which is formal and systematic, and tacit knowledge, which is more of the "know-how" of an individual. The knowledge management concept can be divided into two schools, management of information and management of people. The two schools use several methods to manage knowledge in practice, of which this thesis deals with seven.

When studying knowledge management theory and the Balanced Scorecard tool, some common features are evident. The long-term orientation and the communication of strategies are areas where knowledge management theorists and Balanced Scorecard pleaders use the same vocabulary, indicating that there is a possibility to use the Balanced Scorecard as a tool for managing knowledge.

The Balanced Scorecard is a performance measurement system that consists of a set of measures that enables the top management to get a fast but comprehensive view of the business. It is used for converting the strategy into action. The Balanced Scorecard includes financial measures that inform of the results of actions already taken. In addition, it complements the financial measures with operational measures on customer satisfaction, internal business processes and the organisation's innovation and improvement activities – operational measures that are the drivers of future financial performance.

By explaining knowledge management, basics about the Balanced Scorecard, and the possible connections that we see between the two concepts, we hope that we have facilitated an increased understanding of the analysis that will follow the presentation of the case studies.

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5 CASE STUDIES

5.1 INTRODUCTION

In this chapter, we are going to present the three companies in our study. We will start each part with a short general presentation of the company in question, and thereafter describe how they work with the Balanced Scorecard and knowledge management in this company. We do this to present a more comprehensive view of the companies and their work before analysing details and their knowledge management methods in the analysis chapter that follows.

5.2 SKF

SKF's vision is to be recognised as the world leader in bearings, seals and related products. The company wants to achieve this by being the best company in the industry in providing customer value, developing their employees and creating shareholder value (SKF annual report, 1998).

SKF was founded in 1907 and since then claims to have occupied a position in the front line of technical innovation. The company is today the world's leading producer of rolling bearings and also holds a leading position within special steels and elastomeric seals. With 80 production sites in 23 countries and sales companies or authorised distributors all over the world, SKF always finds itself close to the customer.

Financially, SKF was affected by the financial crisis that started in the Southeast Asia in the summer of 1997. The group showed a slight increase in net sales, MSEK 37 688, for 1998 compared to previous years, but due to the financial turbulence and need for structural changes, SKF showed a net loss for 1998 of MSEK -1642. As a result, a management change occurred on September 1, 1998, when Sune Carlsson replaced Peter Augustsson in the position as President and C.E.O.

Due to the financial downturn and the change of C.E.O., SKF is not actively working with the Balanced Scorecard in 1999. The new C.E.O. is determined to cut costs and decided to put the Balanced Scorecard into the background for now in order to signal to the employees that the company has new goals for a period of time. However, according to our respondents at SKF the different divisions are encouraged to keep the scorecard alive - if they feel they have use for it - but SKF as a group has left the scorecard to signal that a change has taken place. With the quarterly report presented in October 1999, SKF seems to have turned the negative trend and now shows positive net profit once again. Our respondents believe that the Balanced Scorecard will be used again since they feel that it is a very useful tool for situations where the company is in an expanding phase. Despite the fact that SKF's scorecard is not active in all parts of the group today, we will describe how they used it earlier in order to be able to draw conclusions and make comparisons later.

When SKF first started working with the Balanced Scorecard in 1995, the accounting department had already been trying to develop the old budget-process for a few years. Since the budget no longer fulfilled SKF's needs, the management was looking for an instrument that could complement or replace the budget and help them respond quicker to changes in the environment. When Peter Augustsson started working as the new C.E.O. in 1995, SKF started reviewing their strategies and long term planning. The company needed a way to connect the short-term objectives with the long-term goals. Some of the people working with these issues at SKF had come across the articles from Kaplan & Norton, and they saw that the Balanced Scorecard ideas could be just what they were looking for. The Balanced Scorecard could also help SKF solve another issue that they had been working with, namely how to include the company's quality work into the management control system. The management felt that with the Balanced Scorecard, they should be able to tie together activities that they felt had been too isolated before, and thereby the management activities could be seen as a whole. So when starting to work with the Balanced Scorecard in

1995 the management felt that they could tie together strategy and short-term goals, replace the budget process and tie together important activities in one comprehensive management control system.

The process to develop the first Balanced Scorecard was initiated in the group management. Controllers from the staff and different divisions were forming a project team that could give insights from different parts of the company. There were not only controllers in the team, but also people from human resource, quality teams and marketing etc. The project team also used people that had been working with other, similar, projects in the factories as resources and for testing ideas. The work with the Balanced Scorecard took time. SKF reached out to the entire organisation with the scorecard approximately three years after it was first initiated. SKF is a very large organisation and the management had to work their way through the different layers of the organisation, one at the time, when implementing the new strategy together with the Balanced Scorecard.

SKF developed its own perspectives in the scorecard. The original ideas came from Kaplan & Norton's model, but were changed to suit the organisation's purposes. In this process four perspectives, fit for SKF's situation, were created: The Employee, Process, Customer and Shareholder perspectives. These four perspectives offered SKF the balance needed between stakeholders and also between long-term and short-term objectives.
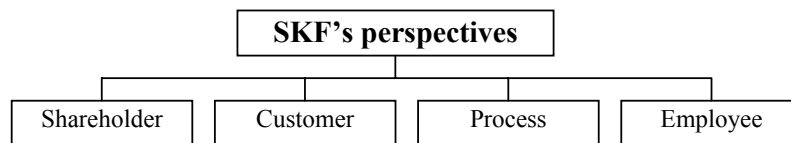

Figure 5.1: SKF's Balanced Scorecard

One of the main advantages discovered with the Balanced Scorecard was the ability to communicate the strategic messages during SKF's expanding phase. The management felt that a positive force developed in the company, where everybody strives towards the common goals – for

example to increase SKF's market share. Also, the organisation was stimulated in a positive way and the strategy was successful up to the point where there was a battle with prices in the market. Additionally, the Balanced Scorecard was able to include several important aspects of SKF's operations, such as the quality work, where the budget earlier had failed. The management felt that the scorecard resulted in a better picture of what was important in the company.

One of the main disadvantages with the Balanced Scorecard was that they initially used too many goals in the different perspectives and thereby did not reach the increased focus the management was after. However, SKF reduced the number of goals and later attained the balance sought. Another problem stems from one of the perspectives. The employee perspective turned out to be very hard to develop concrete measures for. It was also hard for the administrative units to develop their scorecard since they had no actual revenue or costs. Finally, SKF had a hard time using the Balanced Scorecard in the situation where the company had to turn the negative trend in 1998.

When asked to describe what knowledge management means for SKF, our respondents say it is several things. It is about knowing what kind of knowledge the organisation possesses, and to know what implicit knowledge the organisation has built. SKF has a need to organise and cultivate the knowledge the organisation possesses and to gain experience from projects and visible processes. The "wheel" should not be "re-invented" every time a new process is started, but employees should have the possibility to learn from previous experience. SKF is currently working with knowledge management in several parts of the organisation, but have no group project or company-wide processes in this area at the moment. For example, efforts are being made to create a social network throughout the organisation, supported by an IT-structure that can facilitate this. The work with knowledge management stems from the parts of the organisation that have the most need for it. However, according to our respondents the

management has an understanding for the knowledge management-issues, even though they have no explicit company policy for it.

The knowledge management that SKF practises differs somewhat between the users, but leadership reviews, competence mapping and job descriptions are widely used throughout the company. The knowledge management work in the different divisions is also supported through a Learning Centre if they need help with different issues. In addition, SKF works with IT to facilitate communication in the company. The company is working with databases to a certain extent in different areas, but our respondents are careful to point out that this is only a tool for helping communication in the company, and is more information management. SKF has a department in Netherlands, called Engineering Research Centre, where a database has been created in co-operation with customers. The database is quite advanced and closes in on what SKF calls knowledge management. Our respondents are not sure if this could be achieved in other parts of the organisation or even if it is desirable.

One of the advantages that SKF sees with knowledge management is that it helps create value for the company, for example by reducing project-time by re-using knowledge and thereby being able to offer products to the customers that have high value at low cost. It could thereby help SKF to create a competitive advantage. One of the difficulties with knowledge management is being able to measure knowledge and to make it concrete. Another problem is creating a culture where people share knowledge, because today knowledge is power for the employee. Our respondents at SKF also see difficulties in starting knowledge management work on a company group level, since the management does not want to push ideas on the user and thereby create a negative attitude towards the process.

SKF does not explicitly have knowledge management measures in the Balanced Scorecard in the units that still use it today, and did not have it when the entire company worked with it either. However, the management

felt that the process that occurs when developing the scorecard and when revising the goals and measures created processes in line with double-loop learning. SKF felt that these processes were part of the knowledge development processes and agreed that this could be labelled as knowledge management.

5.3 KAPPAHL

KappAhl is a Swedish clothing company that was founded in Göteborg in 1953, and has thereby been in the business for almost 46 years. Today KappAhl is 100% owned by Kooperativa Detaljhandelsgruppen AB, a group of companies that is part of Kooperativa Förbundet (the Swedish Cooperative Wholesale Society). KappAhl operates in five countries: Sweden, Norway, Finland, Denmark and Poland. At the end of 1998 the company had 199 stores altogether in these countries and the total sales were 2 750 MSEK (VAT excluded). The expectations for 1999 are that KappAhl will continue to grow and open 10 new stores. KappAhl's vision is to be "…the best service-company in the business", which the management means is to have the highest number of satisfied customers. The business concept is to sell high-quality clothes at low prices to ordinary people. The company's three main business areas are "Ladieswear", "Menswear" and "Childrenswear".

To be able to live up to the goals, KappAhl has got an organisation with its own designers, purchasers, production technicians and so on. The organisation is decentralised with few levels and clearly defined responsibilities for all individuals. KappAhl has been very successful in its efforts and continues to take market shares, despite increasing competition. During 1998 KappAhl also got the Swedish marketing price "Advertising Effectiveness Award", due to high correlation between the company's advertisements and its increasing profitability.

KappAhl is a company that is well aware of the importance of a strong corporate culture and corporate soul. The corporate culture rests on the

following seven cornerstones: a clear corporate profile, a business-minded approach, efficient working methods, proactive management, honest relationships, innovative creativity and personal responsibility. These cornerstones will ensure that KappAhl can retain its flexibility and embrace change. They will also serve as guidance for how to behave in different situations and give the room needed for both individuals and the organisation to grow, mature and develop.

KappAhl started discussing a Balanced Scorecard in 1995 when a new C.E.O., Thommy Nilsson, took over. He had the mission from the board to cut overhead costs, since KappAhl at that time had experienced great losses. The new C.E.O. presented the Balanced Scorecard as a tool to drive change and the first version was developed during spring 1996. In this process an extended managerial group at KappAhl, with representatives from different departments, was involved. Consultants from Cepro led the work, but it was KappAhl that decided how the scorecard should look, which perspectives should be used and so on. The original Balanced Scorecard model from Kaplan & Norton was used as a model since, at that time, there were very few real life models that could be used for reference. From the beginning this model was considered a bit inappropriate to the situation at KappAhl, since they started the process by trying to use the scorecard in its original version without much customisation to KappAhl's specific situation. The model was also regarded as a bit too hierarchical and hard to communicate to the whole organisation.

KappAhl's first Balanced Scorecard had four perspectives; financial, customer (called external attractiveness), internal business processes (called internal efficiency) and development, but since spring 1998 there is also an employee perspective. In order to keep the scorecard alive and to reach participation among all employees, KappAhl tries to involve people at all levels in the scorecard development process. Much responsibility is given to the different groups and departments to decide which measures are relevant.
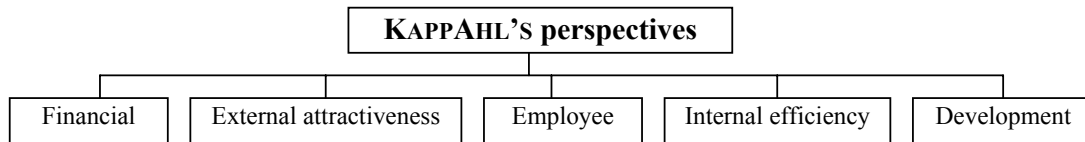
KAPPAHL'S perspectives				
Financial	External attractiveness	Employee	Internal efficiency	Development

Figure 5.2: *KappAhl's Balanced Scorecard*

The reasons why KappAhl has chosen to continue working with the Balanced Scorecard are the following:

- BSC leads the organisation towards vision and goals.
- BSC offers different values and then measures those in money.
- BSC focuses on essentials.
- BSC creates participation and commitment.
- BSC makes it possible, at an early stage, to see and act towards factors that later will affect the income statement and the balance sheet.

Still, there are also problems with the Balanced Scorecard that KappAhl is facing. Sometimes it is experienced more as a burden than as a support tool in daily work, since it might be rather time-consuming. Another problem is that the Balanced Scorecard can be a new concept used to hide an old type of leadership. The Balanced scorecard then serves as a new framework that looks good, but the measures used are the same as before the scorecard was implemented, and accordingly there is no new way of working.

Knowledge management is a strategic issue at KappAhl since the management believes that the employees and their knowledge are crucial for the company's future success and survival. Hence, the concept knowledge management at KappAhl is rather wide. The human learning function is responsible for continuous competence development among the employees. The point of departure for training and education is the corporate culture's seven cornerstones mentioned earlier and the HR-philosophy. The HR-philosophy includes the following HR-processes:

- To attract and retain the right employees.
- To create working places with good and pleasant atmospheres.

- To develop the organisation.
- To develop the right competence.
- To lead well.
- To phase-out and settle employees in a good way.

Much focus is placed on leadership development, since good leadership at all levels is considered to be an important key to success. Good leaders lead to satisfied employees, which in turn gives satisfied customers.

KappAhl has also got an Intranet that is used to fasten the information flow within the company and to make more information accessible to a larger number of employees.

KappAhl's Balanced Scorecard includes measures that aim to control different aspects of knowledge management, such as their index for satisfied employees. Since the very beginning, when their scorecard was first developed, the knowledge management issues have been part of the discussions. First, concerned functions in the company have decided upon which things are important in the area. Second, different kinds of measures that are relevant to KappAhl's specific situation have been constructed. This means that traditional measures, such as employee turnover, are not implemented in the scorecard just because they are easy to measure.

KappAhl's solution for many of the aspects that are complicated to measure directly is to use different indexes, and then compare the indexes over time. For example, the actual result from training efforts is sometimes measured with diagnostic tests, but it is also compared to change in attitudes among the employees and to the costs of the training. Still, KappAhl admits that there are problems finding relevant measures for everything. They believe, though, that the most important thing is not always putting an exact figure on everything, but to put focus on the specific activity.

5.4 ERNST & YOUNG

Ernst & Young call themselves a knowledge organisation, where they are divided into four areas of competence: Auditing, Tax & law, Management Consulting and Corporate Finance. They changed into the new organisation in 1997 in order to better meet customer demands and to increase competitiveness. The aim is to create an organisation that is both complete and specialised. They have a slogan that sums this up: *From thought to finish*.

In this thesis, we are going to focus on the Management Consulting (MC) division, mainly because they have the best internal company knowledge working with the Balanced Scorecard and knowledge management. They both sell the concept Balanced Scorecard, and work with Balanced Scorecard and knowledge management internally.

 According to Ernst & Young's annual report, MC is one of the biggest and fastest growing management consultants in the world. The organisation is adapted to a complex market and possesses knowledge to help both middle and large sized, global companies. They are currently divided into five areas of expertise: Strategy, Process/Organisation, Financial consultation, IT and Middle Market Consulting. They are members of Ernst & Young Global Client Consulting, which is the international organisation in the company aiming to help global clients in their work.

The work with Balanced Scorecard in Ernst & Young MC can be traced back to 1992, when Kaplan & Norton presented their first articles in the Harvard Business Review. There were scattered discussions in the company, and different individuals discussed whether the Balanced Scorecard could be a suitable product for Ernst & Young MC. At that time it was not as homogenous as it is today, so the work with the Balanced Scorecard did not break-through until 1994, when Ernst & Young MC took up the Balanced Scorecard as a product. After a while, people in the company tried to apply the Balanced Scorecard to their own work units and started to use it internally. It fitted well with the performance evaluations

(called Performance Management – PM) all consultants have to go through at least annually, and the ideas got a wider use. Eventually, the Balanced Scorecard ideas were used by management to evaluate and control the business, and from about 1996 the Balanced Scorecard has been used internally as well as a product. Today, Ernst & Young as a whole is implementing the scorecard in other business areas with the goal of creating a company-wide scorecard. Ernst & Young thereby differs from most companies since the implementation process originally was more of a bottom-up rather than top-down process.

One of the main reasons for originally trying the Balanced Scorecard internally was to get to know more about the product they sold to customers. Eventually it turned out to be an excellent tool for including important activities in the management control process. The Kaplan & Norton perspectives originally used have been changed to meet the specific demands of Ernst & Young MC's organisation. There are currently five perspectives named: Financial, Process quality, Employee, Customer, Innovation and growth. They have been developed over time, originating in the first attempts to create own scorecards and through discussions in the company have been established as the perspectives needed to create a balance between important measures for MC.
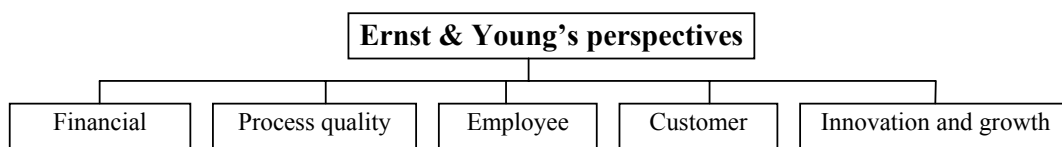
Fig 5.3: *Ernst & Young MC's Balanced Scorecard.*

Ernst & Young MC thinks that one of the main advantages with the Balanced Scorecard is the way it is aimed at future performance and long-term commitments. The consultants emphasise the help they get from the Balanced Scorecard in how they distribute their work. Previously, they often felt an implicit pressure to bill the customer for 100% of their time - otherwise they would not feel efficient. With the Balanced Scorecard, they

can see their work in a more future-oriented perspective, where they see that they will have to perform other activities to be able to meet long-term goals. A potential problem with the Balanced Scorecard is that it might take too much time to measure and follow-up goals. This is also connected with the potential overload of measures. Ernst & Young MC claims that it is important to be clear about what they measure and why to avoid these problems.

To be able to make use of the possibilities that the business provides, Ernst & Young started with new work routines a few years ago. One thing that they focused on is the work with knowledge management – which they specify as knowledge sharing throughout the organisation, both nationally and internationally. The purpose is to enhance the employees' knowledge and thereby be able to provide the best possible services for the customer. In Ernst & Young MC, knowledge management work aims at making processes more efficient – for example through knowledge sharing – to make the organisation more competitive. One of the main purposes with knowledge management is to reduce the time spent in different processes.

At the moment, knowledge management in Ernst & Young MC is divided into seven areas: Strategy, Infrastructure, Content, Services, Relationships, Processes and Culture & Behaviour. Knowledge management is a strategic issue in Ernst & Young and the management consulting division is leading the progress. The C.E.O. explains in the annual report that knowledge management is essential for a company in Ernst & Young's business, where the company lives of its own knowledge and depends on knowledge growth to be able to stay competitive. For example, MC has tried to create practical tools for the infrastructure where they have several databases linked together. Here, the user should both add information and conclusions from their own projects according to a certain template as well as use the database to retrieve knowledge collected through other projects. As in many other areas of knowledge management, they emphasise the importance of these processes to be user driven. The users should, as much as

possible, drive this process on their own by recognising the benefits that they get from it.

One of the main goals for knowledge management work is, as already stated, to make processes more efficient. By making the processes more efficient, our respondent explains how Ernst & Young can benefit in three ways. The first is to make the selling process more efficient. If you can access other consultants' knowledge or information, it is easier to create a better offer and thereby to claim the deal before competitors. Second, the project itself could be of higher quality, faster and thereby more efficient if the consultants working on the project are well educated and have access to social networks and databases to be able to use the organisation's already retrieved knowledge. This leads us to the third aspect, where new methods are developed. To shorten the time from when someone develops a more efficient method in a project until this knowledge is spread throughout the organisation, different knowledge management methods can help speed up the process. Problems with knowledge management include the difficulty to accurately measure and control these processes. Our respondent expresses how difficult it can be to set qualitative goals that really measure what they try to focus. Often the measures risks being quantitative by nature and thereby do not measure the qualities they seek to measure. For example, how should they control the quality of the information stored in the databases? Further, they say that it is difficult to evaluate knowledge management in the turbulence that always exists in a company. It is very hard to prove that performance enhancement can be derived from knowledge management activities since the direct link to the financial numbers is hard to prove mathematically.

Ernst & Young MC has no goals for what they call knowledge manage-ment in their Balanced Scorecard. However, in their employee perspective they have measures for employee development, which is a knowledge management method according to the theory. They also express that they believe that knowledge management methods will affect the outcome of

their internal process goals and should be considered when trying to establish the cause of potential changes.

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6 ANALYSIS

– Knowledge management in the three case companies

6.1 KNOWLEDGE MANAGEMENT MODEL

The two schools within knowledge management – management of information and management of people – many times aim to fulfil the same type of purpose, but work with different methods to reach it. This has also caused us, as authors of this thesis, some trouble when discussing and searching for information in the field. Finally we decided not to "choose side" and instead include both knowledge management schools in our model. By the compiled model we wish to illustrate how we look upon knowledge management, namely as a more comprehensive concept that includes both the management of information track and the management of people track, and also points out the importance of measuring and controlling performance in the area.
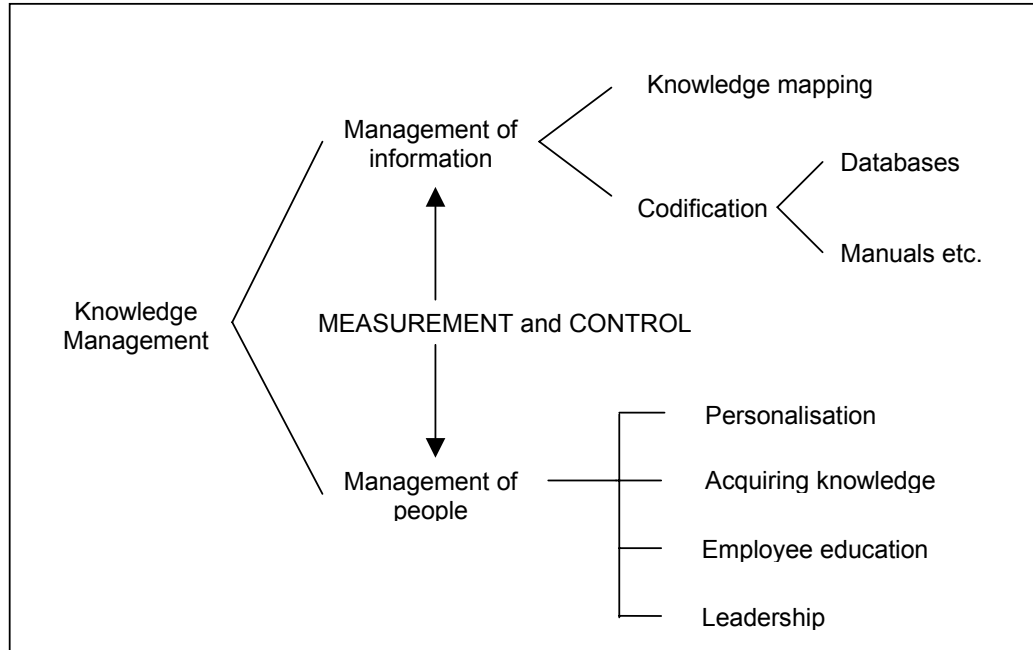

Figure 6.1: Knowledge Management Methods, Source: Own

The main purpose with this simplified model is to show a way of organising concepts and components in the knowledge management area. As previously mentioned, the management of information and management of people schools basically have the same purpose, but work with different methods. All methods performed have to be followed-up and this is usually done through different measures in a performance measurement system.

6.2 STRUCTURE OF ANALYSIS

Since our research question aims at understanding whether the Balanced Scorecard can be used as a tool for knowledge management, our point of departure for analysis is the knowledge management methods presented in the theory chapter and in our model above:

Management of information

- Knowledge mapping
- Codification (databases and manuals)

Management of people

- Personalisation
- Acquiring knowledge
- Employee education
- Leadership

As discussed above, we compiled a model where we want to show how the knowledge management concepts and methods relate to each other. Our analysis will be conducted in two steps in the following two chapters. This chapter will focus on the empirical part of our research and analyse the three companies' use of the knowledge management methods just presented. In the second part – described in the next chapter – we will discuss whether the different knowledge management methods can be integrated in the Balanced Scorecard and how the methods and their outcomes can be measured.

Starting with the empirical research, this chapter aims at analysing how the three companies use the methods. Since all methods have been presented in the theory chapter we divide the analysis of each method in three sections.

First, we show how the three companies in our research work with the individual method. Second, we discuss interesting differences between the companies work with the method and potential reasons for these differences. Third, we discuss how the three companies perceive that the method creates value in their companies and our interpretation of their answers. So, following in this chapter are the six methods that are going to be discussed in terms of:

- Presentation of each company's work with the method
- Company differences
- Perceived value

The order in which we present the different methods is the one presented above, which is why we start out with the management of information methods and end with the management of people methods.

6.3 MANAGEMENT OF INFORMATION

6.3.1 Knowledge mapping

6.3.1.1 SKF
As we have interpreted the answers from the three investigated companies, only SKF works actively with knowledge mapping as a knowledge management method. The company has something that is called leadership review, used for establishing the employee's knowledge in order to create a plan for how the individual should develop in the future. A form of knowledge gap is established for the individual in order to see how he or she should be educated or trained to fit into the changing organisation and close the knowledge gap. The different units in the company have the opportunity to work with competence mapping on a unit level if they can, but it is up to the individual unit to pursue this by themselves. SKF also use

competence mapping for making job-descriptions that are helpful when new units are set up in different parts of the world or when units grow and need help in order to expand. In order to know what kind of competence and knowledge the individual unit needs from their employees, the unit can get help from the Learning Centre that collect the information from the competence mapping.

6.3.1.2 KappAhl

Even though KappAhl measures their employees' knowledge they do not work with knowledge mapping as one of their knowledge management methods as we have described the method in the theory chapter. KappAhl tends to measure the employee knowledge related to the employee education method and leadership method that we will go into later in this chapter.

6.3.1.3 Ernst & Young MC

Like KappAhl, Ernst & Young does not map knowledge as SKF does. Ernst & Young MC does not mention this method as one of the knowledge management methods that the company pursues.

6.3.1.4 Company differences

It is hard to compare the three companies since Ernst & Young MC and KappAhl do not talk about knowledge mapping as one of their knowledge management methods. We think that the reason why SKF is more focused in this area than the other two can be that they have been a global company for a long time and that they are replicating similar efforts in different parts of the world. Thereby, they have created a need for job-descriptions and competence maps to be able to control their need for knowledge worldwide. KappAhl is expanding globally, and might face increasing demand for competence mapping as they are forced to replicate efforts all over the world. Ernst & Young is indeed a global company, but each country manages itself through its partners, which is why the company is not global in the same meaning as the others.

6.3.1.5 Perceived value

SKF contends that knowledge mapping might not have a value in itself for the company, but establishing knowledge gaps has. SKF needs to know what kind of knowledge the company lacks to be able to follow their strategy, since it is no use developing a strategy that cannot be followed. The tough competition in today's environment will quickly sort out the companies that do not measure up to the competition. After establishing the knowledge gaps, SKF can hopefully also see what actions they need to take in order to fill them. As we see it, systematically mapping, categorising and benchmarking organisational knowledge can not only help knowledge become more accessible throughout an organisation, but by using a knowledge map to prioritise and focus its learning experiences, an organisation can create greater leverage for its learning efforts. So, even if it is hard to put a monetary value on competence mapping it is evident that it might be essential for future survival.

6.3.2 Codification

In the three companies interviewed, two of them explained that the codification process is one of the more important methods when it comes to knowledge management. However, they have slightly different approaches for how to solve this. As specified earlier, this category includes both the creation of databases and the writing of manuals.

6.3.2.1 SKF

SKF is mainly working with a database that does not contain the full knowledge of previous projects and solutions. However, the information is intended for the purpose of facilitating personal contacts. The information in the database is short descriptions of projects and the names of employees that hold the information about them. Thereby, the employees needing knowledge about a certain project or process could get hold of a person with knowledge, wherever in the global organisation he or she is. This process also facilitates one of the other activities we address later - the personalisation method. There is one part of SKF, though, that have developed the databases more like they have done at Ernst & Young MC,

which we describe below. At the Engineering Research Centre in the Netherlands, the databases have been refined to include information and conclusions from projects. The databases have been developed together with the customers and they have tried to create interactivity between SKF and their customers to be able to learn from each other. However, as of now, this type of database only exists in that part of SKF.

Another way of converting the employees' knowledge into company knowledge, that SKF has exercised for a long time, is the use of manuals on different levels of the company - mainly on the factory floor. To create manuals for the workers reduces the need to "re-invent the wheel" several times. The knowledge collected by workers performing a routine task is collected and compiled into a manual that shows how to perform the job in the best possible way. This work has similarities to the "scientific management" introduced by Taylor in the 1930's and also to the more recent work with databases, only without the fancy equipment.

6.3.2.2 KappAhl

KappAhl, compared to the other two companies, engages very little in this type of knowledge conversion. KappAhl works more with other activities, as we will discuss later on. However, our respondents mention during our interview how it would be of interest for them to codify more of the individuals' knowledge, especially in positions where a single employee inhabits much of the total knowledge in the organisation in a specific area. To be less vulnerable to employees leaving the company, they express a desire to capture more of the individuals' knowledge in the company. They would prefer if this was done on the intranet, where everyone would have access to the knowledge from their computer.

6.3.2.3 Ernst & Young MC

At Ernst & Young MC, they try to convert the employees' knowledge by using databases. As we perceived it, this is their main method for working with knowledge management, and it is supported by the education of employees in how important this tool is for knowledge sharing in the

company. When working with the database, the consultants should continually add relevant information about the project they are working with to a database accessible from Ernst & Young MC's computers through an intranet. When the project is finished, the main conclusions and experiences should be articulated in the database in a certain way. The employees have to use a template when they enter the information, so that others easily can find the information through a search-engine on their intranet. This is of course extra work for the individual consultant, but they are supposed to benefit from the database themselves when they start working with their next project. Then, they can search on the intranet themselves and find useful information that could help them in their next project. This way, Ernst & Young MC thinks that the consultants will see the benefits of this tool and thereby increase the usage of the database, which in turn will increase the knowledge controlled by the company.

6.3.2.4 Company differences

As we have seen, when it comes to the method we call codification in the information management part of knowledge management, the three companies work differently. Since they operate in very different settings, they are forced to work in different ways.

If we start with the manuals on SKF's factory-floor, they have a long history. Since some of the jobs are of a repetitive nature, the manual is a very efficient tool for gathering knowledge about the process. In the other two companies, we do not have the same kind of settings. In KappAhl, the employees in the store are doing jobs of a repetitive nature, but since no customer is alike, there is no way of creating a manual for how to deal with all kinds of situations. Instead they try to use other ways of spreading knowledge, which will be discussed in the latter part of this chapter.

At Ernst & Young MC, the consultants are faced with complex situations for every customer or project. Since no customer is alike, the complexity might seem infinite. However, very often there are aspects in many projects that are similar and can be compared and learned from, so by sharing

knowledge and lessons learned, the consultants can help each other. For example, if a consultant is supposed to do a SWOT-analysis for a company, it will most certainly be unique, but if someone before him performed another SWOT-analysis at another company in the same business and displayed experiences and lessons learned in the company database, it is very likely that it will help the other consultant. This type of work is not only present in Ernst & Young MC. At SKF and KappAhl, middle and top managers can have the same type of complex problems that sometimes others in the same company have dealt with earlier. However, the reason why the use of databases is more common in Ernst & Young MC than in the other two is probably that since many consultants work with the same products but in different companies – a type of repetitive-complexity characterises the organisation's work. In this environment, a database seems like the proper method to facilitate knowledge sharing and making the work more efficient.

In KappAhl, where there are not several people doing the same type of jobs at the same time, knowledge conversion of this kind would not have the same impact. Since the person that dealt with the issues before you was your predecessor, the information gathered by him will probably be old and not relevant for the current situation's demands. Thereby, to set up a database will probably create more costs than benefits. However, as KappAhl increases its international presence, the demands for "lessons learned" from successful establishments and other vital processes will increase. At the store-level, KappAhl is already performing the same activities in several places. With the expansion, KappAhl is also performing other activities like logistics and marketing etc. that must be locally connected to get the results they want. This will increase the need for already collected company knowledge in this area in order to avoid making the same mistakes twice or to benefit from available smart solutions.

6.3.2.5 Perceived value

Both SKF and Ernst & Young MC explain that it is very valuable to facilitate codification of the company knowledge since they are able to continue developing the employees and create new value for the companies. However, both companies also express two main problems with this method. The first is how to convert the knowledge – what instruments to use. As already described SKF chose part database and part manuals, while Ernst & Young MC's main instrument is the database. The second problem that the companies presented is getting the people who control the knowledge in the first place to want to share it. Our respondents believe that the person holding the knowledge does not wish to share it since it at the moment gives him the respect and admiration that he or she wants.

There are additional advantages that are valuable for the three companies. SKF and Ernst & Young MC say that they get increased efficiency in many processes. If we start with the most basic and repetitive processes taking place in SKF's factories, knowledge conversion has similarities to Taylor's scientific management. We all know how his ideas revolutionised efficiency in many industries and they all saw profits rise. By sharing the knowledge about the process in for example manuals, SKF avoid making the same mistake twice, and a new worker can easily be informed about the process that has been developed by so many people before him. Thereby, the new worker can start off where others before him left off, which of course is very valuable for SKF since the new worker can quickly be assimilated into the process. If the new worker changes the process to make it even more efficient, it should be added to the manual so that workers in other factories and the worker's replacement could benefit from it. We believe that any company will increase their profitability compared to not working with knowledge management in this way. The internal efficiency will rise and make the company more competitive and thereby able to get new customers and provide better value for money. In global companies, like SKF, with factories producing similar products in different parts of the

world, a small increase in efficiency in one plant can easily be spread to the others and potentially create substantial savings for the company.

Even if the knowledge management work with databases in SKF and Ernst & Young MC seems very different from the manuals on the factory-floor, the idea behind it is very much the same. Ernst & Young MC expresses that they are a company that lives of knowledge, and it is extremely important for them to find a way to share knowledge within the company so that every consultant does not have to make the same mistakes and can benefit from knowledge already created by others. By creating a knowledge pool, the company will be able to possess more knowledge than the individual consultant will ever be able to retrieve during his or her lifetime work with Ernst & Young MC.

Another important effect when working with the conversion of knowledge is the one KappAhl expressed, namely the reduction in vulnerability that occurs when the company no longer is dependent on a single or a few employees for certain knowledge. They say it is not possible to reduce a human being's knowledge to information in a manual or in a database, but there is some knowledge that can be collected and organised that can help the company when losing an employee. There is a range here from the creative professions where only minor parts of the implicit knowledge a person holds can be translated into company knowledge, and to the factory worker where much of the knowledge of the process can be articulated. By working with this type of knowledge management, the vulnerability of the company will decrease to a certain level, as KappAhl predicted, and this could in turn affect how others perceive the company.

6.4 MANAGEMENT OF PEOPLE

6.4.1 Personalisation

In the three companies studied, not all talk explicitly about a personalisation strategy as a knowledge management method, but it is clear that social networks of various kinds and personal contacts play an important role in all of them.

6.4.1.1 SKF

SKF has, as earlier mentioned, a database that supports the social networking by giving the names of the persons who have worked in the projects, wherever in the global organisation he or she might be. They point out that the IT-infrastructure is only a tool that is supposed to facilitate communication in the company, and that it should rather be seen as information management. There are also certain parts of SKF, where networks are created in co-operation with customers, in order to learn from customers too. The social networking is the most important, since they think it is a good way of organising, cultivating and keeping knowledge within the organisation. By sharing and discussing knowledge, it is diffused in the organisation and made an asset for the whole organisation, not only for certain individuals. The main problem in this work is to make the employees – on all levels – want to share the knowledge they have.

6.4.1.2 KappAhl

KappAhl does not mention social networking, or personalisation, as a specific part of their knowledge management work. They stress, though, the importance of having a strong and healthy corporate culture, where communication is one important part. One of the cornerstones in the corporate culture is "honest relationships", which are supposed to be achieved by giving everyone the opportunity to contribute to good solutions. Also, information about different issues shall be provided quickly, honestly and openly to all relevant parties at the same time. KappAhl has got an Intranet that is used to fasten the information flow within the

company and to make more information accessible to a larger number of employees. This Intranet could probably easily be developed into a database where it would be possible to find the right persons to get knowledge from in different situations, even though this is not done today.

6.4.1.3 Ernst & Young MC

The respondents at Ernst & Young MC are the ones that stress the codification of knowledge the most, but they also emphasise the importance of personal contacts and relationships in the organisation. IT should be nothing but a tool to acquire better knowledge. Therefore, in their knowledge database, there are also names of persons to contact for further information about different issues if needed. According to our respondents it is usually better to get hold of the person that has developed the knowledge and have an intelligent discussion, than to rely solely on information found in the database. Ernst & Young MC's knowledge management work is, as mentioned earlier, divided into seven areas, among which "relationships" is one. This clearly indicates how important the personal contacts are. Besides the possibility of reaching persons by means of the database, personal meetings are arranged for discussions about lessons learned, exchange of experiences and so on. Efforts are made to build up networks between employees on different levels, but also between Ernst & Young MC and their suppliers and competitors.

6.4.1.4 Company differences

As we have described above, all three companies, in different ways, encourage their employees to share knowledge with each other in one-on-one situations. We believe that the reason their strategies for accomplishing this differ, is that their businesses are so disparate. Ernst & Young MC sells consultant services that, in many cases, have a lot of characteristics in common. Therefore, it is easier for them to formulate methods and tools that are possible to use in various situations. As we see it, this is why they stress the codification of knowledge more than the personalisation. The personalisation should still be important, though, since it is usually in these networking processes that new knowledge is developed.

At SKF the management has an aim to build up large social networks that will serve as communication channels for the knowledge the company develops and possesses. The personal contacts are to be supported by IT-tools, such as the company Intranet. Here, it is not always possible to find methods or tools that can be used in several situations, but knowledge that has been reached in one part of the company, for example in a research department, could be useful in another project somewhere else in the company and should therefore be spread. We think that the biggest challenge here for SKF is to create an atmosphere in the company where people have a willingness to share their knowledge with others, as well as to take advantage of others' knowledge. To make knowledge sharing more natural, and to create networks, SKF let people change working tasks and positions with each other. Also, networks are created through the cross-functional quality improvement teams (QIT's) that consist of people from different parts of the company. Other person-to-person knowledge sharing activities are conferences, videoconferences, and various discussion forums.

We are of the opinion that personalisation is an important knowledge management method at KappAhl, even though they do not use these words. We believe that one reason for this is that a lot of the work in the company is of a creative nature, such as design of the clothes. The knowledge that is connected to the creative work has a lot to do with subtle intuition and instinctive feeling, and is probably of a tacit nature. Accordingly, it is hard to codify, but can be communicated during discussions and brainstorming. Another reason for the importance of personalisation we believe is that the shops, with a lot of contact with customers, play a great role for the company success. Knowledge about how to handle different customers and give service in the best possible way is hard to teach by means of manuals or the like, but easier to transfer from person-to-person.

6.4.1.5 Perceived value

Personal contacts and networks are hard to value in economic terms. Still, the companies stress how important this is for spreading knowledge in the organisation, and thereby for creating value. The discussion about the value of these types of knowledge management activities looks about the same as the discussion regarding the value of codification of knowledge. Both strategies are important for diffusing knowledge in an organisation, but they have different means for it.

One thing that has been mentioned by all companies is how important personal contacts are for transferring tacit knowledge between individuals. As mentioned earlier, we think that tacit knowledge cannot be written down or put in a database, and therefore there is a risk that these valuable knowledge assets disappear if there is a lack of person-to person contacts in the organisation.

Also, the social networks are very valuable for the creation of new knowledge in the companies, since it is usually in discussions and contacts with other people that new ideas come up.

6.4.2 Acquiring knowledge

All three companies studied work with acquiring knowledge in different ways, but they do not label it a knowledge management method.

6.4.2.1 SKF

As mentioned earlier, SKF performs competence mapping in order to establish knowledge gaps in the organisation. The knowledge gap is used to indicate the knowledge need that they have. SKF fills these gaps by internal development of knowledge as well as through acquiring knowledge, mainly by recruiting. Other aspects of acquiring knowledge, such as purchasing patents and companies are probably conducted in the company, but are not expressed as knowledge management related in the interviews or in the material. SKF also works with job-rotation in the company, which they

consider as a sort of internal transfer of knowledge where one unit is acquiring knowledge from another.

6.4.2.2 KappAhl

Our respondents at KappAhl explain that they work with knowledge acquisition mainly by recruiting new employees with certain knowledge or who have potential to develop in the company. They state that KappAhl's goal is to work effectively and structured with the organisation's knowledge supply, as well as to provide opportunities for the employees to develop in order to ensure a sufficient competence level. When selecting and recruiting new employees, KappAhl puts a lot of effort into trying to establish the individual's potential for development.

6.4.2.3 Ernst & Young MC

Ernst & Young MC like the others has a need for acquiring knowledge, for example through recruiting. The company is working hard with recruiting and aims at being perceived as the most attractive employer in their business areas. However, our respondents do not label this activity a knowledge management method. Instead, their focus in knowledge management is on the internal development of knowledge and the knowledge sharing within the organisation.

6.4.2.4 Company differences

The three companies emphasise knowledge acquisition differently. It is hard to describe the differences between them since they do not label their knowledge acquisition as a knowledge management method. It seems as if this method is of more importance in SKF than in the other two companies. SKF works with knowledge acquisition to close knowledge gaps, and we believe that purchasing knowledge and then trying to distribute it by knowledge sharing can be a quick solution for adopting new knowledge. Buying the knowledge and then spreading it in the organisation might be necessary to be able to face the increasing competition quickly. If the company has to develop the knowledge internally all the time, there is a risk of missing new innovations that make the competitors outperform

them. The reason why we believe that this is more essential for SKF than in the other two companies is that SKF produces products that are not as diversified and thereby have to compete with products that the customers perceive as similar.

6.4.2.5 Perceived value
The three companies all say that the value of acquiring knowledge is naturally very hard to measure in monetary terms. If the company can purchase knowledge that leads to a competitive advantage it is certainly very valuable. Other times there might not be a visible change in the company's competitiveness and the knowledge is used with other factors to change processes in the company. In those cases, it is impossible to establish a value and derive a certain performance enhancement from the increased knowledge. The companies also express that it is very hard to know if they really acquire the knowledge that they are aiming for and that it thereby is impossible to establish a value from the acquisition.

6.4.3 Employee education and Leadership
The Employee education method and the Leadership method proved to have many aspects in common, both in how the companies perceive them and how they are valued. Therefore we decided to present the analysis of these activities under the same heading.

6.4.3.1 SKF
When SKF talks about education and learning, they label it human resource management and not knowledge management. The aspects important to their view of knowledge management are to educate employees and leaders in the importance and meaning of knowledge management itself. They have no company-wide learning in what knowledge management is and what it can do for SKF yet, but they are discussing what kind of education is needed on different management levels down to the single employee. The education should then be focused on handling applications at the employee level, while at the top management level the focus is on changing culture, the concepts and the consequences. In this package, SKF also

wants to include leadership training so that the leaders can guide and train their own employees.

6.4.3.2 KappAhl

KappAhl is the company in our research that has the strongest bindings between knowledge management and the methods described. The company works a lot with leadership training, employee development and knowledge creation. KappAhl states more explicitly than the two others that it is the individual's knowledge and competence that will be the drivers of KappAhl's competitiveness. They train the leaders to prioritise the employee development as an important issue and try to help train them so that they have the tools to do this. KappAhl also emphasises that the leaders must relate the employee development to the financial performance of the company. KappAhl labels this type of leadership "proactive management". They follow-up the activities, for example by performing diagnostic tests before and after the training, indicating whether there has been an increase in knowledge. The reasons why these issues are a bigger part of knowledge management in KappAhl than in the other two companies might be the way KappAhl is organised. They have a unit called Human Learning where many of the knowledge management issues are dealt with. Since the unit is knowledgeable in human learning, the knowledge management activities naturally get a learning focus.

6.4.3.3 Ernst & Young MC

At Ernst & Young MC, like in SKF, much of the education and training is not explicitly a knowledge management issue but more of a human resource issue. Therefore – in respect to knowledge management – the education, development and leadership training that is important, is that which is related to educating the company in knowledge sharing. Therefore, in Ernst & Young MC, the education and training as a knowledge management aspect, for the leaders as well as for the employees, aims at creating a culture and behaviour suited to a company with knowledge sharing ambitions.

6.4.3.4 Company differences

A striking difference between KappAhl and the other two companies in these types of issues is the emphasis on the individual in KappAhl. The key word in KappAhl, as we perceive it, is commitment. KappAhl seems to aim at creating a relationship between the individual and the company that focuses on mutual benefits. KappAhl works hard at ensuring that the employees have the opportunity to develop when they work in the company and they trust their employees to reinvest their new knowledge back in the company. Both the employer and the employee benefit from this, and it creates a climate where loyalty thrives.

SKF and Ernst & Young MC focus on the need to educate managers and employees in the knowledge management methods. Ernst & Young MC then uses the training to change behaviour and educate their employees in the advantages of knowledge management to facilitate a user driven process. KappAhl has a slightly different approach. Since they focus on the individual employee and the commitment between the employee and the company, they present education, learning and leadership training as knowledge management activities.

Why there are differences between the three companies, and why Ernst & Young MC and SKF focus more on company knowledge, while KappAhl focus on individual knowledge is hard to explain. The leaders and the top management also affect the way they work in the organisations, depending on their leadership style and what they believe is important. We also believe that the people originally assigned to work with knowledge management issues shape the ideas and establish basic beliefs for what knowledge management is made of.

6.4.3.5 Perceived value

All three companies claimed that it is almost impossible to value employee education and leadership in monetary numbers. However, they were also unified in the belief that it is very important for any company to invest in the employees' knowledge. The three companies mean that the positive

reaction in the profit section in the income statement will be evident in the long run. However, KappAhl voiced an opinion that we perceived in the other two companies as well, and that is that the investments in leadership and employee education not necessarily automatically lead to competitive advantage, but are sometimes necessary to maintain the company's competitive position.

SKF also mentioned a related problem, and that is the difficulty to know in what areas to educate the employees. The reason is that it is almost impossible to foresee which type of knowledge that will be required in the future. In addition, new types of products and companies, managed by new generations have also increased the demand for new leadership styles that were almost impossible to foresee just a few years ago.

6.5 SUMMARY

In the final part of this chapter, we want to summarise the differences in knowledge management efforts between the three companies in our research. As we have presented in this analysis, we discovered that the companies mix knowledge management methods both from the management of information school and the management of people school. However, the three companies focus their efforts on one or two of the methods and use one or two more a little less. In this last part we will, by using our model, try to show what knowledge management methods the companies use in practice today. It will therefore be a summary of what we have dealt with earlier in this chapter.

6.5.1 SKF
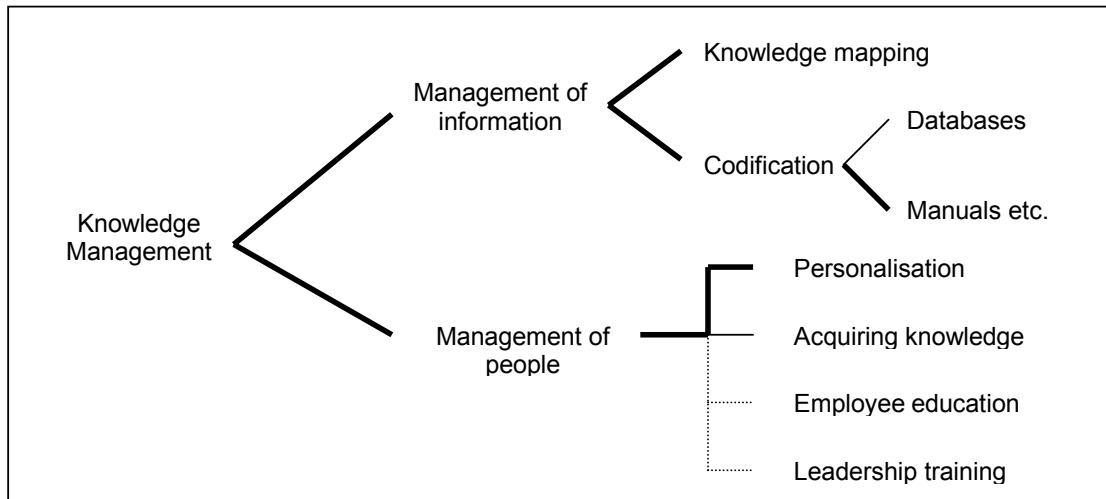
SKF works with both of the two knowledge management schools. We interpret their answers as if they work mainly with personalisation, knowledge mapping and manuals. We believe that the focus in these methods can be derived from SKF's large, global organisation, which demands that the management have control over the employees' collective knowledge. The reason for the focus on manuals is probably derived from the fact that they still have repetitive work in their factories.

6.5.2 KappAhl
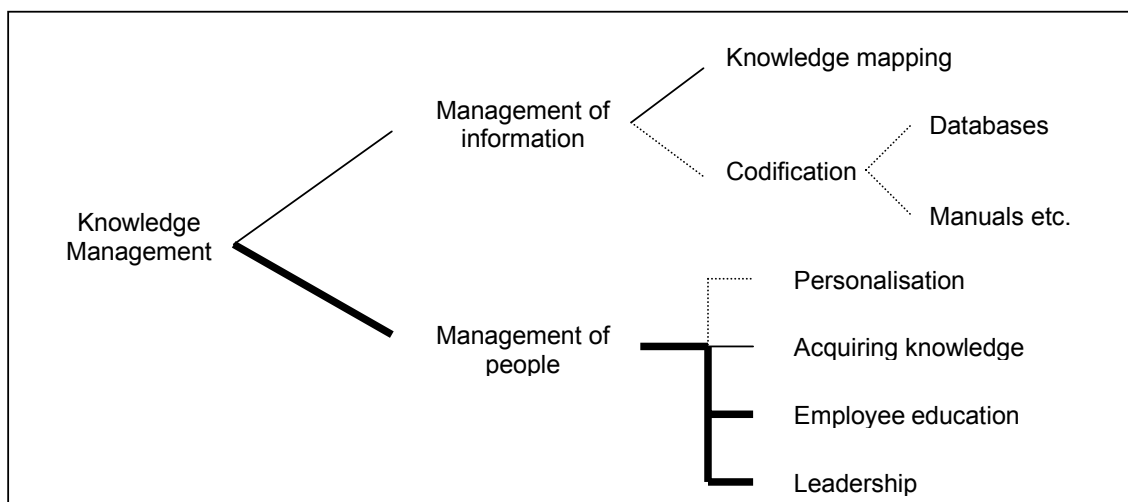
KappAhl focuses mainly on the management of people school. The company works hard with the leadership and employee education methods and tries to create a situation of mutual understanding and trust between the company and the employees. We believe that this focus can be derived from the fact that KappAhl has a strong culture, which can be traced back to the time when the company was much smaller. We further believe that there is a possibility that the need to convert individual knowledge into company knowledge will increase as the company expands internationally.

6.5.3 Ernst & Young MC
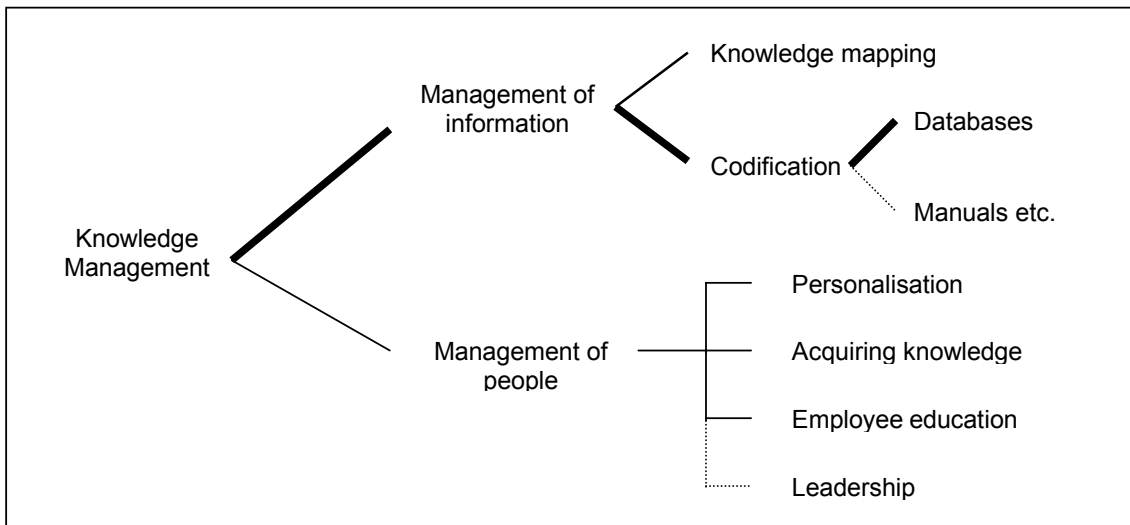
Ernst & Young MC has focused on the management of information school. They work to convert as much individual knowledge as possible into the database that all consultants can access. They also try to facilitate this conversion with a culture that supports knowledge sharing through the database. We believe that the reason for the focus in building databases stems from the very complex, but in some aspects still repetitive, nature of the projects that the consultants work with.

6.5.4 Company and business differences

We believe that the differences between the three companies could be derived from both the industry they operate in, as well as the characteristics of each individual company. We think that the companies are naturally influenced by the business they work in, but we also believe that other

companies in the same business do not necessarily use the same knowledge management methods. Factors like size, age and company values also influence the methods companies choose.

In this case, we would like to point out two methods that we believe can be derived from the business the companies are in. The first is SKF's use of manuals to codify knowledge. This method can be traced far back in time in every business that has repetitive jobs and needs to develop a best way of doing the job. However, as SKF tends to automate these jobs over time, this method will lose its importance. In the near future, we believe that the industry sector will reduce the repetitive jobs to a minimum.

The second method we want to point out as business related is the work at Ernst & Young MC to codify knowledge in databases. In the management consulting business, where most projects are complex, the need for learning from previous projects to reduce the need to "invent the wheel" again is substantial. Even if the previous projects are not of exactly the same type, they can help the consultant with background information and smart new methods that have been developed by others. However, we also believe that this method works best with issues that are not very complex. When the complexity increases, consultant firms might need to increase the use of the personalisation method to be able to facilitate knowledge sharing. As one of our respondents said: there is no substitute for an intelligent conversation.

So, in short, we see that it is very hard to separate the factors influencing the use of knowledge management methods in a company. Many times they can be derived from business characteristics, but they might as well be derived from company specifics. We believe that the company has become what it is today by the influence of many factors, the business it operates being one of them, but should in our opinion develop the knowledge management methods that fit in with all the other parts in the specific company.

In the next chapter, we will continue the analysis by conducting a more general analysis of the knowledge management methods – focused on the possibility to include the methods in a Balanced Scorecard and how to measure them.

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7 ANALYSIS

– Integrating Knowledge Management in the Balanced Scorecard

7.1 INTRODUCTION

In this chapter we will focus our attention on how the different knowledge management methods can fit in a Balanced Scorecard. Our point of departure is the same structure as the one used in the previous chapter, which means that we start the analysis with the management of information methods and end with the management of people methods. Each method will be analysed in three parts. First, we start by discussing aspects of the knowledge management methods that we think should be emphasised, even though some of these have been mentioned in the previous chapter. Second, we will describe in which perspective in the Balanced Scorecard we believe the different methods can be implemented. We will also refer to the individual scorecards constructed by our research companies. Finally, we aim to suggest how to measure the different methods and discuss potential problems attached to these measures.

Therefore, under each method we will present a short discussion and two sub-headlines:

- Implementation in the Balanced Scorecard
- Measures

Last in this chapter, we will summarise the findings before answering the research question in the conclusion chapter.

7.2 MANAGEMENT OF INFORMATION

7.2.1 Knowledge mapping

We agree with SKF that knowledge mapping is important for finding knowledge gaps in the company, to be able to see what actions have to be taken to fill them. Moreover, we believe that knowledge mapping can make existing knowledge in the company more accessible to everybody, by

making it explicit in the organisation. A knowledge map can also be a good help for the management when deciding where to concentrate other knowledge management efforts.

7.2.1.1 Implementation in the Balanced Scorecard

We believe that knowledge mapping should be dealt with in the learning and growth perspective in the original scorecard. In this perspective, measures that deal with employee capabilities are mixed with related measures that control the employee motivation and empowerment. When mapping the employee knowledge and establishing knowledge gaps, we believe that companies have a future oriented purpose – to ensure the competitiveness of the company in the future. Thereby, the learning and growth perspective with its long-term orientation should be the proper perspective for dealing with these issues.

Since the three companies have established an employee perspective, they indicate that they also focus on the individual. We believe that if the companies want to focus on the individual aspect of knowledge mapping, for example to be able to help the individuals to close their own knowledge gaps to be able to fit in a changing organisation – the employee perspective can be an equally good alternative as the learning and growth perspective. The measures for the individual will then be linked to other measures like employee education, which might provide a more complete picture of individual performance.

7.2.1.2 Measures

Knowledge mapping is in itself of a quantitative character. We believe that the hardest part is to establish a common template for how to map the individuals or the units that are to be measured. There will probably have to be several templates for the different types of workers in a company – one for academics, one for factory workers etc. In order to compare between units and the knowledge needed to pursue the strategy, it is important that everyone in the same category is mapped in the same way. When this is done satisfactorily, the units can get targets or measures of percentage of

total employees mapped to indicate how the units have performed in this area. Another possible measure can be percentage of total employees that have been mapped during the previous year in order to indicate how important it is to keep the knowledge mapping updated.

7.2.2 Codification

The value of knowledge codification can be seen in various ways. If used correctly, the knowledge stored will help the company make all kinds of processes more efficient, which in turn will increase profitability. The customers will also feel that they have the entire organisation's knowledge to support them in their work. This increases the credibility of the consultant, salesperson or whoever it is that interacts with the customer. As a result, more customers will prefer working with a company using knowledge management in this way, especially when competitors do not. The positive effect this will have on the company's financial performance is self-evident.

Another positive aspect of this type of knowledge management work, although harder to estimate in financial numbers, is the effect it will have on the employees. We believe that people that have worked in the company for many years will value the fact that they continuously have new things to learn, easily accessible from their own computer. In addition, it can also have a positive effect on recruiting. New employees can feel they have access to a lot of information and support that can help them provide qualitative work even in their first projects. The downside of this aspect is that there is a risk the employees feel that it will take too much of their precious time. They might perceive the opportunity to search for new information as an implicit demand from the company management and thereby add to the employees' stress. Since the management often also sets explicit rules for how to work with the databases there is an even bigger risk that the employees feel that this is just another way to control them and they thereby might miss the benefits that come with this type of work.

Another positive effect when working with knowledge conversion is the reduction of vulnerability that occurs when the company is no longer dependent on a single or a few employees for certain knowledge. Not all knowledge can be put down in a manual or database, but there is some knowledge – mostly explicit knowledge – that can be collected and organised that can help the company when losing an employee. With a credible knowledge conversion process, we believe that it could affect credit ratings, credit-terms and stock prices positively. From a management and profitability perspective, this derivation clearly motivates the use of knowledge management to reduce company vulnerability.

A common problem that the three companies express relates to the conversion of tacit knowledge. We believe that it is very problematic to deal with tacit knowledge through codification since the individual must put down in writing all the new knowledge on a piece of paper or on a template in the computer. Naturally, all nuances cannot be displayed this way. We believe that to come close to tacit knowledge sharing the companies have to create a setting with a master and an apprentice or an educational environment where there is interaction between the knowledgeable individual and others. In today's companies there is not much time for this type of training, and it takes a lot of effort for companies to pursue it.

7.2.2.1 Implementation in the Balanced Scorecard

If we first start with the original Kaplan & Norton scorecard, we see that activities used to improve internal processes can be situated under the Internal Business Process (IBP) perspective. In this perspective, the company should identify the processes that are most critical for achieving customer and shareholder objectives. If the conversion of knowledge in order to improve internal processes is one of them, it indicates that it fits under the IBP-perspective. The climate that the increased accessibility of information, or company knowledge, can provide in a company can also help in providing the innovative climate that helps create unique competen-

cies and distinctive and sustainable competitive advantage that Hamel & Prahalad (1990) and Kaplan & Norton (1996) talk about.

However, if this activity is seen from another angle, it can just as well fit into the learning and growth perspective. In this perspective, the objectives provide the infrastructure to enable ambitious objectives in the other three perspectives. It is supposed to be the driver for excellent outcomes in these other three. The conversion of knowledge, whether it is creating manuals or ambitious databases, can be seen as just this kind of infrastructure. To further strengthen this view, Kaplan & Norton (1996) claim that their experience in building scorecards across a wide variety of organisations has revealed three principal categories for the learning and growth perspective; employee capabilities, information system capabilities and motivation empowerment and alignment. These three categories all touch the aspects we have discussed concerning the conversion of knowledge, and thereby indicate that it can fall under this perspective.

As we perceive the conversion of knowledge, we believe that it should be dealt with under the learning and growth perspective. However, it depends on what the individual company prioritises. The structure of the Balanced Scorecard in the different companies will create individual differences that must be considered. Therefore, we will briefly describe under which perspective we believe it should be dealt with in the companies we have investigated.

When we look at how the companies have described the methods of converting individual knowledge to company knowledge, we see that a prominent aspect is to increase efficiency. When talking to the companies, we find that they emphasise how this activity increases the internal efficiency of the organisation. Another aspect they point out is the potential for employee development. With these two as the main purposes, we want to discuss how we think this method could fit in the three companies' Balanced Scorecards.

SKF's Balanced Scorecard lacks the learning and growth perspective and they have replaced it with an employee perspective. In this Balanced Scorecard we believe that the Process perspective is the most suitable for incorporating the knowledge conversion process. SKF describes the process perspective by explaining that it is to do "right things right", and they work hard with quality issues. If SKF wants to mainly connect the work with manuals and databases to quality and to increase the efficiency of processes, it fits this perspective correctly.

KappAhl does not currently work much with knowledge conversion. However, their scorecard has three perspectives where this type of work can fit in depending on its purpose. In the development-perspective KappAhl handles competence development, and to fit knowledge conversion into this perspective should be no problem. Other aspects could also fit under the employee and internal efficiency perspectives.

Ernst & Young MC has basically adopted the Kaplan & Norton scorecard, but has added an employee perspective. Depending on what they want to achieve with their database, we believe that the measures mainly should be handled under the perspective they call Growth & Innovation. The reason is as motivated earlier, that this perspective could help build the infrastructure needed for the other (in this case four) perspectives.

7.2.2.2 Measures

After establishing within which perspective we believe the method should be dealt, there is the question of accurate measures. After several interviews with the companies, it is evident that it is not that easy to establish relevant measures. When it comes to the method of converting the individual knowledge into company knowledge, we want to start the discussion with some potential problems.

With an activity like knowledge conversion, it is very hard to measure the qualitative aspects of the activity. The problem is much like the old saying

"you can lead a horse to the water, but you can not force it to drink". If we take the example of the use of databases to illustrate, there are some measures that can be used to measure the quantitative aspect of the activity. The company could set standards of how much information the employees should enter into the databases after every project or determine how much time the employees must spend viewing new material everyday. Authors like Edvinsson & Malone (1997) suggest that companies measure number of PC's / employee and IT expense / employee as indicators of the activity. However, no matter how useful these kinds of measures are for controlling the quantitative aspects, they do not measure what the companies are really after – to create new knowledge.

The quantitative measures are therefore not as useless as one might think at first glance. They are indicators of how this process works, and the potential for it to succeed. Therefore, even if measures like the number of PC's / employee might sound ridiculous, they could indicate how the infrastructure that supports the knowledge conversion is working. Other measures like monitoring each individual's usage of the database, both the input and output, and creating routines for how the individual should present the new knowledge are also quantitative measures that can be indicators even if they do not measure the qualitative aspect. By using these types of measures the company can force the horse to the water and by creating the right environment, it will hopefully drink when it realises it is thirsty. The quantitative measures therefore also have a purpose.

None of the companies we interviewed has developed the measures they need to measure the qualitative aspects of codification, despite much effort. Since it obviously is very hard to find measures for how much or how useful the knowledge a person has got from e. g. a database is, companies have to find other ways to make their employees use the codified knowledge. Both SKF and Ernst & Young talk about a user driven process, which means that it is the users themselves that must want to use the databases for their own benefit. The employees must see the connection

between the need for them to input material in the database and the improved performance they achieve when they use it. If this is possible to achieve, this activity will feed itself. The individuals will see the benefit of converting their knowledge into company knowledge.

7.3 MANAGEMENT OF PEOPLE

7.3.1 Personalisation

One of the valuable effects with personalisation is the possibility to share tacit knowledge. We agree with the companies in our research that this aspect is very important. Compared to the codification of knowledge, we believe that the value of networks and personal contacts is higher when the knowledge that is to be spread is of a more complicated nature. Simple solutions are easy to read about, but if there are intricate problems to be solved, personal contact is more valuable.

Personal contacts and networks are also important in the process of creating new knowledge, which make them extremely valuable for an organisation. In knowledge creation, information in a database or manual can be used, but it is usually in discussions, brainstorming sessions and the like that new ideas see the light of day. Looked upon like this, the personalisation can be seen as even more valuable, since there has to be factual knowledge before it can be codified and stored for others to use.

7.3.1.1 Implementation in the Balanced Scorecard
The personalisation efforts made in the knowledge management field are clearly connected to the learning & growth perspective in the Balanced Scorecard, but could also be placed in the Internal-Business-Process perspective, since the aim of these activities is to make the company's knowledge processes more efficient. The qualitative aspects of personalisation should affect outcome measures like shortened project times etc. but it will be very hard to single out the effect that per-sonalisation causes, since so many other factors also influence the outcome.

We believe that the personalisation should fit into the learning & growth perspective. The three principal categories that are dealt with in this perspective are; Employee capabilities, Information systems capabilities and Motivation, empowerment, and alignment. Even if the personalisation does not specifically fit any of the three categories, it touches all of them. The method can enhance employee capabilities, be a part of the company network – even if the social network is intangible. It also can facilitate increased motivation and empowerment through the appreciation of the individuals' knowledge. If dealt with in the learning and growth perspective, the measures for personalisation will be dealt with together with other measures focusing on the employees and that are future oriented.

Since the three companies have changed their scorecards somewhat, we want to mention the ways for them to implement personalisation in their own Balanced Scorecards. Ernst & Young MC has a scorecard that is quite close to the original but with an additional employee perspective. As described earlier, personalisation aims at involving the entire company and creating social networks that facilitate knowledge sharing and at the same time make its processes more efficient. Thereby, we believe that Ernst & Young MC should incorporate the method under the growth and innovation perspective or the process quality perspective and not in the employee perspective, which focuses on the individual. The same principle applies to SKF where their process perspective ought to be the proper perspective for dealing with personalisation. KappAhl should, for the same reasons, include the method in the internal efficiency perspective or the development perspective; depending on which aspects they want to focus.

7.3.1.2 Measures

We believe that the qualitative measures used depend on the purpose the individual company has for working with personalisation. One common aspect that the companies express is making their internal processes more efficient and facilitating knowledge sharing. To make processes more efficient is often already pursued in the different companies by measuring project time and customer satisfaction. Thereby the companies also have to

include personalisation as a factor to consider when trying to establish why changes occur in for example the measure "project time".

The more quantitative measures that can be used in the learning and growth perspective risk being perceived as silly if their purpose is not properly explained. For example, a measure of the number of employees involved in different teams in relation to the total number of employees or the employees' attendance at conferences or lessons learned evaluations might be perceived as missing their target, since the management can never know the quality of these activities. We agree with this notion, but we also believe that if the management explains that the purpose of these measures is to facilitate knowledge sharing in the company the employees will know what the management thinks is important. These measures can then push employees to more actively involve themselves in the social networks of the organisation.

7.3.2 Acquiring knowledge

We agree with SKF that stresses the importance of acquiring knowledge in order to fill knowledge gaps that suddenly appear or to stay in touch with competitors that have developed a competitive advantage through new knowledge. However, we also think that there is a risk that the decision to acquire knowledge, instead of developing it internally, can damage the employee solidarity and the company culture.

7.3.2.1 Implementation in the Balanced Scorecard

Larger acquisitions of knowledge, like purchasing a company, are strategic issues and relevant only to the top management and the board. These actions are not included in the Balanced Scorecard since they are only present at the absolute top of the company. Acquisitions through recruiting, however, can more easily be included in the Balanced Scorecard if it is considered a critical success factor. In the original scorecard, Kaplan & Norton (1996) state that the learning and growth perspective should handle employee capabilities. We believe that the acquisition of new knowledge is a part of the companies' fight to continually improve in order to maintain

or improve their relative position and these issues should be dealt with in the learning and growth perspective.

If we apply our suggestions to the companies that we have investigated, we believe they can use the knowledge acquisitions through recruiting measures either in the learning & growth perspective or in the employee perspective they have constructed. If they want more focus on the individuals the measures certainly fit in the employee perspective, but we believe that the focus here should be more on the organisation and that the knowledge acquisitions thereby should be included in the learning and growth perspective instead.

7.3.2.2 Measures
As with other measures of knowledge management, it is hard to measure the qualitative aspect. In this activity, the companies should measure if they are getting the right knowledge and if it is sufficient. However, this is impossible to measure accurately. Therefore, they have to use measures that put the activity into focus but which are of a more quantitative nature. Examples of measures that can be used are the number of newly employed and the number of newly employed in relation to the total number of employees. If certain knowledge is wanted the measures can for example be the number of newly employed with specialist knowledge in relation to the total number of newly employed or the total number of employees.

7.3.3 Employee education and Leadership

Just as the three companies have mentioned, we believe that it is very valuable for a company to invest in the employees' knowledge. When investing in employee education and developing the company leadership companies can create a strong force in the company and the company itself or its management will come out very positive in the eyes of the employees. This is of course very important and can ensure strong employee support even in difficult situations.

The employee education and development can be hard to value in economic terms. However, since it is the employees that develop the production process, develop future products and represent the company in the eyes of others etc. – how can you not see the value of cultivating the employees and their knowledge? The companies express that it is valuable that the new knowledge is integrated with existing knowledge in order to develop unique insights and create even more valuable knowledge. As we see it, more knowledgeable employees means increased competitiveness in the long run provided that the company can afford to pay for them. This is a cost/benefit analysis that every company must make.

The companies also expressed that leadership training is very valuable, provided it is of high quality. Through the managers and leaders, the company reaches and influences the entire organisation. If the managers are trained right they can be role models for others, communicate essential messages to the employees and make sure that the entire organisation strives in the same direction. By training the management throughout the company in critical issues like knowledge management, they get a consistent view of the company, which can affect the culture in the company. Again, putting a certain value to the management or leadership training is very hard. It depends on the quality of the training etc, but should prove as important as employee training for future competitiveness.

7.3.3.1 Implementation in the Balanced Scorecard
Employee education and leadership can fit properly into the Balanced Scorecard if they are considered critical success factors. In Kaplan & Norton's original scorecard, the learning and growth perspective is the perspective under which these activities should fall. This perspective provides the long-term focus that enables managers to sustain investments to enhance the capabilities of their people; so working with the Balanced Scorecard makes these types of investments come naturally. The work with these activities has already been described by Kaplan & Norton (1996), even though they do not label it knowledge management activities. In our opinion these activities are included in two of three categories dealt with in

the learning and growth perspective, namely; Employee capabilities and Motivation, empowerment and alignment.

Kaplan & Norton (1996) describe in the category Employee capabilities that employee training is important to get skilled employees that can question the present processes and suggest improvements. In order for the employees to adapt to new strategies it is important that they are capable of taking on new responsibilities, and this is why it is important that both employees and leaders are trained to deal with the new situations that can occur.

Since the three companies investigated have changed their perspectives somewhat, we will look into where they can fit in employee education and leadership in their respective Balanced Scorecards.

SKF has, as the others, an employee perspective where the methods discussed could fit in. If they considered the follow-up of employee education and leadership as critical success factors, they would most certainly fit in best in this perspective. The employee perspective could seem a little narrow for these types of methods, but with the present scorecard, it is where they fit best. The methods do aim at the employees, even though they may be managers, and in the end they should, as all the non-financial measures in a scorecard, result in better financial performance.

Ernst & Young MC has a growth and innovation perspective and an employee perspective that can share the measures of the method depending on what purpose they have. The employee education should probably fall under the employee perspective, since it is more directed towards the employees and their development. If Ernst & Young MC worked with competence mapping and at a company level worked to close possible knowledge gaps, we believe that it could fall under the growth and innovation perspective, since the methods then would be more aimed at the company development than at the individual employee. The leadership

training could fall under any of the two perspectives depending on the main purpose for including it in the scorecard.

KappAhl, like Ernst & Young MC, has an employee and a development perspective. Again, depending on how the perspectives are defined in the individual company, both methods can fall under any of these two perspectives. We believe that the basic division should probably be on the same basis as in the Ernst & Young case. If KappAhl focuses on the individual they could fit employee education and leadership in the employee perspective. However, if a company feel that the methods have a stronger connection to the company as a whole, they could naturally fit in the development perspective instead. For example, in the original Balanced Scorecard, the activities aimed at motivation, empowerment and alignment, which KappAhl works a lot with, are dealt with in the learning and growth perspective. However, depending on whether KappAhl wants to tie these activities to the individual or to the company as a whole, they can be dealt with either in the employee or in the development perspective.

7.3.3.2 Measures

Measuring the employee education and leadership training is both easy and hard. As we have discussed earlier, the quantitative aspects can more easily be measured while the qualitative measures are harder to find the right measures for.

Measures concerning education and employee development are common in many companies today and are nothing new. In companies using the Balanced Scorecard, the measures often fit in the learning and growth perspective, but as in the three companies in this research they can also fit in the employee perspective if they have one. Once again we can divide the measures into qualitative and quantitative. The quantitative measures indicate how much time and money are spent on education and they can for example be very important for controlling costs attached to employee development. Examples of quantitative measures are education time/total work time, knowledge development expense/employee, time in training etc.

The qualitative measures, on the other hand, indicate how much the employees have learned. This can be measured by tests or questionnaires where the employees themselves get to evaluate the education. If the evaluations are done right, companies can compare development of the employee answers over time.

Measures for leadership training are similar to those of employee education. The quantitative measures will focus on time and cost in order to make sure that the training is taking place. The quantitative measures can focus on test results or evaluations of the training by both the leaders themselves and by their co-workers.

Measures of the described knowledge management methods can also be outcome measures. It can be harder to establish exactly how the outcomes have changed and that it is the specified activities that have resulted in a change in these measures, but we believe that they are very valuable to measure. One way to measure this is through the use of surveys in order to measure the outcome of the activities. The surveys will then include questions that help indicate the employees' satisfaction with certain training or their leaders' job. The surveys can also indicate employee satisfaction in many other areas and should therefore be designed so they can indicate where improvements are needed. The employee satisfaction is also a root to two other important outcome measures that should also be measured here: the employee retention and employee productivity. If the employees are satisfied, they will stay in the company and the knowledge will thereby be retained in the company as well. The most common measure used here is employee turnover. Other measures that can be used, depending on what is pursued in the individual company, are measures indicating the age distribution in the company, as well as the age distribution among leaders. These measures can indicate if the company is a working place that the employees like and stay with for a longer period of time, and also when it is time to take on some "new blood" – or more experienced persons – into the organisation.

Another important measure, derived from these activities is, as mentioned, employee productivity. From a management perspective the employee and leadership training should not only result in happy employees, but should also result in increased employee productivity. The goal is to relate the output produced by employees to the number of employees used to produce that output. As with the other measures, it is important to follow results over time, in order to track changes. As we discussed before, it is hard to exactly derive the change in employee training to an increase in employee productivity, but these measures can together with others indicate how effective the training is. What measures to use depends on what is important for the individual company, but examples of productivity measures are revenue/employee, profitability/employee and profitability linked to certain objectives.

7.4 SUMMARY

The perspective in the Balanced Scorecard that we find most suitable for implementing knowledge management measures is the learning and growth perspective and, in some cases, the internal business process perspective. The reason why the learning and growth perspective is appropriate is that it aims at measuring efforts made concerning the company infrastructure – people, systems, and procedures. These are drivers for achieving future success in the other three perspectives, and are clearly pointed out as important parts in knowledge management work – both in theory and by the companies studied. To make the firms' knowledge sharing processes more efficient – for example through codification or personalisation – is another aspect of knowledge management. This is the reason why the internal business process perspective could be suitable for some measures connected to knowledge management, such as shortened "project time".

In our research, all three studied companies have set up another perspective – an employee perspective – where most knowledge management measures are handled. Our conclusion regarding this is that the companies, in

practice, have a need to point out how important the knowledge tied to each employee, and the value it can create, is. This could also be seen as an indication of that the Balanced Scorecard, in its original form, is not focusing the employee enough for Swedish companies.

When investigating different types of knowledge management measures to use in the scorecard, we discovered that it is hard to establish accurate measures. The measures used for managing knowledge are associated with the same problems as other non-financial measures. As we described in the theory chapter, it is impossible to accumulate the measures through mathematical models and it is also very hard to know what a change in a knowledge management measure will result in financially. It is impossible to test the drivers of a measure in a situation where all other conditions remain unchanged. These are the main reasons why some aspects of knowledge management are harder to fit into the Balanced Scorecard. It is not really the characteristics of the Balanced Scorecard, but the difficulties to develop relevant qualitative measures, that limit the appropriateness of the Balanced Scorecard as a knowledge management tool.

8 CONCLUSIONS AND REFLECTIONS

In this chapter, we are going to answer our research question and discuss issues related to it. We will further elucidate other aspects that can be derived from our analysis and that we believe are important.

After having studied theories in the field and adjacent areas, we are even more convinced than before that knowledge management work is essential for the companies' future success and competitiveness. By now, the once so fuzzy concept – knowledge management – is in several aspects much clearer to us, but still in other aspects not that easy to explain. However, we discovered that the concept knowledge management is a very extensive topic that is not possible to summarise in a master thesis. Several authors have described in big literary volumes how they perceive knowledge management, but the different authors have very different opinions of what knowledge management consists of. To answer our research question – if the Balanced Scorecard can be used as a tool for managing knowledge – will therefore be very difficult if we try to incorporate all ideas about knowledge management.

However, we set out to investigate how the companies work with knowledge management in practice and the topic thereby was narrowed substantially. When interviewing the three companies, it turned out that they, in practice, only use a few methods to manage knowledge. Hence, the topic was much narrower in practice. The companies in the study seem to work with three or four activities that they label knowledge management and they usually focus their efforts on one or two of them. So, when comparing theory and practice, we have seen that the companies have picked up some elements of the vast knowledge management concept and that they are striving to incorporate this into their way of working.

The answer to our research question must therefore be twofold. If we consider the entire concept of knowledge management, we see that it contains so many ideas and theories that it is foolish to think that a single tool could incorporate all of them and make them suitable for management control. However, if the three companies in our research turned to us and asked us if we think that they could use their Balanced Scorecard as a tool for managing knowledge in their respective company, and use it as a control tool, the answer to our research question is yes. However, we want to further discuss some aspects that we believe are important to consider.

As we have mentioned earlier, a classic saying in management control is "what gets measured gets done". Our aim has been to try to explain if and how it is possible to measure the outcome of different knowledge management methods, and how to put these measures into a Balanced Scorecard. If the company management sees that these activities are essential for future profitability, they must make sure they are pursued in the organisation. Then, they must measure the knowledge management activities and their outcomes. We are still agreeing to the basics of the old saying, but we have come to realise that, opposite to what we initially thought, many times it is not how you measure that is important – just to put the important issues into focus will get you half the way. If the employees see that knowledge management activities are included in the strategy, that the management has emphasised the work with it and if they are being measured on their performance in the activity – they will also know that these activities are considered important. So, by including knowledge management measures in the Balanced Scorecard, the company management communicates that it takes these issues seriously. We think that if the companies do not include it, the message will be just the opposite – these are activities that come second hand to those in the scorecard.

As previously discussed, we believe that the knowledge management methods and their measures should fit properly in the learning and growth perspective in the Balanced Scorecard. The measures can be of the same

type as the ones we suggested in the analysis, but it is important that they are designed to fit the individual organisation's demands. The same principle also applies to the scorecard. Companies should adapt it to their way of working, just as the three companies in our research have done.

Another issue worth pointing out is how to work with knowledge management activities in a Balanced Scorecard. As with all other activities and measures in a Balanced Scorecard, companies should use moderation. It is important not to create too many measures and thereby lose the focus that the Balanced Scorecard can provide. We believe that a company therefore should not include all kinds of knowledge management measures in their Balanced Scorecard even if they fit there. Instead, the company should establish which knowledge management activity is a critical success factor or that supports one, and use that one. This way, it will be communicated in a natural way together with the other measures in the scorecard and it will remain in focus. The scorecard will also be more accurate if constructed with moderation, and it will communicate a clear strategy for the company in the future.

But, the Balanced Scorecard is not the complete solution for managing knowledge, especially not if the company tries to incorporate the larger concept of knowledge management. A company that implements a scorecard does not automatically manage knowledge. The Balanced Scorecard can help facilitate it to a certain level, but knowledge management needs more substance than a few measures in a scorecard. We believe that companies that want to work seriously with knowledge management have to establish teams that have the opportunity to influence strategic decisions and should therefore be located just under the group management. In the three companies in our research, they work with teams, departments or knowledge managers that are responsible for the development of knowledge management work.

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In spite of all the positive effects that a Balanced Scorecard can have in an organisation regarding knowledge management, we do see potential hindrances to its effectiveness. As has been described in the theory chapter, one important aspect of knowledge management is the learning in the organisation. Learning organisations are said to be supported by, among other things, decentralisation of reasoning power and decision-making. Here we see a possible contradiction for using a Balanced Scorecard as a knowledge management tool, since the Balanced Scorecard is usually a tool that is implemented from the top. If the scorecard presented for the organisation is too complex and aims to get into details with everything, it might restrict the freedom and self-determination needed for learning to take place. On the other hand, if the management develops the scorecard with help from employees at all levels in the organisation from the beginning, it might very well be a good tool for a learning organisation. Also, if there is a continuous development of the Balanced Scorecard where the employees are involved, it will probably help the organisation to continue learning.

Using the ideas about organisational learning, it is also important that there is room for questioning the norms and values that are the basis for the organisation's actions. This can be accomplished, and the desired double-loop learning achieved, if the scorecard is developed out in the organisation and not solely by the company management. If the employees are involved in the development work of the scorecard, and are given room for "trial and error", there are big chances that this will result in an efficient learning process. Then the factual development process of the Balanced Scorecard will be an efficient way of managing knowledge. The problem is that a Balanced Scorecard, in most cases, is more or less ready when it is to be implemented in the organisation.

Another potential problem that our respondents have stressed, is that sharing knowledge as well as learning new knowledge has a lot to do with the employees' motivation. Not all employees, or managers for that matter, are interested in sharing with others special knowledge that gives power

and prestige in the organisation. Others see a problem in spending time on the sometimes time-consuming knowledge management activities. As we mentioned in the theory chapter, there has to be a willingness to communicate knowledge. Employees on all levels have to feel that a win-win situation is created if knowledge is made a common asset in the organisation.

It should also, again, be stressed that there are no cure-all solutions for how to manage knowledge in all kinds of organisations. The industry that the company operates in, as well as the characteristics of the individual company, influences how knowledge is managed in the best possible way, and thereby how it can be measured. Our research also indicates that all kinds of companies in different businesses seem to have a need for a tool to manage knowledge.

So in short – yes, we believe that the Balanced Scorecard in some aspects can help managing knowledge. Our recommendations for companies that work with the Balanced Scorecard and that want to manage knowledge are the following. First, they should develop a team that is responsible for establishing the knowledge management needs of the company and set up goals for their knowledge management work. Thereafter they should discuss which kind of knowledge management methods are suitable for the company and in the business they are in. It is not necessary to choose between the methods from either management of information or management of people, it is possible to apply ideas from both schools, if they think that the organisation will need different methods to reach the knowledge management goals. Then, we recommend that the companies develop their own measures that are applicable to the way they measure performance today. It is important to back up the measures with information about the purpose and goals of knowledge management so that the employees will understand what the company is really striving for. Finally, we want to emphasise that it is important to recognise that the methods are just the tools you use to reach the objectives, and that they are

not goals in themselves. It is what the companies want to achieve with their knowledge management work that is most important.

9 FURTHER RESEARCH

9.1 INTRODUCTION

In this chapter, we are going to present issues that we found very interesting but that did not relate explicitly to our research question. Here, we discuss issues that we believe are comprehensive enough to represent topics of their own in separate theses and suggest them for further research.

9.2 CULTURE

As our research progressed, we could see that the companies emphasised the company culture as a tool to facilitate knowledge management. First, we wanted to include the culture aspect in our thesis, but we soon realised that we could not go into detail regarding this activity, since the area is so widespread that it would take a completely different thesis to sort it out. However, since all companies talked about the importance of a common culture – even though they did not always spell it out – we feel that it is important that we touch the subject here and explain why it is suitable that further research can complete our research in this area.

When we discuss culture we mean a system with common norms, values and beliefs that develop in an organisation when its members interact with each other and the outside world. For a deeper understanding of what organisational culture is, see Bang (1994). What we explicitly mean when we talk about culture here is the work in the companies towards creating an environment where knowledge sharing, knowledge development etc. are seen as important and desirable processes by the company and its employees.

To attach a monetary value to the culture in a company is futile. Since it is part of what the company is, it is also impossible to say that the company culture creates a value of a certain magnitude. The discussion of whether it is valuable for an organisation to establish a company culture that facilitates knowledge management must go back to the value of knowledge

management. Since the three companies in our research believe that knowledge management creates value for them, establishing a culture that facilitates this can help the outcome. The culture permeates the company and it will make it easier for all employees to understand what is expected of them and what they should and should not do.

The companies expressed another valuable aspect of creating a culture that facilitates knowledge sharing, namely that it may reduce the problem with employees holding vital knowledge and information. As previously discussed, in many companies it is common that employees withhold knowledge just because it gives them the respect and power that they strive for. It will most certainly be very valuable for a company to get these individuals to share their information so that the entire organisation can benefit from it. If the company can create a culture where the employees that share their knowledge get respect, recognition and are rewarded for it, the employees will be motivated to share knowledge with others, and the company has the chance to release much of the knowledge presently tied to individuals. This will certainly affect the competitiveness of the company positively and will thereby be very valuable.

So, during our research we have come to understand that the organisational culture is an important factor for the success of knowledge management activities. We believe that it would be interesting to know how the organisational culture affects knowledge management in a company or common features in organisational culture in companies working with knowledge management, and we thereby suggest these topics as further studies.

9.3 BALANCED SCORECARD – A TOOL FOR SUCCESSFUL COMPANIES?

When interviewing the respondents in the three companies, we discovered an interesting opinion that the companies have about the Balanced Scorecard. They were all more or less of the opinion that the scorecard was a tool that is more suitable when the company experience good times and is in an

expanding phase. SKF was the company that voiced this opinion the most. They felt that the scorecard had been an excellent tool when they pursued an expansion strategy aiming to take market shares from their competitors. However, when the company finally faced increasing competition and decreasing profits that turned into losses, they had a hard time getting the company to adjust to the new reality. Eventually, the new C.E.O. changed the focus in the company by replacing the Balanced Scorecard with more traditional managerial control, focused on cutting costs and improving profitability. The reason for replacing the scorecard was not that they lost their faith in it, just that they believed that a return to the traditional control would change performance much faster.

KappAhl and Ernst & Young MC did actually express opinions in line with SKF's. They mentioned that the financial focus had ruled in the companies for so long that there almost exist two parallel performance measurement systems. The traditional system that is more focused on accounting and financial numbers was used to compare figures over time, and when they wanted to compare the outcome in the Balanced Scorecard, they compared it to the old system. In both KappAhl and Ernst & Young they did not deny that they believed that it would be easier to return to the traditional system in a time of crisis.

We think that this is a very interesting topic that should be the subject of further research. We did not have the opportunity to further explore the area in our thesis, but we suggest that another thesis could investigate the subject of whether the Balanced Scorecard should be seen as a tool specialised for certain situations and in that case - which ones. The thesis should also try to establish why the companies perceive it as a tool for good times, since Kaplan & Norton obviously think that it is a tool for all situations.

9.4 KNOWLEDGE MANAGEMENT AND MOTIVATION

Another subject that would be interesting to explore further is the field of motivation, related to knowledge sharing. Since most of the ideas in the knowledge management area build on the condition that people in the organisation actually want to share what they know or come up with, motivation becomes crucial. A thesis on knowledge management and motivation would probably be of a more psychological character than ours, and therefore we think this subject is more suitable for further studies in behavioural science than studies regarding management control.

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APPENDIX 1

QUESTIONS REGARDING BALANCED SCORECARD

Explain the background to why you started using the Balanced Scorecard method in your company.

Where did you get the idea to use a Balanced Scorecard?

Which were the motives for choosing the Balanced Scorecard as a management tool?

How did you go about implementing the scorecard in your organization?

How did your work, for example policies and routines, change?

Do you combine the Scorecard with more traditional ways of management control?

How and why?

What perspectives have you decided to use in your Balanced Scorecard?

Why did you choose these perspectives?

Who were involved in the process when determining the scorecard perspectives for your company?

How do you link the other perspectives to the financial perspective?

Which are the critical success-factors in your organization?

How did you reach the conclusion that the factors chosen are the most critical for company success?

How did you manage to derive relevant measures from the success-factors?

How did you set the goals and objectives linked to the different perspectives?

How do you link the critical success-factors to financial measures, key-ratios or objectives?

Why / Why not?

How do you keep the Balanced Scorecard updated and relevant?

How do you motivate the employees to work with the Balanced Scorecard?

Do you know the concept knowledge management?

What does knowledge management mean to you in your organization?

Who is responsible for the knowledge management issues in your company?

Is knowledge management a strategic issue in your organization? Should it be? Why?

Are there any measures or goals in your Balanced Scorecard linked to knowledge management-issues? Which?

Do you see any difficulties with knowledge management work?

What do you perceive as the main advantages of using a Balanced Scorecard?

Do you see any disadvantages with the Balanced Scorecard method?

Do you think that you have reached a balance between the perspectives in the scorecard?

Motivate why or why not.

Is there something you wish that your Balanced Scorecard contained that it does not contain today?

If yes, what is it, and how is this dealt with today?

QUESTIONS ABOUT KNOWLEDGE MANAGEMENT

How do you, in your organization, define the concept knowledge management?

Who is responsible for your knowledge management-issues today? Why?

How do you work with knowledge management? What steps are taken in the knowledge management area etc. (For example seminars, quality-work, databases, and incentives)

How do you measure performance in your knowledge management work?
Are there any problems surrounding performance measures in the
knowledge management work?
Which are these? Why?

Do you have any order of priority for the knowledge management-issues?
Which issues are most important in your organization? Why?
Are any of the knowledge management-issues of a strategic nature and do
they represent an important top-management issue?
Are these issues represented in your company's Balanced Scorecard?
Why / why not?
Has your work with knowledge management issues changed since the
Balanced Scorecard was introduced in your organization?
Do you think that you have reached a balance between the different
perspectives in your scorecard?
Do you see any problems, linking the knowledge management to classic
management and business control?

Do you perceive any particular opportunities/possibilities with knowledge
management work?
What are the main difficulties when working with knowledge
management?

How would you prefer to work with knowledge management-issues in your
company?
Do you feel that it is important to translate knowledge management values
into numbers? Why?
Do you think that your company handles knowledge management work
differently than others? If yes, why?