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Intelligent Remuneration in the Knowledge Economy

Managing Intellectual Capital

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Summary

Title:	Intelligent remuneration in the knowledge economy
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Problem discussion:	Talented people are recognised as being the most important corporate resource over the next twenty years and a competitive compensation system is an important tool in attracting and retaining talent. Traditional pay systems are recognised as being neither cost effective nor motivating people to do more. Often these systems do not contribute to strategic objectives. This study outlines what constitutes an intelligent remuneration system that will enhance the mind value added by knowledge workers, reward knowledge creation, and contribute to organizational strategies.
Purpose:	To outline some characteristics of an intelligent remuneration system in the knowledge economy.
Method:	Qualitative method, interviews with company executives and with experts.
Conclusion:	This study proposes some aspects of an intelligent remuneration system that may unleash the full potential of the human capital. Companies need to offer their best people a return on invested personal human capital consisting of both tangible and intangible compensations in order to enhance the mind value added.

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1 Introduction

In this chapter the reader will be introduced to the special demands of the knowledge economy and to remuneration management, what it means and why it can be a problem. The chapter begins with a presentation of the background of the study and is then followed by a problem discussion. Thereafter the purpose is presented. A disposition of this thesis is also included.

“Research, experience, and common sense all increasingly point to a direct relationship between a company's financial success and its commitment to management practices that treat people as assets. Yet trends in management practice are actually moving away from these very principles” (Pfeffer & Veiga, 1999 p.37).

1.1 Background

Excessive monetary compensations have been a recurring topic in the daily news flow in recent years. The scandals at Enron and at the insurance-giant Skandia are just some of many that have been discovered. Often these scandals focus on overpaid managers or the attempts to execute new generous bonus system. In an article in the financial newspaper, Dagens Industri (2004-03-22), Metro's CEO Pelle Törnberg defends generous compensation systems, saying that they want to work with people who are a bit greedy and wants to become rich. He also denotes that generous options programs are necessary to attract and recruit the best people. He receives partly support from Marcus Wallenberg, the CEO at Investor, who says that competitive compensation systems are an important factor in attracting the best people (Dagens PS, 2004-01-21).

Compensation systems and bonuses aiming at rewarding managers on the top of the hierarchy may partly be a shortcoming, since rewarding managers on the top of the hierarchy doesn't necessarily mean that core competence and the talent of the company are rewarded (Ridderstråle & Nordström, 2004).

A new economic reality where knowledge is the basis of competition has made the employees more important to the strategic success of a company. The value of organizations and the individuals is today also directly related to their knowledge and intellectual capital (Edvinsson & Bonfour, 2004). In the traditional economy physical assets were the prime resources whilst the most important resource today is knowledge (Starkey, 1996). Sustained competitive advantage and profitability is achieved through

the creation and sharing of knowledge (von Krogh, Nonaka & Aben, 2001). In the traditional perspective knowledge was a formal and systematic part of the company. A more contemporary perspective represented by Nonaka sees knowledge as also being a highly subjective part of the individuals in the organization. This perspective makes managing knowledge as a key asset much harder to accomplish. Even though many companies consider the managing of knowledge as an important corporate resource they struggle with exactly how to encourage and reward knowledge sharing. Improving the efficiency of knowledge work is far more complex than for traditional work and the old tools have become obsolete. Companies competing in the knowledge economy are also in need of continuous knowledge updates to be successful (Nonaka, 1991).

A large study conducted by McKinsey & Co. in 1997 concludes that the most important corporate resource over the next twenty years will be talent and that the war for talent is about to commence. Even if the demand for talent is predicted to go up the supply will go down. The tools for victory in the forthcoming war are finding and attracting the best and the brightest people, and this will probably be costly. People are thought of as being a more mobile asset in the future and they will work where the talent offering is the best. The true source of competitive advantage is based on the people a company attracts. Neither capital nor business strategies are today possible sources of sustained competitive advantages. Capital is today no longer a scarce resource, as it is always accessible for good ideas, and business strategies have become more transparent (Fishman, 1998; Grant 2002).

Some of the means for large companies to win this war is to offer, "greater wealth-creation opportunities for their best people, regardless of age or seniority" and to "compensate these people on the basis of performance" (Fishman, 1998, p. 104). Mayo (2000) points to the fact that even though a company recruits capable people, there is no guarantee that just being employed will lead to the full implementation of that capability in the organization. Intrinsic motivation may for example be one important factor as well as extrinsic factors, structural capital as multiplier of human capital (Edvinsson, personal communication, 9 June, 2005).

The human resources are considered to be the most important part in generating company value in the future and according to a study done by Watson Wyatt (2002) human capital management has a great impact on shareholder return. The study provides six different dimensions that influence the shareholder return; total rewards, collegial – flexible workplace, recruiting and retention, communications integrity, focused HR service technologies and prudent use of resources. According to this study rewards play a significant role in human capital management.

Talented people, competence and knowledge apparently constitute the most important resources in modern companies, but how should the knowledge worker, the asset in these companies, be compensated for the use of their knowledge, skills and brainpower?

Most traditional pay systems are considered neither to be cost effective nor motivating people to do more (Sparroq & Hiltrop, 1994). These systems are also not considered

effective in delivering performance related to key organizational goals (Beardwell, Holden & Claydon, 2004), and Kohn (1993) says that rewards typically undermine the very process they are intended to enhance. Money is often considered to be the prime incentive in organizations as concluded in a study made in the middle of the twentieth century by Herzberg, Mausner and Snyderman (1959). Money alone cannot enhance performance in an organization. Theory of motivational psychology also provides a perspective on the possible negative effect of pecuniary rewards on performance and creativity.

The motivational approach most often used by managers is the reinforcement theory. According to this theoretical approach, what people do is determined by the consequences of their actions. Often money can be used as a reinforcer to obtain the desired behaviour. Research tends to suggest that some reinforcers actually can lead to lower performance. Working for extrinsic motivators, such as monetary rewards and promotions, denies the worker his or her self-determination. In the short run, extrinsic motivators can lead to improved performance but to attain success in the long run the best way to motivate people is to provide opportunities that confirm their feeling of competence and self-determination (Smither, 1998).

1.2 Problem discussion

How can an intelligent remuneration system be built that will lead to sustained competitive advantage and what are the key success factors? In a new economic reality where knowledge and knowledge workers contribute more to organizational success than ever before, compensation models are sometimes still derived from old thinking where money is considered the prime incentive. As noted earlier these traditional systems often miss the key point, delivering performance related to organizational objectives. Sveiby (1997) suggest that knowledge workers value intrinsic factors like drive for competence and self-determination. This suggests that monetary rewards are not the best way to gain competitive advantages and to accomplish the strategic goals of the organization.

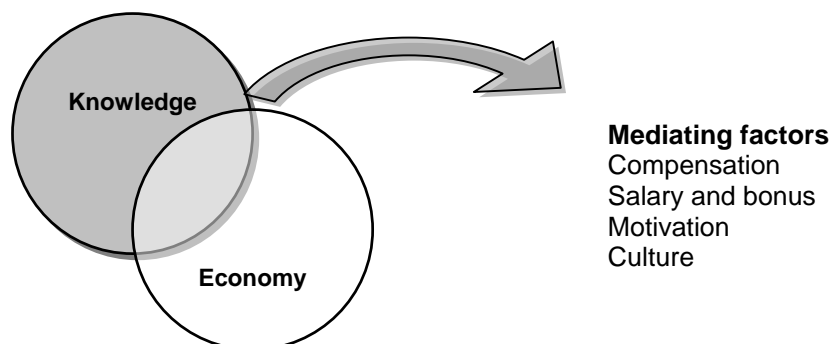


Figure 1. Remuneration can be regarded as a mediating factor in the performance of the knowledge company.

Attracting and retaining talent is predicted to be more important and harder in the future and a competitive compensation system may be a helping tool for companies striving for success. What companies should strive for is an intelligent remuneration system that can contribute to organizational success and motivate the employees to perform well and share knowledge whilst simultaneously compensate the use of the talents knowledge, skills and brainpower based on their contribution to the organizational success.

1.3 Purpose

The purpose of this article is to outline some characteristics of an intelligent remuneration system in the knowledge economy. The article will also pinpoint a heading to navigate after in the search of an intelligent remuneration system in the knowledge economy.

1.4 Disposition

Chapter 1 *Introduction*

In this chapter the reader will be introduced to the special demands of the knowledge economy and to remuneration management, what it means and why it can be a problem. The chapter begins with a presentation of the background of the study and is then followed by a problem discussion. Thereafter is the purpose is presented.

Chapter 2 *Method*

The following chapter describes how the study was performed and discusses the methods used. Further on is the theoretical framework, and reliability and validity of the empirical results are discussed.

Chapter 3 *Theory*

This chapter will introduce the reader to up-to-date theory needed to understand the demands of the knowledge economy, the knowledge company, and the complex psychology of motivation.

Chapter 4 *Presentation of empirical finding*

This chapter will introduce the reader to five different professionals and the companies they represent. The information is based on interviews and presented as case studies. The purpose is to give the reader a thorough understanding of how compensation and motivation is applied in a business-context.

Chapter 5 *Analysis*

This chapter analyses the theoretical findings presented in chapter 3 in relation to the empirical findings in the case studies presented in chapter 4. The analysis will be based on the three theoretical perspectives intellectual capital, motivation and knowledge management. The case studies in chapter 4 will furthermore be complemented by expert interviews.

Chapter 6 *Discussion*

In this chapter I discuss the findings from the analytical phase and some parts of the theoretical framework. Characteristic factors that outline a model of intelligent remuneration in the knowledge economy is presented.

Chapter 7 *Conclusions*

In this chapter I conclude the most important aspects and the logic of the intelligent remuneration system. Furthermore are possible pitfalls and critical success factors in implementing an intelligent remuneration system highlighted.

2 Method

The following chapter describes how the study was performed and discusses the methods used. Further on is the theoretical framework, and reliability and validity of the empirical results are discussed.

2.1 Choosing the topic

Today we live in a different economic world than we did some decades ago. The words of Fredrick Taylor and Adam Smith has partially faded in the light of the changes in the demands on today's workers, at least in many western countries. Knowledge work is a reality for many people and organizations and the knowledge worker has a more significant impact on the success of a company. Knowledge is seen as the most important asset and the prime source of sustained competitive advantage for a corporation, but knowledge is often tacit and consists in the head of the individual workers and in different networks and is not directly controllable by the organization. Outstanding performance based on knowledge lead requires among other things motivated and talented employees. We have all read about compensation system that provide great wealth to managers in the tip of the hierarchy in many companies and the recent scandal at the insurance company Skandia is just one of many. But in a time when the individual worker and teams of knowledge workers has a more significant impact on the future success of a company it does not sound right to utilize compensation systems totally out of proportion at a management level and more traditional pay systems at lower levels. These systems are often seen as not being cost effective and not providing motivation to the employee. Through my conversations with my tutor, professor Leif Edvinsson, the idea of intelligent remuneration was developed in the context of the knowledge economy. This study will combine my knowledge in work and organizational psychology with my knowledge in business economics and strategic management.

To understand the motivational aspects of the employee I will present both classic and contemporary motivational theory. The two other major theoretical perspectives used is intellectual capital and knowledge management. Even though these two perspectives in many ways are similar they are separate. My thoughts before I began this study were; how do knowledge intensive firms think regarding remuneration of knowledge workers, is there a link between rewards and business strategy/goals? What will a perspective considering knowledge management, motivational psychology and intellectual capital provide regarding intelligent remunerations?

2.2 Methodological approach

The research process is divided into several different phases. The study is based on a qualitative approach and aims at providing an understanding for the studied topic. The empirical part of this study is performed through interviews with company executives and experts. The great advantage of a qualitative research method is that it is possible to get profound understanding of the phenomena researched. During the theoretical phase of the study a framework is built that will later be used to analyse the empirical findings. In this article the purpose is to deepen the knowledge surrounding rewards and remunerations in the knowledge economy. With talented people and knowledge as key assets and the means of creating sustained competitive advantages and value companies will need a competitive remuneration system. This study will outline how such a system can be built.

2.3 The theoretical phase

The theoretical phase provides a framework needed to understand the complexity of intelligent remunerations. This framework is also later used in the analysis of the empirical findings and in the creation of a model of intelligent remunerations. As the purpose of this study is to outline the characteristics of an intelligent remuneration system the theoretical part will also provide an overview of current compensation systems applied in companies.

The theoretical framework will begin with a presentation of what characterises the knowledge economy and then continue with a presentation of the concept of intellectual capital. The theoretical framework is then further complemented with motivation theory and knowledge management theory as these areas are recognised as important in knowledge companies. The three theoretical perspectives that lay the foundation for the analysis of how an intelligent remuneration system in the knowledge economy can be built are intellectual capital, knowledge management and motivational theory.

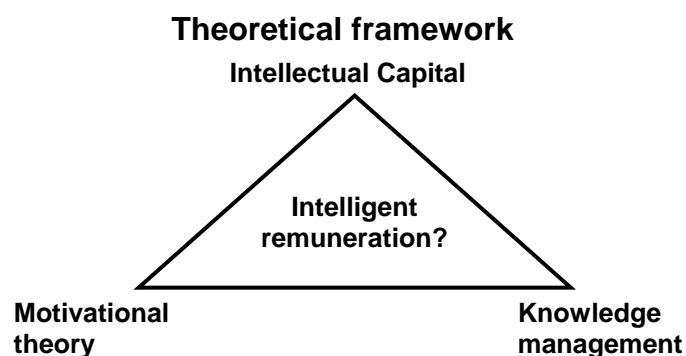


Figure 2. The theoretical framework that will constitute the basis for understanding intelligent remuneration in the knowledge economy

2.3.1 Intellectual capital

Intellectual capital is a somewhat complex construct and relatively new in the academic literature. Intellectual capital aims at measure the non-financial assets in a company. With the help of Leif Edvinsson in selecting relevant literature and articles the theoretical framework will hopefully present relevant and valid parts of intellectual capital theory.

2.3.2 Knowledge management

The interpretation of knowledge management used in the study is that knowledge management is about how to maximize the ability of people in an organization's to create new knowledge and how to build environments conducive to sharing of knowledge (www.sveiby.com). Knowledge management theory is collected from distinguished researchers within the field and from literature used at the School of economics and management in Lund. There are a lot of theories available and therefore is the need of carefully selecting relevant parts more important.

2.3.3 Motivational theory

The motivational theory presented is based on studies in the psychological literature and in research articles. The strive has been to present theories that complement each other and that are considered to be important in the understanding of human behaviour in the workplace and in conjunction with knowledge work. Theories in psychology never becomes old or expired unless they are proven to be invalid, therefore beginning with Herzberg's two-factor theory should not be seen as irrelevant since the theory is still considered to be relevant in some parts. Regarding Maslow's needs hierarchy; this theory provides an interesting way of categorizing human motivation even though the theory has been questioned. Theories presented in the theoretical framework are either well known or when it comes to more contemporary theory considered to be important. Relevant theory is found by using references in articles and also, regarding social cognitive theory, by asking Bert Westerlundh, professor in psychology at the university in Lund.

2.3.4 The words: Reward, Compensation and Remuneration

Reward and compensation are frequently used words in many articles and in the management literature. My experience during this study is that the word remuneration is not as frequent recurring in articles as the other words even though it has got a somewhat similar explanation. According to the Concise Oxford Dictionary of Current English (Thompson, 1995) these words are explained in the following way:

Compensate; recompense (a person) (compensated him for his loss); counterbalance, make up for, make amends for; in psychology: offset a disability or frustration by development in another direction.

Reward; *a return or recompense for service or merit; a sum offered for the detection of a criminal, the restoration of lost property.*

Rewarding; *providing satisfaction.*

Remuneration; *reward; pay for services rendered; serve as or provide recompense for or to a person.*

Evans (1957) interpretation of the word remuneration is that it implies “that the money is a base and inadequate recompense for the service offered” (p. 418). Evans means that the word is unnecessary since most people today (in the 1950’s) are willing to accept pay if there is enough of it. However, today almost fifty years later I am not sure the word is still irrelevant at least not in conjunction with knowledge work. I interpret the word remuneration, as a word with wider explanation, there is more to it than just money. The word is used in this article in its broader sense, that money and pay is just one part and that something more is needed to satisfy the knowledge worker.

2.3.5 Intelligent remuneration

Intelligent remuneration implies that something is or should be intelligent in relation to something else. I see intelligent remunerations as something that will satisfy the needs of the knowledge worker, will enhance learning and knowledge in the company and in the end enhance the performance of the intellectual capital. This in turn leads to better stakeholder value. Intelligent remunerations provide an intelligent way of rewarding the knowledge workers based on their needs and also contributes to economic value and to the long-term strategy of the company.

I do not say that compensations and reward-systems applied in companies today are non-intelligent, but I am not sure that they recognise and optimize the potential of each employee. I will in this article outline characterises an intelligent remuneration system and pinpoint a heading for companies searching for more intelligent ways of remunerating employees.

2.4 The empirical phase

The empirical phase of this study is based on interviews with company executives and experts who can provide interesting and relevant perspectives. The purpose of the interviews with company executives is to provide a view of current practise in knowledge intensive companies.

In the initial phase a mind map with relevant subjects was developed through studies of the theoretical perspectives and articles in business press. The factors considered to be most important was then selected from the mind map and transformed into a semi-structured interview guide.

The empirical and analytical part of the study is relying on the science of hermeneutics. During the interviews notes have been taken, these have then been translated into text as soon as possible after the interview. To get a better understanding of the meaning of the texts the different sentences have been categorised. The text, divided in to categories, is later analysed and interpreted. The theoretical perspectives are applied to the text to get a deeper and more objective understanding. The fact that notes are taken instead of recording the interviews is a limitation in the study since information is lost during the interview.

The interviews carried out in this study have been explorative (unstructured in one case) and semi-structured. To avoid possible inter-subjectivity during the interviews the respondents was allowed to express longer sentences without interruption. The respondents were not exposed to theory during the interview since several different interpretations are available on most theories and the respondents were not expected to be up-to-date with current research. The researcher instead does the theoretical interpretation of the interviews during the analytical phase of this study. The analytical part translates the respondents' interpretation in relation to the theoretical framework. The advantage gained from this is also that the interviews can be held at a level that is mastered by the respondents but it will still lead to a deeper understanding from a theoretical point of view.

Since the study is based on a hermeneutic approach the understanding of each respondents view is very important and the case study presents in large the respondents opinions, even though the interviews is based on a theoretical framework and different theories are tested.

2.4.1 Challenges in interviews with executives

Some sources in methodology (e.g. Andersen, 1998) discuss interviews with company executives as a possible source of bias since there is a difference in status between the respondent and the researcher. The normal role of "interviewer" is according to Andersen (1998) not applicable when interviewing this special category of respondents. The problem is that these persons often have an intellectual capacity above average and a personality disposition that is different from the average population. Furthermore are these persons used to get attention, to control, to take initiative and to make decisions. They are also used to discuss and defend their opinions. Managers have also learned to be careful and diplomatic in their statements. Andersen (1998) also points to the fact that these persons might have a different personal motive in the beginning of the interview and are also less curious than ordinary respondents. The stakes are also higher for this category of respondents as they are official persons and they are therefore more careful. One can expect more diplomatic and fuzzy answers to questions asked.

The respondents selected to participate in this study are four executives in small and middle-sized knowledge intensive companies and one compensation and benefits manager at a large company. The latter company is in the energy-industry and has undergone some major changes during the last years and is now according to the respondent considered to be a knowledge intensive company. The other four companies are in the IT-industry and three out of the four companies are traded on the Stockholm

stock exchange. Interviewing executives in small or middle-sized companies in the IT-industry provides a broad perspective. Their role includes both strategic planning and operational work. The purpose was to find respondents who have insights in business strategy, human resource management and compensation and benefits. CEO's also has the ability to influence systems used in these companies. Additionally, different professionals have been interviewed that can provide this study with a broader perspective on intelligent remunerations.

Andersen (1998) also means that it is easy to loose control and the initiative when interviewing executives. The respondent is not afraid of the situation and is used to handle difficult subjects. Also a young interviewer poses no threat to the respondent instead the respondent is the authority, older and more powerful. It is possible that the researcher is seen as a young unskilled theoretician whereas the company executive is the skilled experienced professional playing the role of lecturer unwilling to let the researcher be in control of the interview.

Andersen (1998) suggests that the researcher should be well prepared for interviews were it is not possible to follow interview guides. Instead the researcher has to learn the most important formulation so that the respondent can be pushed into the conversation. Furthermore, the researcher has to be well prepared on the topic and be able to show the respondent that he/she is not a novice. Andersen (1998) also suggests that the researcher should try to control the interview as soon as it begins. It is not considered important to calm down the respondent; instead focus should be on maneuvering the conversation in the correct direction. It is also important that the questions asked are of interest to the respondent otherwise he/she might reject them. To be able to get in contact with executives and to get them to participate can also be a problem and often interview has to be divided into several shorter sessions.

2.4.2 My reflections on interviewing executives

As proposed by Andersen (1998) as a way of interviewing executives I was well prepared, even though I performed an explorative interview. Since I was well aware of that doing interviews with executives could be hard, I began with exploring my own network. When interviewing a respondent I also asked them to name someone who they knew and that could be of interest to this study. When I later called this person I could use the first respondent as a reference.

The interview with Jonas Birgersson (CEO Labs2) was performed at a meeting for student-entrepreneurship where he was a speaker. Fortunately I was able to get an interview with him and to get his opinion on rewarding knowledge workers. The interviews with executives in this study was performed as single sessions, 1.5 – 2.5 hours long, with a possibility to later call the respondent if something had to be clarified.

The interviews began with a short introduction to what I was investigating and I then began with asking the respondent to tell me how they worked with pay and rewards. The respondents were also asked to explain what a knowledge worker was in their view and how they believed the best way was reward knowledge workers. Later during the

interview I presented a mind map with my thoughts and ideas based on a theoretical perspective and asked them to comment this.

As suggested by Andersen (1998) preparation and knowledge was important when doing this kind of interviews. I experienced most of the respondents to be frank and willing to share their experiences and opinions with me. In one case the respondent initially tried to take control and to lecture me but since I consider my self to be partially experienced in dealing with managers and executives I was able to handle the situation. One sign of the willingness to share their experience was that the respondents often told me more than I was allowed to write in this article. Since the respondents name and company will be published, information considered to be sensitive is in some cases not included in the cases.

Even though interviewing executives is known to be challenging I believe that the executives interviewed during this study provided valid information. I wanted to know how they worked with this type of questions today and their personal opinion on how knowledge workers should be rewarded. Furthermore I asked them to give their opinion on the concept developed in this study. My experience is that due to the personal connection to the respondents I was able to get honest and valid information. Some of the respondents also expressed great interest in the future results of this study.

2.5 The analytical phase

The interviews with company executives are presented as five small case studies in chapter 4. The case studies show a picture of current thinking in these companies regarding compensation, knowledge worker motivation and thoughts about intelligent ways of remunerating. The case studies also constitutes the foundation for the analytical part of the article where current thinking in these companies are analysed from the theoretical framework presented in chapter 3. The analysis is done through a continuing process of interpreting the empirical information and applying theories to the empirical findings.

The analytical phase is divided into two parts, current practise and future practise (intelligent remuneration). The first part analyses how these companies work with compensation and rewards today whereas the latter part discusses the issue of future ways of compensating and rewarding knowledge worker, intelligent remunerations. Even though the companies does not express problems with current ways of thinking that most certainly works well the aim is to look at how new ways of remunerating can be constructed. The analytical phase also includes interviews with more respondents who are able to provide new interesting perspectives. The respondents included in the analytical phase are; Ewa Bryme at Watsson Wyatt, Ingi Runar Edvardsson, Leif Edvinsson and Bert Westerlund.

2.6 Aspects for a model

In chapter 6 aspects for a model to support companies searching for intelligent remuneration is presented. The model is based on the theoretical framework presented in chapter 3 and on the analytical phase presented in chapter 5. This model should be seen as an outline of the factors characterising an intelligent remuneration system.

2.7 Criticism of sources and method

The different sources used in the theoretical phase are selected based on their trustworthiness. Often have relevant sources be selected from references in articles considered to be credible. Articles and literature have also been selected from official course literature at the school of economics and management in Lund.

The qualitative research approach is not as objective as a quantitative but the aim has been to act as objective as possible during interviews and in the analysis of the empiric information.

2.8 Reliability and Validity

The discussion that will follow about reliability and the validity is about the quality of the used method in the study. Good reliability is the same as no interference caused by the interviewer or through circumstances in the environment during the interview. During the interview leading questions, which would interfere with the objectivity of the study, have been avoided. Interviews with executives can as discussed above be a source of bias. The purpose of the interviews was to capture not only current thinking but also the respondents' ideas of the future of intelligent remunerations and untrue statement would not gain them as they all accepted to be presented with name and company in the final report.

Validity in a study is about control and questioning of the study and the empirical parts (Kvale, 1997). The perspectives are clearly defined in the initial part of the study and are used during the whole study. Critical analysis, the testing of different theories against each other has also been used.

Taking notes during interviews instead of using a tape-recorder could have influenced the empiric information collected, but as quality was prioritised during the interviews the information presented should be accurate. Some information provided by the respondents may however been lost due to limited ability of taking quality notes by hand. Four och the five small cases in chapter 4 should be regarded as representative for knowledge intensive firms in this industry. For the case of Sydkraft it is more difficult to conclude if it is representative since only one company in this industry has been investigated. But as the purpose of this study is to look at knowledge workers and this has been the topic during the interviews the latter case is probably representative. The five small cases are also considered to have a high degree of validity and reliability.

3 Theory

This chapter will introduce the reader to up-to-date theory needed to understand the demands of the knowledge economy, the knowledge company, and the complex psychology of motivation.

3.1 Introduction

Firms are today increasingly dependent on knowledge workers as the basis of competition is the employees' know-how (Reich, 1991). The conclusion drawn from this is that organizations must address the needs of knowledge workers in their efforts to retain their primary resource for achieving competitive advantage. Mayo (2000) argues that the human capital logically can be the ultimate driver of all value growth.

Most organizations have known intuitively that their future lies in the strength of their intellectual resources, and that these have inherent value. However few have placed the same amount of attention to understanding and tracking these resources as they do consistently and regularly in the tracking of financial and physical assets (Mayo, 2000, p. 1).

Mayo (2000) also discusses the new model of value, Intellectual Capital (IC), as a model of great fundamental importance to those who work in Human Resource Management. Through the concept of IC the focus between money and people in the organization can be rebalanced between short and long term. However, according to Mayo (2000) few HR Directors have yet taken up this opportunity.

The competitiveness of the residents of a nation in the global market will according to Reich (1991) depend on the value they add within the global economy, the barriers to cross-border flows of knowledge are crumbling. The issue of rewarding the knowledge worker to perform their best is not only an issue for the local company but also for the competitiveness of the nation.

3.2 The Knowledge Economy

The knowledge economy implies a new economic state where knowledge is more important than ever before. Edvinsson (2002) calls this the intangible economy and considers knowledge economics be the new reality. We have at least partially left the industrial paradigm and shifted to a new. The knowledge economy requires new skills, new types of organizations and management, and knowledge is considered to be more important today than ever before (Stewart, 1997). What has a value today may also be different from what had a value yesterday and what will have a value tomorrow (Edvinsson, 2002). Today a key factor in production is knowledge, whereas in the industrial society capital and labour were the key factors. According to Brint (2001) the knowledge economy consists mainly of new science-based industries and professional services industries.

In the old economy people bought and sold “congealed resources”, - a lot of material held together by a little bit of knowledge. In the new economy, we buy and sell “congealed knowledge” – a lot of intellectual content in a physical slipcase (Stewart, 1997, p. 16).

The notion of managing knowledge as a corporate resource is today seen as very important in many organizations, however many organizations struggle with how to build a climate of trust and a culture that encourages and rewards knowledge sharing. Increased levels of competition and high cost associated with human resources, shortages of qualified knowledge workers and increases in employee transience are all factors that points to the importance of more effective use of the intellectual capital in the organization (Janz & Prasarnphanich, 2003).

The problem in the knowledge economy is according to Stacey (2001) valuation. During the industrial age the main assets were physical resources, which were traded in markets and thus valued. The valuation of the organization by capital markets coincided with the measures of asset value in the company. The outcome was that managing the value of the corporation was the same as managing the physical resources and, the human resources who used them. Today, since knowledge is considered to be the most important asset, and since knowledge is not directly traded in markets it is harder to appraise the value of the corporation. This in turn creates a gap between the value recorded in corporate balance sheets and the valuation by capital markets. And since the aim of a corporation often is to produce shareholder value, which is created trough the management of assets, this creates a problem. Luckily the Intellectual Capital movement has provided a possible solution to this problem.

3.3 Intellectual Capital

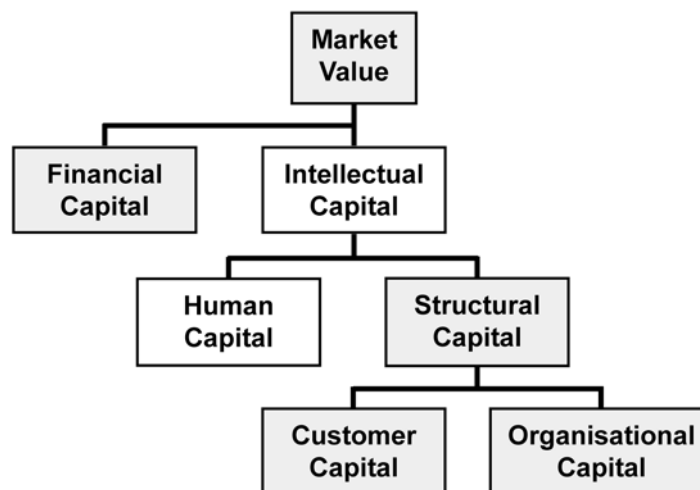
Intellectual capital is an organization's non-financial asset (www.intellectualcapital.se) and the intangible assets. The intangible assets of a knowledge company contributes far more to the value of its products then the physical assets. The intangible assets, the talent of the company's people, the efficacy of the management system, and the

company's relationships to its customers constitutes the intellectual capital (Stewart, 1997).

Edvinsson and Malone (1997) discuss the significance of intellectual capital to a company through a metaphor. If the company is a tree then, organizational schemes, quarterly reports, company brochure, and other documents constitute the stem and leaf of the tree. However, by looking at the tree you will not see the whole company since at least a half of the trees mass is hidden under earth. The study of a company's roots is the study of its intellectual capital.

The intellectual capital is made up by two components, human capital and structural capital. Human capital is the brainpower of the employees, the knowledge, skill, innovation capacity and the ability to perform their tasks. The company cannot own human capital since it consists of the people in the organization. The knowledge of the human capital is embedded in the company's production of services and products. The structural capital on the other hand is the physical resources of a company. It consists of resources such as software, databases, organizational structure, patents, and physical – tangible resources. The structural capital can be seen as a support to the employees in their production of services and products. What separates the structural capital from the human capital is that it is tangible as thus it can be owned and traded in markets (Edvinsson & Malone, 1997).

Available traditional accounting methods cannot cope with brainpower and we therefore run the risk of navigating in blindness. Proper ways to measure intellectual capital is of vital importance if we want to use our resources in the most efficient way (Edvinsson & Malone, 1997).



Source: Edvinsson & Malone, 1997

Figure 3. IC Value Scheme, with this study's focus being highlighted

The difference between the two components, human capital and structural capital, is of major significance to managers of knowledge companies since transforming the

knowledge of human resources into intellectual assets enables the company to own, control and trade the asset in a market. Edvinsson and Sullivan (1996) also define intellectual capital as “knowledge that can be converted into value” (p. 358). To identify and manage knowledge assets are considered to be hard (Stewart, 1997), but Sveiby (1997) recognises some important factors or processes; recruitment, development, motivation, and rewarding of employees and professionals.

3.3.1 Methods for estimating the Intellectual Capital

How should business processes be measured when they today to a lesser extent are based on tangibles and instead the intangibles are becoming the key factor of value creation. The traditional financial measures are considered to be inadequate in this new knowledge based economy (Pulic, 2004). To be able to manage business processes in the knowledge economy we have to be able to somehow measure performance of the intangible assets. Drucker (1999) recognises the productivity of knowledge work and knowledge workers to be one of the most important contributions that management has to do in the 21st century. To be able to manage the efficiency of the intellectual capital Pulic (2004) stresses the importance of measuring it.

There are several different methods used to estimate intangible assets in a company. They can be divided into four groups of measurements; Direct Intellectual Capital, Market Capitalization, Return on Assets, and Score Card methods (Sveiby, 2004).

The direct intellectual capital method estimates the pecuniary-value of the intangible assets through the estimation of the intangible assets different components. The market capitalization method calculates the pecuniary-value of the intangible assets or the intellectual capital as the difference between the market capitalization and the stockholders equity. The third method of measuring the intellectual capital, return on assets method, calculates the intangible assets through dividing the above average earning of a company with the average cost of capital. Finally, the fourth method is a scorecard method where indicators are selected that corresponds to the different components of the intellectual capital. This method however does not result in a pecuniary-value of the intellectual capital (Sveiby 2004).

3.3.2 Measuring the intellectual capital through VAIC TM

The Stern Stewart & Co ROA model, EVA (Economic Value Added), and the Kaplan & Norton Balanced Score Card method are sometimes used in conjunction with intellectual capital. However, according to Pulic (2004) the EVA model is not suitable since it focuses on capital employed. Nor is the balanced score card method considered to be usable, even though it is a well used management tool, since it is not applicable as a standard measuring system (Pulic, 2004).

Instead the concept of value added is proposed as a framework that will provide an objective way of assessing business performance. It is also considered to be valuable, relevant and applicable to all the participants in the value creation process, knowledge workers, managers and shareholders. It will furthermore provide a real value. Value added is according to Pulic (2004) the most appropriate indicator of business performance and is in its basic form calculated as the difference between output and input. Value added is not only considered to be an objective measure, it will also show a

company's ability to create value. Pulic (2004) proposes the VAIC- framework as a financial evaluation model of intellectual capital. Expenses related to employees are in the VAIC not treated as costs instead they represent an investment.

Calculation from the company accounts is done in the following way:

Value Added = Operating + employee costs + depreciation + amortization.

Pulic (2004) then suggest that the efficiency of the human capital (HCE) can be calculated through: **Human Capital Efficiency = Value Added / Human Capital**, where the human capital is total salaries and wages for the company.

Structural Capital can be calculated through:

Structural Capital = Value Added – Human Capital.

The Structural Capital is not independent since it depends of the created value through value added. Also, the bigger the share of human capital in the created value is, the smaller the share of structural capital.

The efficiency of the structural capital is calculated through:

Structural Capital Efficiency = Structural Capital / Value Added.

The efficiency of the intellectual capital can then be calculated through:

Intellectual Capital Efficiency = Human Capital Efficiency + Structural Capital Efficiency

Today Intellectual Capital efficiency is for knowledge work and the knowledge worker what once was productivity for manual work and the manual worker" (Pulic, 2004, p. 65).

Since the intellectual capital cannot create value on its own the financial and the physical capital also has to be taken into account. This is done through calculating the efficiency of the capital employed through:

Capital Employed Efficiency = Value Added / Book Value of the net assets of the company.

This value is then added up together with the Intellectual Capital Efficiency to get the overall value creation efficiency in the company:

Value Added Intellectual Coefficient = Intellectual Capital Efficiency Coefficient + Capital Employed Efficiency Coefficient.

This aggregated coefficient allows the understanding of the overall efficiency of a company and its intellectual ability. The VAIC (Value Added Intellectual Coefficient) measures how much value that has been created per invested monetary unit. A high value on the VAIC indicates a higher value creation utilizing the company's resources, which includes the intellectual capital. This can be seen as a new way to measure and understand organizational efficiency (Pulic, 2004).

3.3.3 The IC-multiplier

As recognised earlier the intellectual capital in an organization consists of human capital and structural capital. These two components interact in order to create value. The organization provides the structure needed for individuals to leverage their talent (Daum, 2001). The IC-multiplier ratio (intellectual capital multiplier) provides an

indication of how well the human capital in the organization uses the structural capital to leverage its potential. The structural capital in the company has to be larger than the human capital in order to leverage the human capital. If the opposite is true then this will lead to an erosion of the human capital (Berglund, Grönvall, Johnsson, 2002).

$$\text{IC-multiplier} = \frac{\text{Structural Capital}}{\text{Human Capital}}$$

Figure 4. The IC-multiplier, an indication of how well the potential of the human capital is leveraged in the organization.

3.4 The Knowledge Worker

The concept of the knowledge worker emerged in the late 1980s (Smith & Rupp, 2004). In defining the knowledge worker, the significant difference from the traditional view of a worker is that the most important raw material today is information. Earlier this applied to few workers in a workplace while it today applies to the major part of the workforce (Stewart, 1997).

Information and knowledge are both the raw material of their labour and it's product (Stewart, 1997, p. 41).

Brint (2001) defines knowledge workers as professionals and professionally educated managers. As a consequence, universities are given a central role in the knowledge economy as the producers of the labour.

Knowledge work has little in common with mechanical work, and the division of labour described by Adam Smith does not apply to knowledge work. Narrowly defined jobs and workers measured and rewarded by numerical scorecard is part of the history, at least when we talk about knowledge workers. The traditional worker is not extinct, he or she still exists and will continue to do so. Mechanical work will still be needed in the future even though to a lesser extent (Stewart, 1997).

Despres and Hiltrop (1995) discuss knowledge work as fundamentally different from traditional work, especially in terms of the work activities and career expectations. Knowledge workers have a more rapid skill obsolescence than traditional workers and also identify more strongly with their peers and profession than the organization. The knowledge worker is also more important to the long-term success of the company (figure 5).

Figure 5. A comparison of knowledge work and traditional work (Despres & Hiltrop, 1995)

	Traditional work	Knowledge work
Skill/knowledge sets	Narrow and often functional	Specialised and deep, but often with diffuse peripheral focuses
Locus of work	Around individuals	Around groups and projects
Focus of work	Tasks, objectives, performance	Customers, problems, issues
Skill obsolescence	Gradual	Rapid
Activity/feedback cycles	Primary and of an immediate nature	Lengthy from a business perspective
Performance measures	Task deliverables Little (as planned), but regular and dependable	Process effectiveness Potentially great, but often erratic
Career formation	Internal to the organization through training, development, rules and prescriptive career schemes	External to the organization, through years of education and socialisation
Employee's loyalty	To organization and his or her career systems	To profession, networks and peers
Impact on company success	Many small contribution that support the master plan	A few major contribution of strategic and long-term importance

To get a perspective on productivity and value of the knowledge worker think about what Taylor would say about productivity regarding the manual worker.

THE principal object of management should be to secure the maximum prosperity for the employer, coupled with the maximum prosperity for each employee. ... maximum prosperity for each employee means not only higher wages than are usually received by men of his class, but, of more importance still, it also means the development of each man to his state of maximum efficiency, so that he may be able to do, generally speaking, the highest grade of work for which his natural abilities fit him, and it further means giving him, when possible, this class of work to do (Taylor, 1911).

According to Drucker (1999) six major factors determine knowledge worker productivity. These include, responsibility for productivity on the individual worker (autonomy), continuing innovation as a part of the work and continuous learning. Productivity is also not primarily quantity of output, the quality is very important and knowledge workers have to be seen and treated as an asset. What should be noted here are that some factors influencing productivity of knowledge workers is the opposite of the factors influencing productivity of the traditional worker. Another big difference between the two is that, the manual workers do not own the means of production. They may have experience, but the value of that experience is connected to where they work. The knowledge worker on the other hand, owns the means of production. Their brain is the capital asset, and moreover it is portable (Drucker, 1999).

3.4.1 The value of a knowledge worker

In the ideal world, two people doing the same job under the same conditions will produce exactly the same amount. In the real world, some employees produce more than others (Cook, 2004, p.1).

What is the value of a knowledge worker and how should it be calculated to fit the demands of the knowledge economy. According to Pulic (2004) most economic and financial models treat employees as a cost and not as a resource, even though the employees are the prime carriers of knowledge in an organization. Pulic (2004) therefore argues that it is necessary to define a new status for employees, a status as a key resource. Employees should be seen as an investment since intellectual capital is the key resource in the knowledge economy and knowledge replaces land, manual work and money as the most important asset. Today companies invest in their employees who are becoming the key resource of value creation.

From the knowledge workers perspective, Cope (2000), recognises the best way to appraise the true value of a workers knowledge is by placing it on the open market. Valuing the personal capital only in relation to the local context results in an incorrect valuation. A person measuring the value of his or her personal capital against the local context, e.g. the internal rate of pay in a company, fails to appraise the true value – the market value. Hence the reward received is not appropriate in relation to the market value even though it may be correct according to the internal level of pay in the company. According to Cope (2000) the knowledge worker should be valued according to what the asset (knowledge) is worth in the open market and not according to book valuation – the “value that the company ascribes according to the capital investment” (Cope, 2000, p.202).

According to Quinn, Anderson and Finkelstein (1996) professionals, knowledge workers, wants to be evaluated and gain feedback on their performance and to know if they have excelled against their peers. Outstanding organizations are using frequent performance evaluation and feedback.

A common perception is that high compensation is dependent on organizational success, but according to Pfeffer and Veiga (1999) this might be an incorrect view. A higher than industry average wage will attract more experienced employees and provide the company with an opportunity of recruiting the best. A higher than average wage will also communicate that the organization values its people. Although other factors motivate employees, e.g. social recognition and achievements, people who are responsible for enhanced levels of performance and profitability “will want to share in the benefits” (Pfeffer et al., 1995, p. 59).

Sveiby (1997) discusses value added per professional as the purest measure of the ability to generate economic value in knowledge companies. The professionals in a company are the ones that bring in revenue. The revenue is then used to cover all the costs that arise from the activities in the company. The residual is the profit of the company that is divided to shareholders or used to finance investments. For companies in growth mode market value per employee or total revenue per employee are possible alternatives according to LeBlanc, Mulvey and Rich (2000).

3.5 The knowledge creating process of the firm

As already acknowledged there is a growing interest of knowledge as a corporate resource for competitive success. A pressure for innovation in a world of hyper-competition alongside with an increasing globalisation has put transfer of existing knowledge and the creation of new knowledge on the management agenda (Von Krogh, Nonaka & Nishiguchi, 2000). The importance of understanding and managing knowledge as a corporate resource is derived from the recognition of the inefficiency with which these resources are deployed (Grant, 2002). According to Nonaka (1991) what is certain is uncertainty, and the only sure source of lasting competitive advantage is knowledge. Successful companies will be those who consistently create new knowledge. The main value driver in knowledge organizations is to turn human capital into structural capital. The structural capital can then be used to leverage market opportunities (Daum, 2001).

Several aspects of the organization are affected as the emphasis moves from a traditional focus to a focus on intellectual and knowledge resources. Organizations operate in a more complex and changing environment and the boundaries are more blurred (Figure 6).

Figure 6. Changing from conventional to knowledge-intensive firms (Despres & Hiltrop, 1995)

	From	To
Environment	Variable but knowable	Complex and changing
Strategic corporate design	An assembly of individuals who execute instructions through structures and functions	Knowledge community that draws on the strength of the collective mind
Organizational structure	Hierarchical, mechanistic, atomic	Holographic, organic overlapping
Boundaries	Fixed: the organization has an identity relationship with itself	Fluid: organization is networked with various others at different times, for different purposes
Managerial focus	Functions	Processes
Authority/power	Hierarchical position, command and control	Professional influence, communication, collegiality
Control of work	Vested in supervisory processes	Vested in individuals
Control of work outcomes	Remains with central management	Negotiated between supervisors and groups of knowledge workers

A key debate that is vital to our understanding of organizational learning concerns whether learning is an individual or a collective process. One view recognises organizational learning as manifested only through the experience of individuals. Another view sees organizational learning as more than the sum of individual learning (Palmer & Hardy, 2000).

According to Nonaka (1991) organizational knowledge creation can in an initial phase be seen as the sharing of tacit knowledge and this knowledge is then converted into explicit knowledge. Instead of processing objective information the knowledge creating company will build on the highly subjective mind of the individual and share this with the organization. New knowledge always emanate from the individual. A key success factor in doing this is personal commitment from the individual and integration of the company's mission and the individual. Responsibility for knowledge creation in the knowledge company is not exclusively on any group of experts or managers. All employees are involved in this process. Teams play a major role since they constitute a shared context where the interaction of individuals can result in reflection (Nonaka, 1991). Even Senge (1990) emphasises the individual in the learning process and he concludes that organizations learn only through individuals who learn. Senge (1990) argues that the best learning in an organizational context takes place when an individual has got a genuine feeling of responsibility. The learning organization will therefore be decentralised where autonomy is developed as far as possible.

The knowledge-based view of the firm “considers the firm as a set of knowledge assets and the role of the firm in creating and deploying these assets to create value” (Grant, 2002, p. 176). Grant (2002) distinguishes between knowledge creation, which is an internal process in a company and knowledge acquisition – absorbing existing knowledge from a source external to the company. The latter includes hiring skilled employees or acquiring a knowledge resource.

3.5.1 Critique of the organizational learning perspective

Even though many organizations have recognised the importance of learning they are unable to turn theory into practise. Instead they are stuck with theoretical frameworks instead of organizational strategies (Beardwell et al, 2004). According to a study by Chase (1997) the biggest obstacles to creating a learning organization is culture. Knowledge management strategies are according to this study actively or passively hindered in many organizations. Other important obstacles to develop a learning organization were organizational structures, top management commitment and rewards/recognition. Barriers to learning from an individual perspective can be anxiety and lack of confidence. Other barriers can be lack of learning opportunities and lack of support

3.6 A motivational perspective

There are several different theories of motivation available in psychological- and in management literature. As mentioned in the introduction, these theories can be divided in different ways. The most popular theories are the ones that focus on drive within the worker. I will here begin by presenting two well-known need theories of motivation. Herzberg's two-factor theory and Maslow's need hierarchy. I will then introduce the Equity theory, the Expectancy theory and the Goal-setting theory of motivation. Understanding human behaviour is not simple, but it is important to be aware of that different factors may motivate different people.

The psychology of motivation is very complex, and what has been unrevealed with any degree of assurance is small indeed. But the dismal ratio of knowledge to speculation has not dampened managers' enthusiasm for snake oil, new forms of which are constantly coming on the market, many of them with academic credentials (Herzberg, 2003, p. 1).

3.6.1 Maslow

Even though Maslow's needs hierarchy has been criticised, the simplicity of the model justifies its presence. As with all need theories the major problem is to explain the worker motivation in determining the levels of need. However, the need theories are considered to be helpful in developing techniques for motivating workers (Smither, 1998).

Briefly, the Maslow needs hierarchy builds on several different phases that an individual goes through in the search of the ultimate goal, self-actualisation. The basic needs are physiological; these are then followed by social and psychological needs. People who have reached higher levels in the hierarchy can quickly move back down if the circumstances are changed and the lower level need are not being met anymore (Smith, 1993).

A major contribution by Maslow was the distinguishing between biological needs (e.g. hunger and sleep) and psychological needs (e.g. self-esteem and belongingness). The human being cannot survive as a biological organism without satisfying the biological needs and likewise we cannot develop fully as a psychological organism without satisfying the other needs as well (Pervin & John, 2001). According to Maslow the individual motivation is hierarchical, the accomplishment of goals on higher levels cannot occur until lower level goals have been satisfied. The hierarchy was first developed as a model of personality, but he later revised to apply to work conditions. The basic needs in all humans are needs necessary to survive, food, shelter, and warmth. This need, applied in the work environment, is about earning enough money to satisfy the needs. When those needs are met the individual requires security, an orderly and predictable work environment. In the next phase respect and positive social relations with co-workers become important. When the worker is satisfied with the social environment he or she is ready to fulfil the esteem needs – to achieve, be competent, and gain recognition.

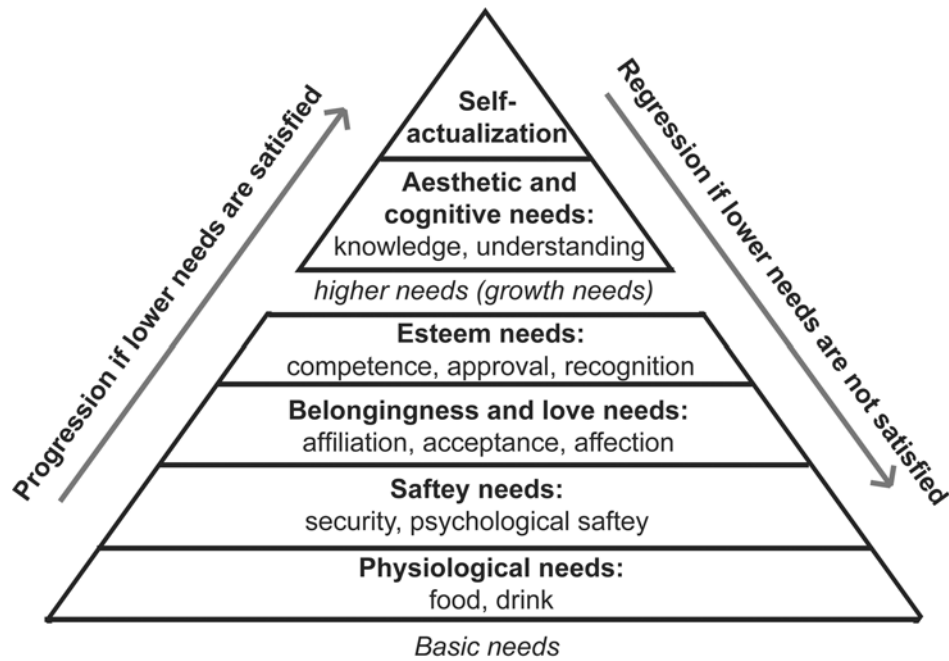


Figure 7. Maslow's need hierarchy (Smith, 1993, p. 372)

In the highest state of the hierarchy the workers want to fulfil their unique potentials and abilities. According to Maslow the level of individual performance affects the motivation. Providing a salary raise will not do any good if the worker desires another need in the hierarchy (Smith, 1998; Abrahamsson & Andersen, 1998).

Scientific research has revealed that only two of three of the levels in the need hierarchy exists. Alderfer developed a theory based on the three needs of existence, relatedness and growth (ERG). Even though the ERG theory also is a hierarchy, the differences between the different levels/needs are not razor thin (Figure 7). According to Alderfer one level of needs do not need to be satisfied before the next level arises (Smith, 1998; Abrahamsson & Andersen, 1998; Alderfer, Kaplan & Smith, 1974).

Maslow Categories	ERG Categories
Self-actualisation	Growth
Esteem – self-confirmed	
Esteem –interpersonal	Relatedness
Belongingness (social)	
Safety – interpersonal	
Safety – materials	Existence
Physiological	

Figure 8. Comparison of Maslow's needs and ERG categories

3.6.2 Herzberg

According to Herzberg et al. (1959) an employee's motivation to work is best understood when the attitudes pertaining to that individual is understood. From the studies of the attitudes of employees Herzberg constructed two lists of factors influencing worker motivation, motivators and hygiene factors. Hygiene factors are not associated directly with the job, but rather contribute to feelings of unhappiness, and are related to the context in which the individual performs his tasks. Hygiene factors are related to an unhealthy psychosocial work environment. These factors do not contribute to a positive attitude towards work, but when these factors deteriorate to a level below that the employee considers acceptable the employee becomes dissatisfied (Herzberg et al. 1959; Herzberg, 1966).

When the job context can be characterized as optimal, we will no get dissatisfaction, but neither will we get much in the way of positive attitudes (Herzberg et al., 1959, pp. 113-114).

The factors of hygiene include salary, benefits, job security, supervision, interpersonal relations, physical working conditions, and company policies (Figure 9).

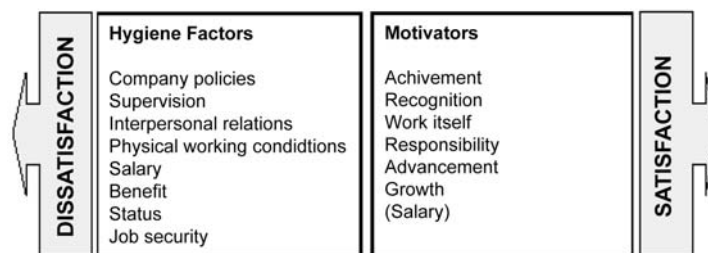


Figure 9. Hygine factors and Motivators according to Herzberg.

Motivators are task-related and causes good attitude within the worker. Positive job attitudes are created trough the factors that satisfy the individual's need for self-actualization in his or her work. The concept of self-actualisation as the ultimate goal has been discussed by many personality-theorists, e.g. Jung, Adler, Sullivan, Rogers and Goldstein (Herzberg et al., 1959). It has also been revealed in several studies (e.g. Barbuto, 2000). The supreme goal of man is often pictured as the fulfilment of oneself as a creative, unique individual according to the individual's "own innate potentialities and within the limits of reality" (Herzberg et al., 1959, p. 114).

The individual has a tendency to actualise himself or herself in every area of his or her life, and the job is regarded as one of the most important areas.

It is only from the performance of a task that the individual can get the rewards that will reinforce his aspirations (Herzberg et al., 1959, p. 114).

Salary can act as both a motivator and a hygiene factor depending on the context. In a study conducted by Herzberg (Herzberg et al., 1959) salary was considered to be

something that went along with a person's achievement on the job. Salary was considered to be a form of recognition, a reward for a job well done.

It would seem that as an affector of job attitudes salary has more potency as a job dissatisfier than as a job satisfier (Herzberg et al., 1959, p. 82).

According to Herzberg et al. (1959) a high salary is not a source of increased performance in a company. However there are examples of successful employee motivational schemes that seem to rely directly on the use of wages and bonuses and that lead to increased production, job satisfaction and company loyalty. According to Herzberg et al. (1959) increased job content, job responsibility, and advance of workers on the basis of merit are factors influencing job satisfaction in these cases. Money is of relative small importance.

Beyond enough for our real need, money itself is valued less for what it will buy than as an evidence of successful skill in achievement (Herzberg et al., 1959, p. 117).

Pecuniary compensation received as a direct reward for outstanding individual performance is a reinforcement of the motivators of recognition and achievement. The worker must feel that he or she is a part of the company and that the success is result of the individual contribution (Herzberg et al., 1959).

The separation of factors into motivators and hygiene can also be seen as a separation of factors into intrinsic and extrinsic. The motivators can be seen as intrinsic factors since achievement, recognition, work itself, and responsibility all are connected to the inner state of the workers mind. The hygiene factors on the other hand, can be seen as extrinsic since they are part of the context.

A somewhat interesting result from the development of the two-factor theory is that job satisfaction and job dissatisfaction are not obverse of each other. Instead, each of the feeling is made up of two unipolar traits. The opposite of job satisfaction is no job satisfaction (Herzberg, 1966).

3.6.3 Equity Theory

The equity theory of motivation offers a more rational view than the need theories do. According to this theory the employee's level of effort is determined by the perception of fairness regarding the reward in comparison to those received by others. Worker performance is believed to be directly related to the perceived payoff. The reward received should balance the effort that the worker put in to the process. In every exchange there is a possibility of inequity. If there is a situation of inequity the individual will strive to bring the situation back into equilibrium (Smither, 1998).

Equilibrium can be reached by either changing one's beliefs or one's behaviour. However, the individual will risk being caught in a "forced compliance" situation (Festinger, 1962). Forced compliance occurs when an individual has a perception and someone tries to change this perception through a reward or a punishment. If the individual changes his or her behaviour explicit and retain the implicit perception a situation of cognitive dissonance will occur. This may in turn lead to anxiety and

anguish. If the individual however also alter his or her implicit perception this situation will not occur (Camp & Ågren, 2002).

The equity theory was originally developed in the 1960's to explain how individuals responded to money as motivator. The theory has, since its introduction, been modified and applied in more areas (Smither, 1998). The general idea behind the theory is that inequities cause's tension that has to be resolved. For people working with compensation and benefits it is important to be aware of what the employee perceives as a fair reward, this will also differ from group to group (Beardwell, 2004).

3.6.4 Expectancy theory

The expectancy theory of motivation is based on three main factors, the effort of the individual, the expected reward, and the individual's value of the rewards. These three factors influence the performance in the work situation. The expectancy theory of motivation is a cognitive theory and exactly like the equity theory it offers a rational approach to motivation. The workers will choose among different alternatives and estimate the probable outcome. Due to the focus on probable outcome the theory aims at what is likely to happen in the future. A perception of not being rewarded equitably compared to the individual effort will lead to a behaviour with less effort put into the process (Smither, 1998).

3.6.5 A brief overview of more contemporary motivational perspectives

Moving on from the need theories and the cognitive perspective of motivation to a contemporary perspective will very briefly introduce the reader to the goal-setting theory and the social-cognitive theories of motivation.

3.6.6 Goal-setting Theory

The emphasis on goals in human behaviour is a contemporary view among many personality theorists. Goals energize and direct activities; also goals give meanings to people's lives (Pervin & John, 1999). Goals are also discussed as a way of achieving self-motivation (Pervin & John, 2001). The basic idea in the Goal-setting theory is that the individual's performance is related to the goal difficulty. Goals are considered to be what an individual is trying to accomplish. A person with higher goals will, according to this theory, perform better than a person with lower goals. Also, clear goals will lead to better performance than vague goals. A specific goal will help the individual to shape behaviour to accomplish the goal. According to this theory feedback is essential in achieving full performance (Beardwell et al, 2004; Pervin & John, 1999).

Hence feedback offered in an appropriate manner can have a motivating effect on the employee (Beardwell et al., 2004, p. 515)

The interesting part of this theory is that monetary incentives is perceived to be able to enhance performance by either raising the level of the goal or by increasing the employees commitment to the goal. Feedback is considered to be of vital importance in the Goal-setting theory, as it will increase the workers feeling of achievement reduce uncertainty and enhance performance. It is however important that the feedback is

timely (Beardwell, 2004). Many remuneration systems lack the ability to communicate timely feedback on performance to the employees. Often feedback is communicated to the employees only when performance has dropped below an acceptable level.

3.6.7 Social-cognitive theories

The social cognitive theory offers a contemporary approach to motivational theory and is suitable when linking motivation and knowledge workers (Westerlundh, B., personal communication, June 16th 2004). The root can be found in behaviourism (e.g. Skinner) but has developed far ever since. The contemporary social cognitive perspective is founded on the belief that “that human functioning is best understood in terms of reciprocal interactions among the environment, behaviour, and personal factors” (Cervone & Williams, 1992, p.200). Within this model, the nature of persons is best understood as a set of basic human capabilities.

Social cognitive theory provides a conceptual framework for clarifying the psychological mechanisms through which social-structural factors are linked to organizational performance (Wood & Bandura, 1989, p.380)

New findings tend to suggest (even though there is a lack of longitudinal studies) that the job context may influence the individual differently at different points in life. This also tends to suggest that incentives may play different roles in relation to the individual.

As opposed to some earlier theories of motivation, the social-cognitive theory claims that people are not primarily bent on maximizing pleasure and reward. Instead this has to be seen in a context where “people are equally inclined to deny rewards to themselves until their behaviour meets their own self-imposed standards of adequacy” (Caprara & Cervone, 2000, p. 340). The “standards” of an individual act as guides for action and has got an motivational effect. The standards are also cognitive in that they act as mental images of a desirable outcome.

The individual’s motivation is in part constituted by the individual’s efforts to obtain his or her own standards of behaviour. However, what makes this interesting is that this self-evaluative process is only one part of the motivation. Another major factor influencing motivation is the individual’s subjective assessment of “whether outcomes are controllable and whether they can execute the courses of action required to control events” (Caprara & Cervone, 2000, p. 341).

An element of major importance in perceived control is the individuals appraisal “of their capability to execute courses of action” – also known as Bandura’s term *self-efficacy*. Self-efficacy is important to the psychology of motivation since 1. “self-efficacy perceptions directly contribute to decisions, actions and experiences (Caprara & Cervone, 2000, p. 342). People with doubts on their own efficacy of performance tend to avoid challenges and to abandon activities when facing setbacks. 2. Self-efficacy perception also influence outcome expectations and goal-setting (people with higher self-efficacy tends to set higher goals). 3. Finally self-efficacy perceptions “may moderate the impact of other variables that have the potential to enhance performance” (Caprara & Cervone, 2000, p. 342), e.g. “acquisition of skills and knowledge enhances achievement, but not if people doubt their capability” (Caprara & Cervone, 2000, p. 342).

3.6.8 Summary of theories of motivation

To sum up the theories, one can conclude that different theories of motivation have been popular at various times in the past. However there is some evidence that people are capable of various kinds of motivation and also differences exist among individuals in the extent to which they are motivated by one or more of these motives. This complicates the picture and enhances the complexity of motivation in the workplace and increases the pressure on the organization to offer not just one but several sources of motivation.

Theories of motivation						
1881	1940s	1960s	1964	1966	1984	1990s
Taylor Money linked to various objects acts as the primary motivator. (Source: Beardwell et al., 2004)	Maslow Different needs determine the motivator at different levels. (Source: Smithers, 1998)	Equity theory Individual motivation is influenced by the fairness of the reward in comparison to those received by others. (Source: Beardwell et al., 2004)	Expectancy theory Employees are rational and follow a path of economic maximisation. They choose and alternative that will lead to a desired reward. (Source: Beardwell et al., 2004)	Herzberg Motivators and Hygiene factors. Money is a hygiene factor and can therefore only lead to no dissatisfaction. Motivators can however motivate the employees. (Source: Herzberg, 1966)	Goal-setting theory Performance depends on the individual's intention to perform. Goals act as a motivator and monetary incentives can enhance performance. (Source: Beardwell et al., 2004)	Social-cognitive theory People are not primarily bent on maximizing pleasure and reward. Rewards can be denied until behaviour meets self-imposed standards. (Source: Caprara & Cervone, 2000)

Figure 10. Summary of theories of motivation and important characteristics

3.7 Financial compensation systems

There have been some major changes in the view of compensation systems during the last decade. In the 1980s it became clear that the old pay systems were not especially effective in delivering performance related to key organizational goals. Today, rewarding the worker and more specific the knowledge worker is not simply about rewarding for previous attainments. The reward has to be linked also to future performance. Today it has become more important to reward people in accordance with their value to the organization. This has led to a change in the rewards systems with an increased linkage between rewards and organizational strategies (Beardwell et al., 2004).

3.7.1 Fixed pay

Anthony and Govindarajan (2001) discusses two schools of thoughts regarding incentive compensation, fixed pay and performance-based pay. The philosophy of the fixed pay school is that good people should be recruited, they should be well paid, and good performance should be expected. In this school of thoughts compensation is not linked to performance and is therefore not at risk. The fixed pay system can however contribute to an increased focus on customers' long-term needs.

3.7.2 Performance-based pay

The performance-based view also focus attention on recruiting good people and expect them to perform well. The big difference is that according to this view employees should be remunerated based on their performance, performance first compensation later.

Another kind of pay that the employee can receive based on performance is a bonus. A bonus is e.g. based on percentage of earnings or profitability relative to industry and normally paid on annual basis to the employees. Bonuses can however be paid and calculated with other intervals (Anthony & Govindarajan, 2001).

3.7.3 Competence-based pay

Competence-based pay is an attempt to focus more on the individual in the organization and on his or her competencies. Competencies are defined as "the characteristic set of knowledge, skills, abilities, motivation and procedures that individuals working in specific jobs should possess to allow them to perform their work to minimum standards" (Beardwell et al., 2004, p. 519). Examples of competencies are leadership, integrity, communication skills, presentation skills, adaptability, diversity thinking, and result-orientation. HR-specialists have developed special competence frameworks that link pay to the attainment of required competencies (Beardwell et al., 2004). The main advantage offered by this system lies in the ability for organizations to set their own characteristic set of competencies.

3.7.4 Options

Options are or were at least considered to be a popular form of remunerating employees in information technology companies. The reason that the popularity might have taken a downfall is due to the bust in the market in 2000. According to Hammonds (2003) option-programs is the most meaningful system developed for wealth sharing in the modern economy. The upside potential of options tends to attract highly talented people. Options also provide incentives for employees to share their creative ideas. This will enhance the company's market share and competitive positioning. This will then lead to an increase in the company's value and contribute to an increase in stock prices and thus benefiting the employees. Through broad employee ownership, option-programs, some companies have been able to lower salaries and option-programs also tend to direct attention to long-term goals (Anthony and Govindarajan, 2001).

Hammonds (2003) points to some factors that complicate option-programs. First, this kind of broad employee ownership only works in an entrepreneurial, participatory

workplace. Second, these programs have to offer a considerable incentive relative to the fixed salaries.

3.7.5 A new capital for knowledge workers

If knowledge is the greatest source of economic value, one would expect to see labour markets reward people who work with their brains and slap around those who do not (Stewart, 1997, p. 41).

Despite the increasing sophistication and importance of reward systems, the evidence shows that many reward and compensation systems fail to deliver the expected results (Sparroq & Hiltrop, 1994). Traditional pay systems are considered to be neither cost effective nor motivating people to do more. This is a big problem since pay has consistently been found to be one of the most important job factors for individuals. New compensation systems are required, but they are often not given much attention by top management or are not redesigned with changing business objectives and strategies. A traditional pay system often fails to support new business objectives because they do not recognize people to the success of the company (Sparroq & Hiltrop, 1994).

In an attempt to make the employees more readily identify the organizational goals some organizations has implemented the profit-related pay. The basic idea behind this system is that when the organization does well the worker will get a share in the gain. Likewise, in bad times the employees would suffer. Beardwell et al. (2004) discusses that this may work in an organization where the employees can be encouraged to swap a part of their base pay for a variable pay. Beardwell et al. (2004) also sums up current research looking at this system and concludes that it has some positive impact on performance but also that “employees can view the rewards as unrelated to individual performance” (Beardwell et al., 2004, p.518).

According to Anthony and Govindarajan (2001) research findings tends to support that individuals are more strongly motivated by the possibility to earn a reward than by the risk of punishment. This finding suggests that performance and remuneration systems should be reward-oriented. Research findings also suggests that monetary remuneration is important in satisfying needs, though beyond a certain level of satisfaction non-monetary remuneration becomes more important. Also incentives are more effective if they are received in close-relation to the action performed.

It is also important to recognise that the remuneration system should be intimately related to the organizational goals. The incentives must therefore also be related to individual goals (Anthony & Govindarajan, 2001).

Despres and Hiltrop (1995) concludes that since many employees are dissatisfied with their pay but still rank compensation as a prime job factor, many individuals believe that their wages are unfair, performance gains are unrecognised, or their innovations not rewarded. Many reward systems are also biased against a management view and thus fail to recognize individual experience, contribution to organizational goals and skill development. Compensation systems also tend to “focus on hierarchical position and nominal job content as proxies for contribution to the business” (Despres & Hiltrop, 1995, p. 6). Traditional reward systems usually reward individualism and functional specialisation, while knowledge work often demands teamwork and flexibility. Many companies still design structures and functions around fixed positions, while in fact “the

individuals and their talents uniquely should define the contours of their work” (Despres & Hiltrop, 1995, p. 7).

Professionals and experts are best motivated by intangible rewards, such as peer recognition, learning opportunities, and opportunities for more independence according to Sveiby (1997). Sveiby (1997) also means that when professionals do seem to be motivated by money, it should be recognized that money can act as a substitute for something more intangible, like prestige or independence.

Paying for the position rather than the person is a well-known axiom, but this often contradicts the reality of knowledge work. Position in knowledge work has to be designed around people and their talents since they uniquely define their work. This may contradict current thinking and calls for new ways of rewarding employees. Despres and Hiltrop (1995) suggests that compensation and reward systems should be viewed as systems large in scope, made up of parts which together form a whole. The compensation and reward systems should involve more than performance appraisal, non-pecuniary benefits, incentives and basic pay. An effective compensation and reward system in the knowledge economy should consist of three major dimensions; external competitiveness, rationality in the organizational context and contribution to company’s strategic goals. Furthermore should an effective system be constituted in a way of thinking that makes cultural, socio-political and work challenge issues primary. Consequently, pay, bonus and incentive schemes become a secondary objective of this new system.

Some processes can according to the social-cognitive perspective on motivation be self-rewarding. According to Bandura (in Despres and Hiltrop, 1995) people value their self-respect and self-satisfaction obtained through a job well done more than they value material rewards.

Organizations get what they reward. A reward system focusing on short-term performance or a system where every employee is rewarded equally will lead to lower performance in an organization that relies on innovation. In this type of organization bonuses, options, pay and promotion has to be closely linked to innovation (Tushman & Nadler in Starkey, 1996).

A remuneration system in the knowledge economy should according to Despres and Hiltrop (1995) address all the factors that influence individual performance. Pecuniary rewards addressing extrinsic motivation is only a starting point and the focus of attention will be on factors influencing intrinsic motivation (e.g. autonomy, achievement and personal growth). Furthermore must compensation and reward systems shift from rational and objective to subjective and soft performance measures. What Despres and Hiltrop (1995) mean is that intuition, experimentation and challenge of accepted wisdom is important in knowledge organizations. In traditional organizations a narrow set of business drivers existed and a single best way to do things. As knowledge is in focus and teamwork is an important part in the creation of knowledge Despres and Hiltrop (1995) suggests the use of appraisal methods that involve peers, superiors and customers.

Sveiby (1997) suggests that when it comes to pay one can think in terms of value added and to pay people a reasonable proportion of the value they create.

3.8 Fun at work - a Neuroscience perspective

This part aims at providing the reader with a short summary of contemporary research in the brain and linking this to factors influencing the building of an intelligent remuneration system. Current research focus some attention on the body hormone, endorphin.

3.8.1 Endorphins

A growing interest in the effect of endorphins in human behaviour justifies a short summary of recent findings. Endorphin is known as a substance in the human body that acts as a natural morphine and much research has been focusing on the pain stilling effect (Smith, 1993). Recent research findings also tend to emphasise the positive effect of endorphins on our health and general well-being. Well-being is affected through the brains pleasure systems and findings suggest that physical exercises stimulate the production of endorphins (Smith, 1993). Some findings also tend to imply that having fun at work and leadership also stimulates endorphin production. Gaiety at work stimulates among other things endorphins production which influences our feeling of well-being and also seems to influence performance and creative thinking (Miller, 1996; Abramis, 1992). Furthermore, people having fun at work are also more motivated by their work and also better at meeting job demands (Abramis, 1989). Abramis (1989) suggests the use of rewards and recognition to let people know they are valued as a way of stimulating well-being at work.

4 Empirical perspectives

This chapter will introduce the reader to five different professionals and the companies they represent. The information is based on interviews and presented as case studies. The purpose is to give the reader a thorough understanding of how compensation and motivation is applied in a business-context. The purpose is however not to compare different companies, it is rather to present a broad perspective on models being used in knowledge intensive firms. Furthermore should this presentation lead to a profound understanding of the contemporary remuneration-perspective used today.

4.1 The respondents

The empirical part of this study is based on interviews with four CEOs in relatively small or medium sized companies in knowledge intensive industries and one interview with a compensation and benefits manager in a large company that has undergone a major transition from a stable protected prosperity into partly compete in a more open market situation. This large company now considers itself to be more of a knowledge company. The interviews are presented as small case studies.

4.2 Case-studies of remuneration ideas

The representatives of the different companies give somewhat different presentation of their thoughts regarding compensation and motivation in their respective companies, even though there are strong similarities between the different companies. The case study is not intended to compare the five companies the purpose is rather to present a broad perspective on remuneration ideas in these knowledge intensive companies. The empiric findings presented in this chapter focuses mainly on financial examples.

4.2.1 Jonas Birgersson, Labs2, CEO; founder of Framfab and Bredbandsbolaget/B2

Jonas Birgersson is a well-known entrepreneur in the IT-industry. This interview is more general regarding motivation in knowledge intensive firms such as Framfab and Labs2 than specific for these companies. Labs2 is a broadband service provider with 44 people employed.

According to Jonas Birgersson rewarding is all about seeing to the needs of the human being. Rewarding the knowledge worker is first and foremost about satisfying the basic

needs according to the Maslow hierarchy of needs; the worker has to get a pay that satisfies their primary needs, the physiological needs and the safety needs. The need for food, water, sleep, shelter and safety can all be satisfied through a basic salary according to Jonas Birgersson (personal communication, 5 May 2004).

The next step when dealing with knowledge workers is to satisfy more advanced needs. They have to feel useful and gain respect for what they do and to feel that they can be of service to the company. Factors of significant importance are decent pay and a good manager.

In Framfab, the well-known Swedish Internet agency, this thinking was implemented through a lower basic salary than the market could offer, but it did cover the basic needs. To give the employee a feeling of being really involved in the company is give them a share of the company according to Jonas Birgersson. If the company makes a profit all the employees will do the same. This creates a feeling of that we all will profit from success. The feeling of being a part of the company, and getting a share of the profit is also a way of retaining talent in the company according to Jonas Birgersson (personal communication, 5 May 2004)

You should also give the employee challenges that are on the edge of their ability as well as a part of the success" (J. Birgersson, personal communication, 5 May 2004).

It is Jonas Birgersson's strong belief that the part of the compensation system that depends on the success of the company, e.g. bonuses, ought to be collective. If one person in a team receives a bonus based on his work in that team this will not be looked upon with ease from the other team members. Monetary reward systems are in the reality collective. Focus on individual performance measurement is according to Jonas Birgersson mostly a result of writings in the media. The team members know who is worthy of a piece of the pie or not. However, Jonas Birgersson is well aware of the fact that a large bonus always is considered to be wrong, it is the sum that makes it wrong no matter what value is created by the company. In the long run monetary rewards to an individual team member based on performance or value added will not work.

An analogous discussion is the example of open source programmers and communities on the Internet. What drives the members to commit their energy to the public is the feeling of being accepted by people you look up to. "If they use what I have made, it's gives me a feeling of satisfaction" (Jonas Birgersson, personal communication, 5 May 2004).

4.2.2 Bertil Östman, Sydkraft, head of compensation & benefits

Sydkraft, a company in Europe's largest private energy corporation E.ON Group and with 6000 people employed has since the deregulation of the energy industry undergone a transition into partly competing in an open market situation. According to Bertil Östman (personal communication, 12 May 2004) about 1000 of the 6000 employees is considered to be working in a more traditional worker role and the rest is considered to be knowledge workers in some way.

The company has grown very much and has become a larger player on the energy market. This has imposed the need of similar rules and regulation between the different companies. Therefore Sydkraft has centralized the HR department and a new organization has been implemented. What they hope to attain is increased mobility between the different companies in the corporation.

Compensation and Benefits is seen as a central role in the company in that the role is to buy the strength and the knowledge of the employees. All the employees have limitless contracts and it is up to the single company to negotiate the employee's salary with the labour union. This is considered to be unique since there is no guaranteed annual raise. The negotiations with the labour union and the financial limitations of the company determine the annual raise in salary. A company with a weak financial result will not be able to give a full raise and no generic solutions are used. However, it is not possible to give a zero percentage increase in salary since the employees would perceive this negatively.

What determines the individual employee salary is: individual objectives, workplace behaviour, responsibility, authorities, and the level of difficulty in the individual's role.

Key employees

About ten percent of the staff is considered to be key employees, which means that they are considered to be very important to the company and it is important that they remain with Sydkraft. One important factor is to monitor the salary level in other companies and to compare this with the level in Sydkraft. The key employees should not leave Sydkraft in favour of another company due to the salary.

Strong management control instrument

Bertil Östman (personal communication, 12 May 2004) points to the fact that the compensation and reward system can be a very strong management control instrument in a company if you want to use it in such way. He also argues that it can be strong in both directions, as a reward or as a punishment.

Individual performance

Individual performance is considered to be subjective, it is hard to measure and it is only an approximative estimation of the individual's actual performance. People with financial responsibility can however be evaluated objectively on performance with the help of economic factors.

Base and variable pay

In Sydkraft two different types of pay is being used, base and variable. The variable salary is however mostly used at management level. The base pay is revised once a year according to procedures described above. In some activities and projects another system is being used, calculated cost in relation to result. Performance above calculated objectives results in a share of the surplus in relation to hours worked. According to Bertil Östman (personal communication, 12 May 2004) this provides incentives for enhanced processes and performance. The general remuneration system within Sydkraft does however not provide this opportunity to the employees.

Sydkraft has also got a bonus or profit-sharing program. According to Bertil Östman (personal communication, 12 May 2004) this program is in general considered to be a

more of a benefit than compensation and is not an attempt to drive performance since there is no relation between the two. Bertil Östman (personal communication, 12 May 2004) points to the importance that bonuses are distinct and they should be linked to performance. This profit sharing or bonus program employed in Sydkraft is seen as an obvious annual recurring payment and since everyone expects to get it every year it does not enhance performance. The bonus is also divided in equal shares to the employees. The bonus viewed as a benefit will however contribute to build the image of Sydkraft as an attractive employer.

Bertil Östman (personal communication, 12 May 2004) thinks that good performance should be rewarded and that the employees should want to perform well. Responsibility should also be rewarded, but if the employee does not perform his duties well then the development of the pay should be affected. Remuneration system in a company can be an important factor in attracting talent to a company. In Sydkraft however it is not always communicated externally.

Good ideas are rewarded in Sydkraft even though a general innovation or idea reward does not exist, creativity and innovation will not directly impact the pay check. The rewards used are subjective rewards and occur when e.g. someone has made a proposal to buy a new business.

The compensation system employed in Sydkraft today is built around performance and productivity with a connection to profit. However, a direct connection to learning, competence and organizational knowledge does not exist. A compensation system should contribute to enhancing the profit in the company and the system employed today does this to some extent. It is also important to adapt to the systems employed by the competitors so that one is not trapped in a less favourable situation. This is exemplified with a situation when a benefit in one company led to a lost contract opportunity.

4.2.3 Rolf Nilsson, Connectblue, President

Connectblue is the leading provider of Bluetooth for professional use in segments such as industrial, medical, logistics, and instrumentation. Connectblue almost solely employ engineers and has 17 people employed. The company acts in a knowledge industry where it is important to attract the best talent and an up-to-date pay is considered to be an important factor.

Besides a competitive pay Connectblue also offers its employees hygiene factors such as free working hours and wireless office that provides the employees with the possibility to work for example at home (Rolf Nilsson, personal communication, 18 May 2004). The company also offers beneficial pension appropriations where the employees themselves can select where their money should be invested.

Connectblue also uses an options program (not what is known as employee options) based on smart planning to make it as beneficial for the employees as possible. There is however some problems connected to this program; the employees are unaware of the taxation rules that will be used when the option is redeemed. Employees that travel a lot are also offered car benefits. Connectblue does not use any bonus-programs.

Rolf Nilsson (personal communication, 18 May 2004) also argues for the importance of showing your appreciation when an employee has made an extra contribution. This can be done individual or collective.

The purpose of the remuneration system in Connectblue is to motivate and retain competence. Eminent people should also actively choose to work at Connectblue. In Rolf Nilsson's (personal communication, 18 May 2004) experience many engineers are motivated by the fact that they are able to work with new technology, which in turn mean that they have access to continuous learning and a status factor.

The remuneration system is connected to the overall business strategy through Connectblue's ability to attract the best and most motivated talent in order to succeed with their objectives.

Performance & Pay

There is not an evident connection between performance and remuneration. However, there is an indirect connection by means of the voluntary options-program. Due to taxation rules in Sweden the company is no able to give the options away for free.

The salary level in Connectblue is dependent on statistics and on other companies' payments. The latter is available through a large personal network of people working in other companies. What Connectblue remunerate their employees on are knowledge, access to networks, and loyalty (retaining the competence in-house).

Regarding loyalty Rolf Nilsson make some interesting ruminating, loyal people often runs a risk of not being up-to-date in their pay and Rolf Nilsson makes a parallel to other companies where he has insight. It is very important that even those who are loyal and stay with the company has got an up-to-date pay. Many people tend to focus too much on the size of the annual raise instead of the overall level of the pay.

The pay is remuneration since it gives the employee recognition on performance and therefore it is also important how the pay develops over time. Loyalty is best attained though a correct level of the salary.

Being greedy is to do oneself a disservice (Rolf Nilsson, personal communication, 18 May 2004).

There is a problem in viewing monetary remuneration as a factor of motivation since feedback, leading to motivation, should be instant and if this were the case you should give the employee money in his hand whenever he did some extra contribution. This is however not possible due to taxation.

The remuneration systems do however contribute to enhancing the competitive position of the company through the motivation of the employees, creative ideas are also remunerated.

If you are motivated good ideas will come (Rolf Nilsson, personal communication, 18 May 2004).

Only monetary remuneration does not work according to Rolf Nilsson (personal communication, 18 May 2004). It is also important that the employee is visualized receives some kind of recognition; money does however implicate a symbolic value.

Regarding the remuneration systems used in companies today Rolf Nilsson says that they do not take into account the full value of the employee, since a worthless engineer can earn more because of seniority than a very talented younger engineer.

4.2.4 Örjan Johansson, Anoto, CEO

Örjan Johansson is the CEO at Anoto, a Swedish hi-tech company with unique solutions for transmission of handwritten text from paper to digital media and scanning of printed text. The company has 132 people employed. Major shareholders in Anoto are Norden Technologies, Capital Group and Logitech International S/A. The Anoto share is traded on the Stockholm stock exchange

Knowledge is a very central part in Anoto since the company competence is built into the products and new technology is the way to survive. The products also hold a very short life cycle so continues development is needed.

Pay

Anoto applies three different types of payment, base salary, stock options, and rewards based on projects – can be seen as a bonus. Örjan Johansson argues that the central issue regarding pay is that it is sufficient. A too small pay will be a problem, but a too high pay will not lead to improved performance. The real reward in a knowledge intensive high-tech firm is instead the chance to work with new things and new technology and also work in the culture that the company is building around these factors.

Even though a large pay do not increase the satisfaction it can contribute that competence remains in the company. Örjan Johansson points to the fact that pay can be a major factor of importance when it comes to attracting people. However a strong brand can lower the demands and lead to the acceptance of a smaller pay. This can be summed up as, it is important that the pay is not too small and that the pay creates comfort.

According to Örjan Johansson engineers have got a generally lower salary than other professionals and this is due to the lesser importance that engineers emphasizes on salary. Other groups of professionals however stresses salary as important according to Örjan Johansson.

Money can have a strong symbolic value, but “a tap on the shoulder” may have equal or a more significant importance as a reward. However a bonus can be linked to performance. The individual pay is thoroughly linked to the individual performance and the whole process is carefully done. An industry salary-index is used as a reference during the process. But Örjan Johansson also points to the fact that if you want to recruit the elite it will be more costly.

The individual person is more important in a company than the predetermined role he or she plays and in many companies the role is emphasis instead of the individual. This

may be due to that it is easier to just look at the role in larger companies and to recruit a person to play a specific role. At Anoto the human resource function is given the task to work with the selection processes and this may lead to increased focus on the individual person. There is a risk in all companies that a person who is more competent than yourself and who will earn a larger pay is not recruited. (Örjan Johansson, personal communication, 1 June 2004).

High performers

When it comes to the individual's performance in a company some individuals make all the difference, they are the high performers. Often these persons have shown their ability by winning contests and maximizing their performance and they often also possess the ability to think "out of the box". This is a sought after ability among engineers, the ability to grasp the context in which they act. High-performers also contribute to increased value of a company. Customers and partners often emphasises the ability of the individuals they come in contact with during different projects.

When it comes to important qualities that determine the individual's salary Örjan Johansson mentions direct knowledge, ability to grasp the context and collaboration. Some individuals also possess extensive and valuable networks, but most of the individuals do not.

Regarding salary there are some dissatisfactions such as people who do not value money ought to have a larger salary in some cases. In motivating these persons interesting tasks and a fair pay is important. However these individuals are also more demanding in that they cannot directly be bought with money.

The basic salary is very important according to Örjan Johansson and options are not seen as important. However employee stock options can be regarded as "golden handcuffs" in that they tie the individual person to the company. When leaving the company they are not allowed to keep their options.

Örjan Johansson agrees that remunerations linked to the individual's value to organization are important and that corporate goals and sharing the profit with the employees based on their contributions can be important. However, a stock related value on the rewards is more important since value created on the stock market is visible after 6 to 12 months and in profit after 12 to 36 months.

A remuneration package based only on value added would according to Örjan Johansson create a company with entrepreneurs, risk-takers, and individuals without fixed costs and without families. Örjan Johansson believes that many individuals are not willing to take risks. However, this system would probably be well suited for the management.

Örjan Johansson would however like to increase the non-fixed part of the salary through options and other solutions.

4.2.5 Torbjörn Johansson, Novotek, CEO

Torbjörn Johansson is the CEO at Novotek Sverige AB a company working with industrial IT and automation. Novotek was founded in 1986 and the share has been traded on the Stockholm stock exchange o-list since 1999. The company has 140 employees (65 in Sweden).

Torbjörn Johansson categorizes Novotek as a knowledge company since employees and the company possesses deep knowledge in the products they sell and thorough understanding of the customer's processes. The IT and automation systems that Novotek builds are adapted to the specific needs of the customer. This knowledge has been built during many years. A large part of the professionals employed in Novotek are engineers but also other professional roles are represented.

Rewards and Remuneration

The majority of the people employed at Novotek have got a fixed monthly salary. Project managers, sellers and managers have got a bonus related pay. The bonus is related to individual performance and company objectives. New technology is also often considered to be a prime motivator in these kinds of organizations.

The sellers have got an annual budget with bonus payments when different objectives are met. Furthermore is the salary of the seller highly individual and the sellers are able to earn up to 2 months of extra pay a year. The purpose of the bonus is to stimulate the sellers to extra ordinary performance. The bonus payments are quarterly.

The bonuses of the project managers are related to the success in different projects and the project manager is awarded a part of the project surplus. Projects managers are compensated when working overtime and their bonuses are therefore not as large as the one for the sellers (½ to 1 month of extra pay a year). The bonus stimulates the project managers to perform well and is seen as a tap on the shoulder. This also links company performance to the individual pay.

Money is recognized as a motivational factor in Novotek, and this is evident since the performances of the sellers are higher in the period that precedes bonus payments. Also, the activity of the sellers is much higher if they are close to a bonus objective according to company statistics (Torbjörn Johansson, personal communication, 2 June 2004)

The fixed pay received by programmers is based on individual performance, qualifications, and also informally linked to the market since the employees monitor salary given to professionals in other companies. The salary is set through individual conversations with the manager.

At Novotek there is no deliberate connection between strategy and the remuneration system, even though a market-based salary is necessary to attract competence. Even in retention management is the salary-level important and people who are valuable to the organization is given a salary above market-average.

Other remunerations

At Novotek other remunerations have also been used. Sometimes, specific objective are set and if the objectives are met everyone will get an increased pay. Even though this is seen as fun, the performance increasing effect is not certain. However, what has been noticed is that feedback generates some commitment to the company objectives.

Torbjörn Johansson also argues that too much emphasis on rewards may lead to loss of the rewards performance increasing effect.

Rewards do not necessary have to be pecuniary, seminars abroad awarded to high achievers is one example. These seminars are dual-purpose since they are both competence enhancing and a reward. As with the other rewards certain performance objectives have to be met to receive the reward.

Torbjörn Johansson stresses the importance of the individual instead of the role they play in a company; the individual is the one who can maximize performance. The value of an individual in a company is however very hard to estimate.

Dissatisfaction

There is a risk according to Torbjörn Johansson that the company stagnates in the development of remunerations, new ways of remunerating is desirable – but often old models are used over and over again.

We want to find new ways of remunerating and we want to be more creative (Torbjörn Johansson, personal communication, 2 June 2004).

At Novotek there is no deliberate link between knowledge creation and remunerations, even though rewards have been used occasionally in learning situation. At one occasion the employees were given a very short time to prepare themselves on their spare time to get an authorisation. Therefore, all employees who succeeded in getting the authorisation were rewarded with a PDA. This had a very stimulating effect on the employees. The time that passes between objectives and rewards should be brief. Often rewards are more effective if objectives and offers are made with a months' notice.

Stock options have been proposed as a part of the remuneration package and many of the employees are shareholders. But it is regarded to be very difficult for employees to affect the value of the stock.

Torbjörn Johansson often stresses the importance of feedback and of occasional rewards when the company performs well. Also, the employees want to be up to date regarding how the business proceeds and therefore it is important to publish key performance indicators.

5 Analysis: Towards intelligent rewards

This chapter analyses the theoretical findings presented in chapter 3 in relation to the empirical findings in the case studies presented in chapter 4. The purpose is to get an understanding of important elements in a remuneration system. The analysis will be based on the three theoretical perspectives intellectual capital, motivation and knowledge management. The case studies in chapter 4 will furthermore be complemented by expert opinions from interviews with motivation or remuneration professionals.

5.1 Current practise in knowledge companies

To get a better understanding of how the respondents work with remunerating knowledge workers today the most important issues from the cases will be analysed.

The respondents consider themselves representing knowledge companies. The definition of a knowledge intensive firm is a firm that uses knowledge as a source of competitive advantage (Edvinsson & Sullivan, 1996). According to Stewart (1997) knowledge work is characterised by information and knowledge as the most important raw material in producing services and products. The respondents consider knowledge and competence to be an embedded part in the products and services they offer.

*The employees and the company possess deep knowledge in the products that they sell and thorough understanding of the customers' processes
(Torbjörn Johansson, personal communication 2 June, 2004)*

The knowledge worker is considered to play a more vital role in the success of knowledge companies than the traditional worker did in traditional companies. There seems to be an increased emphasis on the performance of the individual and as Örjan Johansson at Anoto points out:

Some individuals make all the difference (personal communication 1 June, 2004)

There also seems to be a difference in the performance of different individuals in these companies and at Sydkraft about ten percent of the employees are recognised as being of key importance. Recruiting top talent is an important task in the studied companies and a competitive compensation system is thought of as being a relevant tool in both recruitment and retainment. The human capital of the firm has an increased impact on the success of these companies and it has become important to be an attractive employer. But as Mayo (2000) points out just employing capable people will not lead to the full implementation of the capability in the organization there has to be something more, e.g. a system that will reward and motivate people.

High performing individuals are not only important internally but also externally where they in relation to customers can contribute to enhancing the value of the company.

5.1.1 Compensation and rewards

In the companies studied during the empiric phase there is a focus on fixed pay and the respondents' presents an almost unanimous view regarding a system based on this premise. All five companies apply fixed pay in the compensation of knowledge workers and they also consider pay as being important in attracting and retaining talent (Figure 11).

Jonas Birgersson does however not agree totally with this view since according to him fixed pay should be intended to satisfy the basic needs of the knowledge workers. Higher level needs should instead be satisfied in other ways. At the well known internet-agency Framfab a lower base-salary was used (Jonas Birgersson, personal communication, 5 May, 2004)

Performance-based pay that rewards high performance is used in some ways at Sydkraft and Novotek. Performance-based pay is however not used in the general compensation of knowledge workers; instead it is used for special project activities and for management positions. The system used at Sydkraft where expected costs in a project is calculated and then compared to actual cost and where employees will get a share of the surplus if they perform above expectation seems to be an interesting performance-based system. Overall is performance a subjective part influencing salary during the annual revision. An increase in salary is recognised as a sign of good performance.

Figure 11. Overview of financial reward and compensation models used in the cases

	Framfab	Sydkraft	Connectblue	Anoto	Novotek
Fixed pay	■	■	■	■	■
Performance-based pay		□			□
Options			□	■	
Bonus	■	□		■	■

■ Applied in the remuneration bundle

□ Applied only for some categories of employees or used in a special way

Attracting and retaining talent

Attracting and retaining talents is supposed to be of vital importance for knowledge companies now and in the future according to Fishman (1998), who also predicts a decreasing supply. Bright people add value to a knowledge intensive firm and the human capital is increasingly becoming the true source of sustained competitive advantage. In being an attractive employer pay seems to be a major factor, but a strong brand can lower the demands on high salary. The companies studied in the cases

emphasises the importance of the market salary level and to use this as a reference in their own company. A salary level below the market salary level is considered to make it harder to attract and retain talent; the salary has to be competitive in relation to other companies. Attracting highly skilled professionals is recognised as a process that is costly.

The overall compensation and reward system used in these companies is recognised as a vital part in the business strategy through its ability to attract and retain talent. After all, talented people are the key to succeed with company objectives.

Monitoring the market salary level is one way of ensuring that key employees do not leave a company in favour of another, based of dissatisfaction with salary. Monitoring salary level concurs with Herzberg's two-factor theory (1959, 1966). Salary is recognised as a hygiene factor that in it self do not lead to satisfaction but can however lead to dissatisfaction.

As a part of the compensation system several of the companies studied also uses stock options. Hammonds (2003) mean that the use of stock options can be very effective since the upside potential apparently attracts highly talented people. Options can also lead to a lower demand on the level of fixed salary. Options do however have to offer a considerable incentive relative to the fixed salaries. Anoto uses stock options in their remuneration bundle. A strong argument in favour of stock options is, according to Örjan Johansson at Anoto, that value created in the company will be visible through the stock market after 6-12 months and in company profit after 12-36 months.

Options were very popular during the end of the 90's. But as Hammonds (2003) concludes, the popularity might have taken a downfall due to the bust in the market in 2000. Besides just attracting talent, the stock option program at Anoto also tends to act as a strong instrument for employees to remain at the company, employee stock options can be regarded as "golden handcuffs" in that they tie the individual person to the company as expressed by Örjan Johansson. When leaving the company the employees are not allowed to keep their options.

Stock options do however provide an incentive to a short-time profit maximization process especially at a management level in a smaller company (Törnwall in Dagens Industri, 25 March 2004). The individual knowledge worker is however hardly able to influence the short time stock valuation but even so stock options may provide an incentive to short-time thinking.

5.1.2 Key factors determining the individual fixed pay

The philosophy behind a fixed pay system is that good performance should be expected from good people being well paid (Anthony & Govindarajan, 2001). The determinants of fixed pay can be e.g. a competence-factor-framework developed within the organization (Beardwell et al, 2004). A fixed pay system can however consider previous performance and revise the salary according to this. The studied companies basically rely on a market salary-index as a guideline. The role that the individual worker will take in the company determines approximate salary level. Other factors influencing the salary level are individual objectives, previous

performance, responsibility, knowledge and skills. This could be seen as a competence-factor-framework as discussed by Beardwell et al (2004). Networks are in some instances recognised as important and valuable to the company even though most non-management employee networks are considered less valuable. Since the respondents do not work directly with these types of issues this picture is probably not complete. The actual existence of valuable personal networks is probably not visible, but as recognised by Despres and Hiltrop (1995) networks are essential in knowledge organizations (figure 12).

Figure 12. Key factors that determine the individual remuneration

Sydkraft	Connectblue	Anoto	Novotek
Individual objectives	Knowledge	Direct knowledge	Previous performance
Workplace behaviour	Access to valuable network	Ability to think out of the box	Qualifications
Responsibility	Market salary level	Collaboration	Market salary level
Level of difficulty		(Network)	
Market salary level		Market salary level	

As shown in figure 12 the market salary level constitutes a standard in defining the salary of the individual employee. This view corresponds well with how the base-salary is set according to Ewa Bryme at Watson Wyatt (personal communication, 28 May 2004). The base-salary often has got a very strong market connection. The base-salary from a market perspective focuses on a role, not on an individual. Most people that get employed will fill a role in that company and not directly be an individual employee. The salary is adjusted due to special skills and knowledge; however the individual, external from the role, is often compensated through the variable part of the pay if this is applicable (Ewa Bryme, personal communication, 28 May 2004).

The base-salary is often considered to be very important and a high level of prestige is often bound to it. Most employees have only got this base-salary and no bonus or variable part, so when comparing salary it is the base-salary that is important. Furthermore is it the demand on the market that decides the level of the market salary-index. This explains the focus on base-salary and fixed pay according to Ewa Bryme. Furthermore, a great deal of the value of an employee is embedded in the base-salary (Ewa Bryme, personal communication, 28 May 2004).

The key factors determining the individual remuneration in these companies seem to be mostly traditional (figure 12). Despres and Hiltrop (1995) consider knowledge work to be more complex than traditional work and mean that paying for position will contradict the reality of knowledge work. The position in knowledge work has to be designed around the individual employee and their talents. This way of thinking contradicts current ways of acting and calls for new ideas of compensating employees in the knowledge economy.

Recognition of performance can be embedded as a symbolic value in pecuniary rewards. Achievements on the job can result in a raise in pay, the performance is recognised and rewarded. This is discussed by Herzberg (1959) as well as during the interviews. As expressed during interviews the pay is not always up to date and loyal people or people not working with a preliminary focus on money may run a risk of not being paid enough. Though money is not preliminary for these people the symbolic value of money may be important in the long run. Instant feedback is often considered to be most effective but with current taxation rules in Sweden, which will punish pecuniary rewards, it is hard to use a system of instant feedback. Rewards can however instead be given as opportunities to travel to interesting seminars or as a PDA. As the source of motivation shifts from person to person it is important to understand what drives the individual knowledge worker in a company. The risk of too much attention on rewards is a loss of the performance increasing effect.

5.1.3 Performance and pay

The respondents in this study agree on the importance of rewarding good performance, but the general compensation systems applied are looking at performance in the past and not current performance. The positive effects of e.g. profit-related pay have been studied by Lazear (2000). Profit-related pay may provide an incentive for workers to increase effort and Lazear (2000) provides support to performance-related pay theories.

In a performance-related pay system the employees must prove their worth through performance unlike in the fixed pay system. In exchange for performance the employees receive a share of the profit when times are fortunate for the company. In a similar way will the employees suffer when times are bad. This system is recognised as a possible way of improving performance in some organizations and also as a way to make the employees more readily identify the organizational goals according to Beardwell et al. (2004). In the studied companies there are not always a deliberate linkage between performance, knowledge, value creation and the pay received by the employee.

5.2 Remunerating knowledge workers

The knowledge worker is different from the traditional worker in many ways. Both the input and output is information, and knowledge workers have a much shorter cycle before their skill become obsolete, which calls for more active learning (Sparroq & Hiltrop, 1994). The companies included in this study do not directly reward knowledge creation, at least there are no systems rewarding the creation of knowledge.

Knowledge workers play a more significant role in the long-term development of the company. Sustained success in knowledge companies is based on the creation and sharing of knowledge and the compensation and reward system applied should support this and not hinder it. Traditional remuneration systems often do not recognise people to the success of the company and therefore fails to support new

business objectives. These systems also seem to lack the ability of delivering expected results (Sparroq & Hiltrop, 1994; Kohn, 1993).

In knowledge companies much attention is focused on the performance of teams (Despres & Hiltrop, 1995) and therefore should the remuneration system take into account the team as also discussed by Jonas Birgersson. According to Jonas Birgersson compensation systems promoting individual performance may evoke irritation among members in a team. Monetary rewards are in the reality collective and the focus on individual performance measurement is mostly a result of media attention. The team knows who is worthy of a share of the gain or not (Jonas Birgersson, personal communication, 5 May, 2004). Motivational theory (e.g. equity theory, expectancy theory and partly social-cognitive theory) do however emphasise the importance of feedback and the importance of compensations and rewards related to individual performance and Edvardsson (personal communication, 4 May, 2004) mean that the evolution of compensation systems has gone from collective performance measurements to focus on performance of the individual. With both the team and the individual as important units of attention, the system ought to be dual, both individual and team based.

In the social-cognitive theory it's the individual who is in focus and the individual who sets his own goals. An interesting part of this theory is that if external rewards are not in harmony with personal values it may cause conflicts within the individual. Rewards for something that they devalue can lead to self-contempt. Likewise can punishments for a behaviour that the individual values highly lead to a conflict. There are also people whose sense of self-worth is strongly invested in some convictions that they won't compromise (Bandura in Pervin & Oliver, 1999). Some people can however withstand with performance even if external rewards and support is not given, an obvious example is innovators who sustain their effort through self-encouragement. Knowing what the individual knowledge worker values, should be regarded as important based on social-cognitive thinking regarding motivation.

The equity theory states that rewards have to be fair in relation to rewards received by others else the individual will be feel dissatisfied. The reward should balance the effort put in by the employee. Like in the social-cognitive theory the individual has a feeling of what is fair in relation to performance. Goals act as an external objective to the individual but can possible be harmonized with the individual's values and goals. Goals are important as guideline for behaviour and can focus attention on the right things as well as enhance performance.

5.3 Intelligent remuneration – future practise

As discussed in the introduction and in the theoretical phase several research studies claim that traditional remuneration systems fail to accomplish the most important results; contribution to strategic objectives and motivating employees to maximize performance. Effective remuneration systems must also be externally competitive and rational in the organizational context (Despres & Hiltrop, 1995).

5.3.1 Ownership of knowledge – a key issue

The most interesting question to discuss is who owns knowledge in a knowledge company. As Nonaka (1991) recognises knowledge creation in a company rests on the individual knowledge worker and the personal commitment and integration of the company's objectives by the individual employee. The individual workers can be seen as investing in the company through the personal human capital they possess. The organization compensates the individual through providing satisfaction of needs. The Maslow needs hierarchy can be regarded as a model for compensation of the individual. A century ago the organization satisfied the basic needs and that was recognised as being good enough (www.volitionalpartners.com), but today employees are struggling for self-determination. The individual employees are more of investors who seek to maximize their return of both tangible and intangible elements in Maslows need hierarchy. The individual knowledge worker invests e.g. knowledge, experience and relationships. The reason for doing so is that the company can be considered to be an opportunity platform with a structural capital that will result in the best leverage of the investment (www.volitionalpartners.com).

This is why an intelligent remuneration system is considered to be important. With increasing awareness of the value that the individual generates in the company and the importance of integrating company objectives with those of the knowledge worker, the question is how the knowledge workers should be compensated for the use of their personal human capital, their brain power? As recognised by Bertil Östman the purpose of compensations is to buy the individuals knowledge (an HR perspective). In the perspective of an intelligent remuneration system, reward should be based on the individual's ownership of the personal human capital.

5.3.2 Motivation

Besides providing a return on the investment done by the individual other factors are needed. In the interviews the respondents talks about the importance of interesting and fun tasks. Apparently, the high-tech environment supported by a strong organizational culture can provide stimulation for the knowledge workers. Some people even seem to have a lower salary than they deserve but instead they are given the opportunity to work with interesting technology. The social-cognitive theory provides an understanding for this phenomenon through the ability of individuals to self-regulate and self-reward. Bert Westerlund (personal communication, 16 June 2004) means that the social cognitive perspective offers a modern view of motivational psychology regarding knowledge workers. In the social cognitive perspective people are not working, primarily to maximizing pleasure and reward. Self-respect and self-satisfaction obtained through a job well done can be more valued than material rewards. Rewards have to be seen in its context, knowledge workers has their own self-imposed standards of adequacy that has to be met before they accept rewards to themselves. Active learning and new technology can also be seen though a status perspective where knowledge in new technology could enhance the status of the individual. This knowledge could possibly also satisfy higher intangible needs in Maslow's needs hierarchy.

The theoretical part presents endorphins as an important component in current research of the human functioning in a neuroscience perspective through its capability of increasing the feeling of well-being. Not totally unexpected, research suggest that fun at

work is important through the ability of increasing the level of endorphins. It is also considered being a well-known truth that the knowledge workers require something more than just money to be satisfied, e.g. gaiety at work (I. R. Edvardsson, personal communication, May 4, 2004). The respondents in the interviews also point to the fact that knowledge worker in their companies have fun and interesting work tasks and that this is a reward to the employee (figure 13). A strong culture valuing these factors also contributes to a feeling of a fun work.

Figure 13. Examples of non-monetary remuneration used in the studied companies

Framfab	Sydkraft	Connectblue	Anoto	Novotek
Feel useful	Subjective rewards	Hygiene factors	New technology	Feedback
Respect		Social recognition	Tap on the shoulder	Attend seminars
Social recognition		New technology	Social recognition	
		Continuous learning	Interesting tasks	

Recurring in the social-cognitive theory is the importance of raising the individuals' belief in their own capabilities through e.g. assigning tasks in ways that will bring success. Failures create self-doubt and it is therefore important not to place people prematurely in situations in which they are likely to fail (Wood & Bandura, 1989). Jonas Birgersson recognises the importance of providing challenging tasks to knowledge workers and challenging goals provides motivation according to the goal setting theory.

In a discussion with Leif Edvinsson (personal communication, 13 May, 2005) the concept of brain stalling was introduced. In Leif Edvinsson experience from Skandia, innovation is best achieved when the overall rhythm is slower. To try to force innovation through brainstorming will not result in the best ideas. As a hygiene factor at Connectblue the employees have a non-regulated working and the possibility to work from e.g. home. Even though this according to Herzberg do not lead to higher motivation it could possibly lead to better innovation quality if it is used in the right way.

5.3.3 Rationality in an organizational context

A major factor of importance to the intelligent remuneration system is that it is perceived as rational in the organizational and in relation to the national context. An intelligent remuneration system should not generate munificent pay totally out of proportion to the context and market where the company exists (Leif Edvinsson, personal communication 13 May, 2005). Thus for a company operating on the Swedish market, intelligent remuneration has to be relevant and in relation to what is considered to be rational. Furthermore should the remuneration be in proportion to the company profits and turnover. Cope (2000) discusses that the personal capital should be valued against what it is worth in an open market. To keep this rational a national market

guideline should be used since there is great difference between countries even within the European Union. Other aspects like e.g. social security also differs between countries and could make it harder to value the asset in a global market. But in a long run since human resources are predicted to be more mobile in the future (Fishman, 1998) it could be relevant to value the asset globally. From the mobile knowledge worker's perspective the return on investment could be depending on not only the organizational context but also on where in the world the personal human capital investment is done.

5.3.4 Contribution to strategic objectives – value added

Three factors constitute the core in the knowledge firm, the creation and sharing of knowledge and the utilisation of other people's knowledge (I. R. Edvardsson, personal communication, Maj 4, 2004). Value is created through knowledge creation and knowledge sharing and this process has to be supported by the remuneration system. Collaboration is the key to knowledge worker productivity or effectiveness (Sveiby, 2002). A system only focusing on individual performance and on individual knowledge would probably miss the key point. Knowledge work focuses on groups and projects and uses the strength of a collective mind. Thus the applied remuneration system must recognise the team as well as the relation between individuals as the context where value is created. In obtaining knowledge worker effectiveness Drucker (1999) point to the fact that knowledge workers should be treated as an asset. Knowledge workers are the key resource that knowledge companies invest in. A performance related remuneration system tied to company objectives through knowledge creation and sharing resulting in value generation ought to be a way to link remuneration and knowledge creation. Most compensation system tends to focus on previous attainments, but Beardwell et al. (2004) and Leif Edvinsson (personal communication, 13 May, 2005) points to the importance of also recognising the potential of the knowledge worker, the future performance.

The core of the concept intellectual capital is the company's ability to generate future harvest. The remuneration system is a part of the harvest but also provides nourishment to the company (Leif Edvinsson, personal communication, 27 May, 2004). Value added is considered to be the purest measure of a company's ability to create value (Sveiby, 1997) and is by Pulic (2004) considered the most appropriate indicator of business performance. The value added framework is also considered to be relevant to all stakeholders.

With the concept of value added directly connected to intellectual capital and value creation in a company this also ought to be relevant as a foundation for the intelligent remuneration system. Value added links intellectual capital and value creation to the investment done by individual knowledge workers through personal human capital. More over will it provide a measure related to the organizational context and therefore relevant to the company. Value added is relevant as a way of assessing intellectual capital, business performance and value creation and thus the valuation of knowledge workers by value added creates a direct connection to the intellectual capital of the firm. The value added perspective also provides a value free from age and seniority since these factors not necessarily mean that more value will be created. A problem recognised by Rolf Nilsson at Connectblue is that current remuneration systems do not take into account the full value of the employee, since a worthless engineer can earn

more because of seniority than a very talented younger engineer. Despres and Hiltrop (1995) consider knowledge work to be more complex than traditional work and mean that paying for position will contradict the reality of knowledge work. A value added framework might provide a closer value of the knowledge worker but with the influence of structural capital.

5.3.5 A balance of values

In a large study of effective human resource management practises done by the Saratoga Institute eight factors of excellent human resource practise were revealed. According to this study companies that exhibited the eight factors were among the most profitable firms in their industry (Fitz-enz, 1997). The eight factors are: Balanced values; Commitment; Culture; Communication; Partnering; Collaboration; Innovation and risk, and Competitive passion.

According to this study the balance of financial and human values in the organization is of vital importance to companies aiming at success. The focus should be on adding value rather than simply doing something (Fitz-enz, 1997, p. 12). According to this perspective the intelligent remuneration system must balance the values in the organization and not aim at a unilateral focus on financial values. The commitment factor states that companies should have a long-term dedication to a core strategy and be willing to change method without being tempted to chase management fads. The partnering factor highlights the importance of involving people both inside and outside the organization in order to leverage resources and speed up learning (Fitz-enz, 1997). The intelligent remuneration system should therefore also contribute to and reward relations and the use of valuable networks.

5.3.6 My summary of important factors

Figure 14 summarizes the factors that are considered being important in relation to more intelligent remunerations. The summary is based on both the theoretical framework presented in chapter 3, the empiric findings in chapter 4 and the analysis done in this chapter.

Figure 14. My summary of important factors from the theoretical, the empiric and the analytical phase to be included in the intelligent remuneration system.

Intellectual capital	Knowledge management	Motivational perspective	Empiric findings & Analysis
Enhance mind value added by human capital	Continuous learning important to enhance knowledge worker productivity	High salary does not necessarily mean high performance	Remuneration should take the full value of the human capital into account
Unleash the full potential of the human capital to enhance intellectual capital	New knowledge emanate from the individual	Remuneration should satisfy needs	Potential, future performance should be included in the remuneration system
Knowledge worker should be treated as an asset not a cost	Teams and networks important in value creation	Perception of fairness can influence performance	Employees should receive a share of the profit
Financial remuneration based on value added links intellectual capital to remuneration.	Autonomy can increase knowledge worker effectiveness	Goals guide behaviour	Value is created not only by individuals but also by teams
Remuneration should be related to organizational strategy	Attract and retain talent to enhance knowledge creation	Knowledge workers able to self-reward in relation to own goals	Challenging and interesting tasks enhance motivation
Remuneration related to the context and the structural capital		Social recognition important for knowledge workers	Hygiene factors e.g. non-regulated working hours can be important
IC-multiplier is an indication of leverage of human capital		Profit related pay can enhance performance	Knowledge worker motivation is complex and can differ from individual to individual
			Remuneration has to be rational
			Remuneration can be both tangible and intangible
			Status value included in salary

6 Discussion of findings and the development of a model

In this chapter I discuss the findings from the analytical phase and some parts of the theoretical framework. Characteristic factors that outline a model of intelligent remuneration in the knowledge economy is presented.

6.1 Intelligent remuneration

Based on the interviews it seems like the knowledge companies studied partly applies traditional rewards and compensation in their remuneration bundle. A competitive remuneration system is recognised as one of the most important tools in winning the predicted war for talent. In the knowledge economy sustained competitive advantage is achieved through the creation and sharing of knowledge, a process where talented knowledge workers play a key role. The purpose of the intelligent remuneration system ought to be to unleash the full potential of the human capital. Intelligent remunerations must focus on the mind value added by the employees; this is what will create value in the organization. The company can be seen as a dual-interest platform with strategic objectives that only can be reached by use of the human capital and a set of knowledge workers who wants leverage on their personal human capital (figure 15). Knowledge work is different from traditional work in that the knowledge worker has a more significant impact on the success of the company and as Drucker (1999) concludes; the efficiency of knowledge work and of the knowledge worker is one of the most important issues for the 21st century.

The analysis has provided several interesting perspectives. Traditional compensation and reward systems are considered to be ineffective and not supportive of new strategic objectives. It is proposed that effective compensation systems must contribute to strategic objectives, motivate employees to maximize performance, be externally competitive and rational in the organizational context. The model in this chapter outlines the most important factors of an intelligent remuneration system for the knowledge economy.

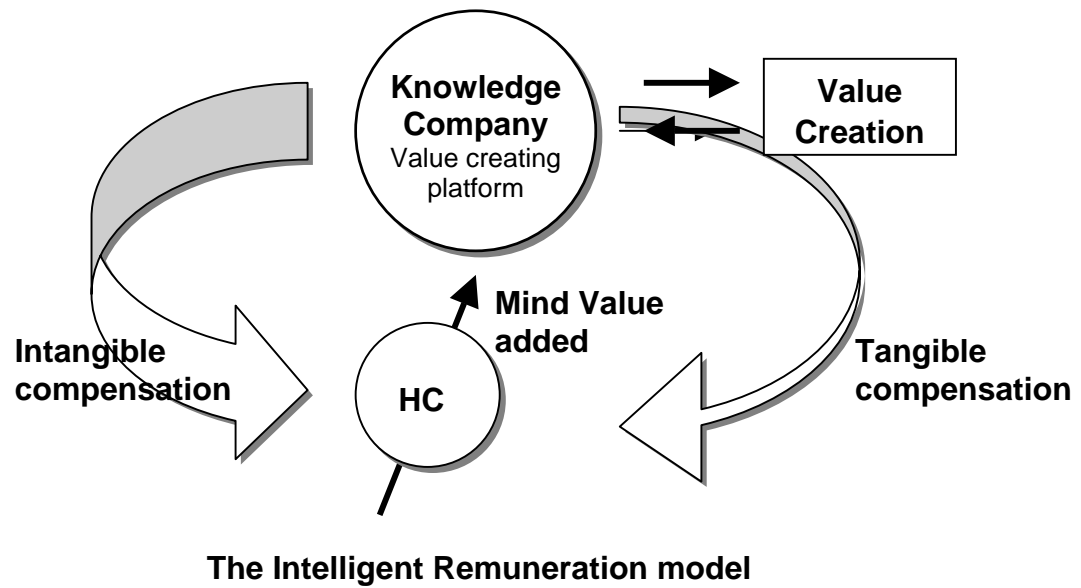


Figure 15. An outline of what constitutes an intelligent remuneration system.

The companies studied use the market salary level as a standard salary level tied to a specific position. This seems to be very common even in knowledge companies and the value of the knowledge worker can be seen as the base pay. The problem with this view is that all individuals do not create similar value to the organization. Even though it can be a sensitive subject and social aspects have to be considered the fact is that some individuals are able to contribute more to the success of the company. Using only a fixed salary could possibly lead to a lower level of mind value added by some individuals, if they perceive extra effort would not provide increased return. Some individuals with a strong internal reward system in accordance with the social cognitive theory can probably produce a continuous high level of value without large external compensation. But knowing the preferences of the knowledge workers regarding incentives and adapting the system to fit the individual and the organization context is probably a good idea when trying to enhance efficiency of the human capital.

6.1.1 Knowledge management perspective

The knowledge management perspective is the basis for value generation in knowledge companies. Value in knowledge companies is derived from the process of knowledge sharing and knowledge creation. The intelligent remuneration system must offer the knowledge worker a considerable incentive to release intrinsic mind value. Some traditional performance-based pay systems may hinder knowledge sharing since focus is too much on individual performance without incentives to share knowledge. In the knowledge setting, knowledge can be seen as individual and tacit. The tacit knowledge is then shared and made explicit in the organization (this process is described by e.g. the SECI model by Nonaka). The companies in the case studies do not directly compensate the employees on knowledge creation and relevant tools for knowledge evaluation are hard to find. The intellectual capital framework is one possible option for organization to evaluate the knowledge creating performance of the company.

In the intelligent remuneration system, innovation and knowledge creation can be remunerated both by tangible compensation through the value that is created and by intangible compensation. The latter can be recognition, support in self-actualisation and new challenging tasks.

6.1.2 Motivational perspective

Knowledge worker motivation is as recognised in the analysis very complex and different individuals are motivated by different factors. It is important to know what the employees value. Even so, is there a need for the organization to guide behaviour in direction of the strategic objectives. The proposed use of value added could act as a guide at an organizational level as well as on a knowledge worker level where the right behaviour is rewarded. An organization must however prove to be tolerant of mistakes and an innovation process can no be expected to always generate value.

Reward and compensations can be both tangible and intangible. Tangible rewards are e.g. money and material things given to the employees whilst intangible rewards are e.g. verbal recognition, the ability to work with a new project or attend a seminar. Hygiene factors like free working hours could also be seen as intangible rewards and compensation. Using a model like Maslow's need hierarchy as well as the social-cognitive perspective provides a view of the complexity encountered when building a system motivating knowledge workers. Some employees do seem to value intangible rewards higher and as shown in the interviews some people do not value money. A symbolic value can however be embedded in the pecuniary rewards but above a certain level some people value other things.

The remuneration system must be adaptable to different individuals where some will receive a larger tangible compensation, some a larger intangible. The organizational climate in the organization can also enhance and lessen the effect of the available resources in the organization (Camp & Ågren, 2002). Gaiety at work is important and some ways of providing this is through an interesting technological environment and interesting tasks. Goals and challenging tasks is also found to be important.

6.1.3 Intellectual capital perspective

Intellectual capital is the sum of the human capital and structural capital in the company. It is recognised that knowledge workers through their investment of human capital increase the intellectual capital. In return the knowledge worker wants to be compensated, a compensation that can be both tangible and intangible. Traditional systems do not recognise the full value of the knowledge worker since a non-performing engineer can earn more based on seniority than a very talented younger engineer. Value in the knowledge economy is not created through a position. Value is rather created in a structural capital context where the contribution by the human capital creates value. Age and seniority does not necessarily mean that more value will be created; these factors should therefore not be considered as important as in traditional systems.

Value added is suggested as being the purest measure of business performance and closely related to the intellectual capital. A valuation of knowledge worker based on value added could therefore provide a more real valuation of the knowledge worker. The

value added per professional is recognised as the purest measure of the ability to generate economic value in knowledge companies. Through e.g. Pulic's (2004) VAIC-index the efficiency of the intellectual capital and the different components can be calculated.

It is also suggested that knowledge workers has to be treated as an asset and a value added approach would enable this. The VAIC-index calculation regards employees as an investment and not as a cost. Cope (2000) discusses the possibility to value knowledge workers in an open market but the individual will probably see their worth in the market even with a value added perspective. The difference is that in a value added perspective the return on the individual's investment is related to the structural capital of the company. The individual knowledge worker can decide to work at a company where the leverage on the human capital investment will be the largest. The offering to the knowledge workers in a competitive remuneration system with both tangible and intangible return should be considered important by companies aiming at attracting and retaining the best and the brightest people.

Individuals and teams create value in knowledge companies and therefore should the intelligent remuneration system take both the value added by individuals and by the teams into account. The value added approach should improve the focus of value creating activities and strategic objectives. It will also give the employees a sense of being an important part of the company.

Nonaka (1991) argues that the personal commitment of the individual is the critical success factor in creating new knowledge. The purpose of the intelligent remuneration system is to unleash the full potential of the human capital and thereby enhance the mind value added. This may in turn lead to successful innovation in a company.

6.2 Contextual factors

External factors (figure 16) influencing the remuneration system have not been studied in this study. Some thoughts regarding remunerations and the context can however be discussed. The fact is that individuals differ in performance and to build a system that rewards high performers may be viewed as wrong by e.g. Labour unions. Rewarding people on the basis of performance and the value created and ignoring age and seniority is probably not popular. Both the organization and mentally strong, skilled knowledge workers will however probably benefit from such a system.

The social context in which the organization exists is another factor that can influence through the perception of what is socially reasonable and relevant regarding remunerations. Furthermore can the type of organization where the remuneration system is applied directly influence which remunerations that are possible to use and receive. The structural and organizational capital is the determinants.

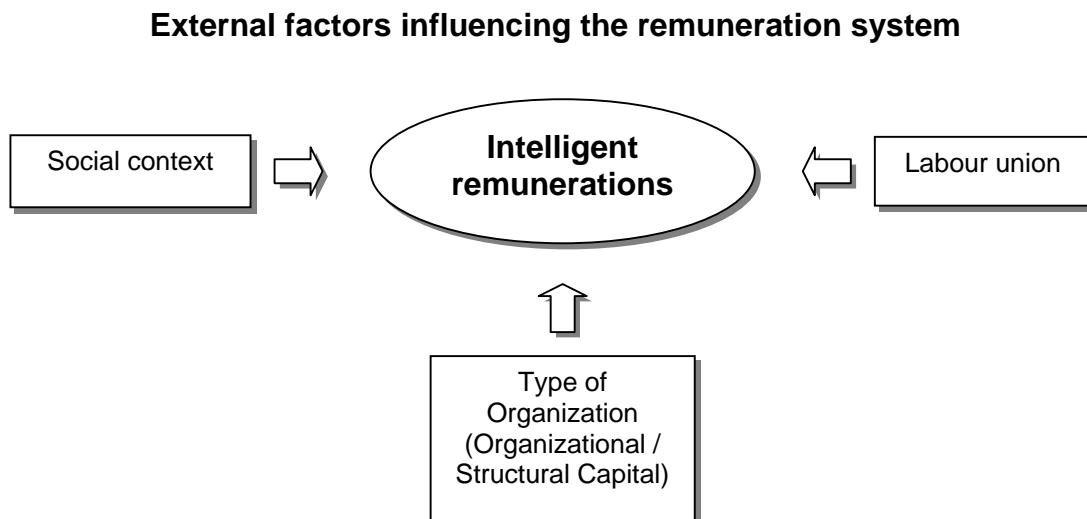
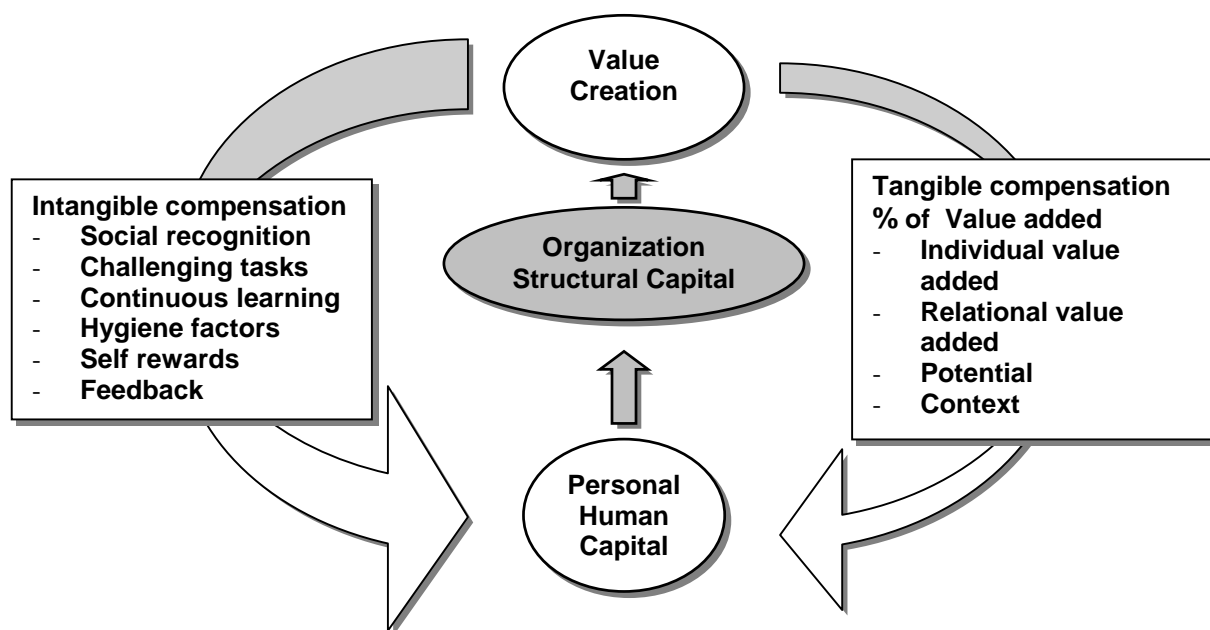


Figure 16. External factors that may influence an intelligent remuneration system.

6.3 Aspects of intelligent remunerations

These aspects aims to outline what characterize an intelligent remuneration system in the knowledge economy. The purpose of this study is to provide some aspects on how to compensate knowledge workers for the use of their brainpower. The purpose of the intelligent remuneration system is also to enhance the intellectual capital of the company through enhancing mind value added thereby unleash the full potential of the human capital.



Aspects of intelligent remunerations

Figure 17. The intelligent remuneration system uses both tangible and intangible remunerations, but with an emphasis on the intangibles.

6.3.1 The tangible part of the remuneration

The personal human capital invested by the individual knowledge worker in a knowledge company is what together with the structural capital creates value in the company. The return on invested human capital is both tangible and intangible and the purpose is to enhance the mind value added by the human capital. The tangible part of the remuneration is based on the added value. Theories of variable and profit related pay suggests that this kind of pay can lead to enhanced performance and that the knowledge workers more readily recognises the organizations goals and strategies. The fact that the tangible part that the knowledge worker will receive is based on added value could guide the knowledge worker in doing the right things according to the companies strategic goals in order to create value.

How large share of the created value that will be returned to the human capital could be decided by looking at e.g. some different factors. The individual value added aims at estimating how much value the individual has added to the company. Value creation in knowledge companies is often based on the efforts by teams and networks, the value that emanates from these relations should therefore also be included. Since value created in this way also is remunerated this could help to enhance knowledge sharing in the company.

As discussed earlier the future performance, the potential, of the individual knowledge worker should also be included as an important aspect that influence the size of the tangible remuneration. This could possibly also help when recruiting talent from other companies, as high level of performance probably cannot be expected at once. The aspect of context refers to e.g. where the company is located. The tangible part of the remuneration has to be contextually rational.

There are several different methods available to estimate value added on an individual level in the organization. I have not however found any particular method to present in this study as the purpose is to present the intelligent remuneration system in large. Value added can however be calculated for most positions in a knowledge organization including human resource professionals and other support functions as well as medical staff in hospitals.

6.3.2 The intangible part of the remuneration

The intangible part of the remuneration is of outmost importance to knowledge workers. This is the non-monetary part and provides the human capital with stimulation and also provides possibilities for enhanced efficiency of the human capital. Both autonomy and continuous learning are part of Drucker's (1999) six factors that determine knowledge worker productivity. Autonomy is also recognised as an important factors of intrinsic motivation (Smither, 1998). Since knowledge workers have a much shorter cycle before their skills become obsolete continuous learning can ensure the up-to-date knowledge and value in tomorrow's labour market. Continuous learning is the way to enhance the value of talents in the future.

Challenging and interesting tasks can as recognised during the interviews act as important incentives and rewards for knowledge workers. This should be a natural part of every remuneration system aiming at enhancing mind value added.

Hygiene factors are factors that not directly enhance motivation but rather ensure that employees do not become dissatisfied. Free working hours and wireless office can e.g. be factors of hygiene as recognised during the interviews.

According to social-cognitive theory of motivation, an individual is able to self-reward and people value self-satisfaction obtained through a job well done more than they value material rewards (Despres & Hiltrop, 1995). The intelligent remuneration system should also provide knowledge workers with the possibility to gain self-rewards. Knowing what the individual values is therefore very important since rewards and compensation not inline with personal standards can lead to dissatisfaction.

Social recognition has been recognised during both the interviews and the theoretical part of this study. Apparently, social recognition is a major factor of motivation to knowledge workers. Other people recognises the performance of the individual. This could motivate the employee to give more of his or her capability to the organization.

Feedback is mentioned among the aspects of intelligent remuneration. Continuous feedback is essential to keep people on track and doing the right things. Almost all factors in the intelligent remuneration system are however feedback generating based on performance.

6.4 Further research

From the perspective on intelligent remunerations presented in this study several possible topics for further research can be interesting.

- Framework for estimation of individual value added in different organizations
- More aspects that can influence and unleash the full potential of the human capital.
- Quantitative studies of factors influencing knowledge worker efficiency
- Quantitative studies based on the proposed intelligent remuneration is this study in relation to mind value added by the human capital

7 Conclusions

In this chapter I conclude the most important aspects and the logic of the intelligent remuneration system. Furthermore are possible pitfalls and critical success factors in implementing an intelligent remuneration system highlighted.

7.1 Logic

According to several studies there is a need for compensations that will contribute to organizational strategies. The idea of intelligent remuneration is considered to be one possible way of increasing this efficiency through a system where the knowledge workers more readily see their value and their performance in relation to organizational objectives.

The purpose of intelligent remuneration system is to align company objectives with personal objectives and to enhance the mind value added of employees in the knowledge organization. From an employee perspective the knowledge worker can be regarded as an investor investing personal human capital in the company and demanding a return of the investment. From a company perspective the investment from the knowledge workers should be optimised through a system that releases the mind value added by the knowledge worker.

An intelligent remuneration system is larger in scope and covers more processes than traditional pay systems. Both the company perspective and the individual employee perspective can be represented in one system. The company perspective is promoted through focus on value creating and the employee through leverage of the personal human capital. The intelligent remuneration system recognises the value of the employees and provides both tangible and intangible compensation for the use of the employees' brainpower.

Both individuals and teams create value in knowledge companies and the intelligent remuneration system must emphasise both. Since focus is on added value, age and seniority are not the most important factors unless the experience and knowledge gained from these two factors are converted into value.

The intelligent remuneration system systemizes both tangible and intangible remuneration to the knowledge workers in return of knowledge creation and the use of their capital asset, the brain.

7.2 Pitfalls

This part will very briefly discuss possible pitfalls when building and implementing an intelligent remuneration system.

7.2.1 Lack of management interest

A problem that faces new compensation systems is that they are not given much attention by top management and traditional pay systems do not recognise people as the factor leading to success (Sparroq & Hiltrop, 1994). A more intelligent remuneration system can enhance the value of a knowledge company and reward the right processes.

7.2.2 Corporate culture

Even though organizations can get pass the above mentioned management obstacle an even greater one exists, corporate culture. Corporate culture is known to be one of the largest obstacles in creating a learning organization according to Chase (1997). Proceeding from a theoretical perspective and framework and turning it into practise can be very hard. However if one wants to unleash the full potential of the human capital this is an obstacle one has to get pass.

7.2.3 Labour union

In countries like Sweden where the labour unions a given a strong role on the labour market the full implementation of a system where remunerations are dependent on added value can be controversial. This system recognises that performance differs between individuals and who creates most value to the organization will be rewarded the most.

7.2.4 Too much attention on the individual

Even though the individual knowledge worker creates value in the organization, the structural capital, networks and relations contributes to this value creation. Therefore knowledge sharing in the organization and in networks must not be hindered, as it is vital to the total value creation.

7.3 Critical Success Factors

Organization aiming at implementing more intelligent remuneration based on the perspectives proposed in this study must make sure that they have got an attractive structural capital. The IC-multiplier shows how effective the human capital uses the structural capital to leverage its potential (Berglund, Grönvall & Johnsson, 2002). The structural capital has to be larger than the human capital in order to give a turbo-effect otherwise the effect will be opposite.

With an intelligent remuneration system depending on value added, knowledge workers dock their human capital to the structural capital and the remuneration will be

dependent on the leverage effect. A large and attractive structural capital is therefore of vital importance.

Managers also have to recognise that value in knowledge organizations is dependent on the human capital. Traditional methods to compensate and reward may not be ideal in the knowledge economy. Greater emphasis has to be on intangible remuneration in order to enhance mind value added and to be able to attract and retain talent in the future. The performance of the individual must also be recognised. Furthermore should organizations recognise the value of an environment that stimulates the release of endorphins – a fun environment. Remember the discussion of options as golden handcuffs; can intelligent remunerations be “intelligent handcuffs”?

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8 Reference list

This chapter lists all references used in this thesis, published work, annual reports, personal communication and web pages.

8.1.1 Published work

Abrahamsson, B., & Andersen, J.A. (1998). *Organization – att beskriva och förstå organizationer*. Malmö: Liber.

Abramis, D.J. (1989). Finding the fun at work. *Psychology today*, 23, 36-38.

Abramis, D.J. (1992). Humor in healthy organizations. *HRMagazine*, 37, 72-74.

Andersen, I. (1998). *Den uppenbara verkligheten – val av samhällsvetenskaplig metod*. Lund: Studentlitteratur.

Alderfer, C.P., Kaplan, R.E., & Smith, K.K. (1974). The effect of variations in relatedness need satisfactions on relatedness desires. *Administrative Science Quarterly*, 19, 507-532.

Anthony, R., & Govindarajan, V. (2001). *Management Control Systems*. Singapore: McGraw-Hill Irwin.

Beardwell, I., Holden, L., & Claydon, T. (2004). *Human Resource Management: A contemporary approach*. Harlow: Prentice Hall.

Berglund, R., Grönvall, T., & Johnson, M. (2002). Intellectual Capital's leverage on market value. Master thesis, Lund University.

Brint, S. (2001). Professionals and the 'Knowledge Economy': Rethinking the Theory of Postindustrial Society. *Current Sociology*, 49, 101-133.

Camp, J., & Ågren, R. (2002). Inledande validering av KLS-analysen och en enkät om Psykosocial arbetsmiljö samt praktisk tillämpning av metoderna. Master thesis in Psychology, Lund University.

Caprara, G.V., Cervone, D. (2000). *Personality: determinants, dynamics, and potentials*. Cambridge: Cambridge University Press.

Chase, R.L. (1997). The knowledge-based Organization: An international study. *Journal of Knowledge Management*, 1, 38-49.

- Cook, M. (2004). *Personnel Selection: Adding value through people*. Chichester: John Wiley & Sons Ltd.
- Cope, M. (2000). *Know your value? Value what you know: manage your knowledge and make it pay*. London: Prentice Hall.
- Despres, C. & Hiltrop, J.M. (1995). Human resource management in the knowledge age: current practise and perspectives on the future. *Employee Relations*, 17, 9-23.
- Drucker, P.F. (1999). Knowledge-Worker Productivity: The Biggest Challenge. *California Management Review*, 41, 79-95.
- Edvinsson, L. (2002). The new knowledge economies. *Business Strategy Review*, 13, 72-76.
- Edvinsson, L. (2002). *Corporate longitude: navigating the knowledge economy*. Stockholm: Bookhouse.
- Edvinsson, L. & Bounfour, A. (2004). Assessing national and regional value creation. *Measuring Business Excellence*, 8.
- Edvinsson, L., & Malone, M. (1997). *Det intellektuella kapitalet*. Malmö: Liber Ekonomi.
- Edvinsson, L., & Sullivan, P. (1996). Developing a model for managing intellectual capital. *European Management Journal*, 14, 356-365.
- Evans, B. & Evans, C. (1957). *A dictionary of contemporary American usage*. New York: Random House.
- Festinger, L., (1962). *A Theory of Cognitive Dissonance*. Stanford: Stanford University Press.
- Fishman, C. (1998). The war for talent. *Fast Company*, 16, 104.
- Fitz-Enz, J. (1997). Highly effective HR Practices. *HR Focus*, 74, 11-12.
- Grant, R M. (2002). *Contemporary strategy analysis: Concepts, Techniques, Applications*. Oxford: Blackwell Publishing.
- Hammonds, K. H. (2003). Are we out of options?. *Fast Company*, 67, 98.
- Herzberg, F. (1966). *Work and the nature of man*. Cleveland: The World Publishing Company.
- Herzberg, F., Mausner B., & Snyderman, B.B. (1959). *The motivation to work*. London: Chapman & Hall, Limited.

- Janz, B.D., & Prasarnphanich, P. (2003). Understanding the Antecedents of Effective Knowledge Management: The Importance of a Knowledge-Centered Culture. *Decision Sciences*, 34, 351-384.
- Kohn, A. (1993). Why incentive plans cannot work. *Harvard Business Review*, 71, 54-61.
- Kvale, S. (1997). *Den kvalitative forskningsintervjuen*. Lund: Studentlitteratur.
- Lazear, P.E. (2000). Performance Pay and Productivity. *The American Economic Review*, 90, 1346-1361.
- LeBlanc, P. V., Mulvey, P. W., & Rich, J. T. (2000). Improving the Return on Human Capital: New Metrics. *Compensation and Benefits Review*, 32, 13-20.
- Mayo, A. (2000). The role of employee development in the growth of intellectual capital. *Personnel Review*, 29, 521-533.
- Miller, J. (1996). Humor: an empowerment tool for the 1990s. *Management Development Review*, 9, 36-40.
- Nonaka, I. (1991). The knowledge-creating company. *Harvard Business Review*, 69, 96-105.
- Palmer, I. & Hardy, C. (2000). *Thinking about management*. London: Sage Publication.
- Pervin, L.A., & John, O.P. (1999). *Handbook of personality: Theory and Research*. New York: Guilford Press.
- Pervin, L.A., & John, O.P. (2001). *Personality: Theory and Research*. New York: John Wiley & Sons, Inc.
- Pfeffer, J., Tromley, C.L., & Santalainen, T. (1995). Producing sustainable competitive advantage through the effective management of people. *Academy of Management Executive*, 9, 55-73.
- Pfeffer, J., & Veiga, J.F. (1999). Putting people first for organizational success. *The academy of management executive*, 13, 37-48.
- Pulic, A. (2004). Intellectual Capital – does it create or destroy value. *Measuring Business Excellence*, 8, 62-68.
- Quinn, J.B., Anderson, P., & Finkelstein, S. (1996). Managing professional intellect: Making the most of the best. *Harvard Business Review*, 74, 71-81.
- Reich, R.B. (1991). *The work of nations: Preparing Ourselves for the 21st-Century Capitalism*. London: Simon & Schuster.

- Ridderstråle, J., & Nordström K.A. (2004). *Karaoke Kapitalism – Management för Människan*. Stockholm: Bookhouse.
- Schneider, B., & Alderfer, C.P. (1973). Three studies of measures of need satisfaction in organizations. *Administrative Science Quarterly*, 18, 489-505.
- Senge, P.M. (1990). *Den femte disciplinen: Den lärande organizationens konst*. Stockholm: Fakta info direkt.
- Smith, A.D., & Rupp, W.T. (2004). Knowledge workers' perceptions of performance ratings. *The Journal of Workplace Learning*, 16, 146-166.
- Smith, R.E. (1993). *Psychology*. New York: West Publishing Company.
- Sparrow, P., & Hiltrop, J.M. (1994). *European Human Resource Management in Transition*. New York: Prentice Hall.
- Stacey, R.D. (2001). *Complex responsive processes in organizations: learning and knowledge creation*. London: Routledge.
- Starkey, K. (Ed.). (1996). *How organization learn*. London: Thomson.
- Stewart, T.A. (1997). *Intellectual Capital: the new wealth of organization*. New York: Doubleday.
- Sveiby, K.E. (1997). *The new organizational wealth: managing & measuring knowledge-based assets*. San Francisco: Berrett Koehler Publishers Inc.
- Taylor, F.W. (1911). *The principles of Scientific Management*. Digital Scan on Internet.
- Thompson, D. (Ed.). (1995). *Concise Oxford Dictionary of Current English*. New York: Oxford University Press.
- Watson Wyatt. (2002). Human Capital Index: Human Capital Index as a lead indicator of shareholder value.
- Von Krogh, G., Nonaka, I., & Aben, M. (2001). Making the Most of Your Company's Knowledge: A Strategic Framework. *Long range planning*, 34, 421-439.
- Von Krogh, G., Nonaka, I., & Nishiguchi, T. (2000). *Knowledge Creation: a source of value*. New York: St Martin's.
- Wood, R., & Bandura, A. (1989). Social Cognitive Theory of Organizational Management. *The Academy of Management Review*, 14, 361-384.

8.1.2 Personal Communication

Jonas Birgersson, CEO Labs2, 2004-05-05

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Leif Edvinsson, professor, Lund University, continuously during the study

Torbjörn Johansson, CEO Novotek Sverige AB, 2004-06-02

Örjan Johansson, CEO Anoto, 2004-06-01

Rolf Nilsson, President Connectblue, 2004-05-18

Bertil Östman, Compensation & Benefits Manager Sydkraft, 2004-05-12

Bert Westerlundh, Psychology professor, Lund University, 2004-06-16

8.1.3 Other sources

Dagens Industri, 2004-03-22

Dagens Industri, 2004-03-25

Dagens PS, 2004-01-21

Daum (2001): www.juergendaum.com/news/11_13_2001.htm

Carsten von Otter, professor Arbetslivsinstitutet, via e-mail 2004-04-06

Sveiby (2004): www.sveiby.com/articles/IntangibleMethods.htm

www.intellectualcapital.se

www.sveiby.com

www.vaic-on.net

www.volitionalpartners.com

www.dagensindustri.se