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INTELLECTUAL CAPITAL AND MAINTENANCE OF WORK ABILITY – the Wellbeing Perspective

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ABSTRACT: The well-being perspective of the employees' is only seldom connected to the discussion on intellectual capital. This paper analyses expert interview data on intellectual capital with maintenance of work ability (MWA) as frame of reference. The framework includes employees' health but also competencies, work community and work environment.

This paper shows that the most essential change caused by intellectual capital has taken place in relation to competence because the focus is shifting from individual's competencies to collective competence. Changes in work environment, work community and employee's health are shown to be underlying processes behind this development. Employees' wellbeing, which is the prerequisite for successful knowledge creation, is determined by successful management of all these four processes.

Key words: intellectual capital, maintenance of work ability, employees' wellbeing, knowledge creation, sustainable economical development, health, competence, work community, work environment

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TIIVISTELMÄ: Työntekijöiden hyvinvointiin liittyviä kysymyksiä ei juurikaan ole tarkasteltu osaamispääomaan liittyvän keskustelun yhteydessä. Tässä paperissa analysoidaan osaamispääoman asiantuntijoista koostuvaa haastatteluaineistoa työkykyä ylläpitävää toimintaa (tyky) viitekehyksenä käyttäen. Tyky-viitekehys sisältää työntekijöiden terveyden lisäksi myös osaamisen, työyhteisön ja työympäristön näkökulmat.

Tässä paperissa keskeisimmäksi osaamispääoman aiheuttamaksi muutokseksi osoittautuu osaaminen, jossa painopiste on siirtymässä yksilöiden osaamisesta yhteisölliseen osaamiseen. Muutokset työympäristöön, työyhteisöön ja työntekijöiden terveyteen liittyvissä kysymyksissä jäsentävät tämän kehityksen taustalla vaikuttavia tekijöitä. Työntekijöiden hyvinvointi, joka on onnistuneen tiedonmuodostuksen perusedellytys, määrittyy kaikkien näiden neljän tekijän menestyksellisestä hallinnasta.

Avainsanat: osaamispääoma, työkykyä ylläpitävä toiminta, työntekijöiden hyvinvointi, tiedonmuodostus, kestävä tuloskehitys, terveys, kompetenssi, työyhteisö, työympäristö

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1 Introduction

The new technologies, globalisation and ever-increasing emphasis on intangibles have created a whole new basis for transactions in new markets. Thus, companies are facing new opportunities, as well as new risks. Characteristic of this development has been that the Internet has given access to these new opportunities. (Sullivan 2000.) Increasing competition is forcing more and more companies to operate in global markets. Relaxation of the regulations, as well as technological development, is an important reason behind this development. Another significant change can be seen in products that become increasingly knowledge-intensive. In the information age economy, the primary sources of wealth are knowledge and communication, whereas the importance of natural resources and physical labour is decreasing.

These two contemporary mega trends have been the main drivers behind the emergence of intellectual capital to explain the change in business logic. As several authors have shown (see, for example, Hussi 2003; Sveiby 1997; Nonaka – Takeuchi 1995), knowledge creation has a central position in this setting as the source of organisational innovativeness. Knowledge creation is completely dependent on the human capital of an organisation. Employees' health, and more broadly wellbeing, can be seen as a central prerequisite for successful knowledge creation. However, these issues have only superficially been addressed by Brooking (1996) as she mentions employees' health as one indicator of intellectual capital. More recently, Edvinsson (2002) has also glanced at these issues as part of the corporate longitude.

The long-term goal of a company is to maintain a balance between investments and productivity. It is quite obvious that wellbeing cannot be improved limitlessly without negative effects on the economic performance. Accordingly, it should be obvious that financial performance cannot be improved excessively by exploiting employees' wellbeing. This is the main principle in sustainable economic development (see Figure 1). (Ahonen 1998b.) Emphasising economic performance by neglecting the development of personnel and work conditions only improves a company's short-term cost-efficiency. However, employees' wellbeing is one of the key elements in long-term productivity and quality development. (Bjurström *et al.* 1993.) Sustainable economical development means that the financial result is seen in relation to those inputs that have been made to achieve it. Excessive sacrifices and the denouncement of employees lead to untenable turnover and profit increase as the wellbeing of the personnel resource is threatened. By developing its resources, the company secures future profitability,

whereas it is threatened by burdening resources. Skilful management can set current and future requirements in balance. Correct information about changes in the personnel resource's state and financial results is essential for this balancing. (Ahonen 1998a.)

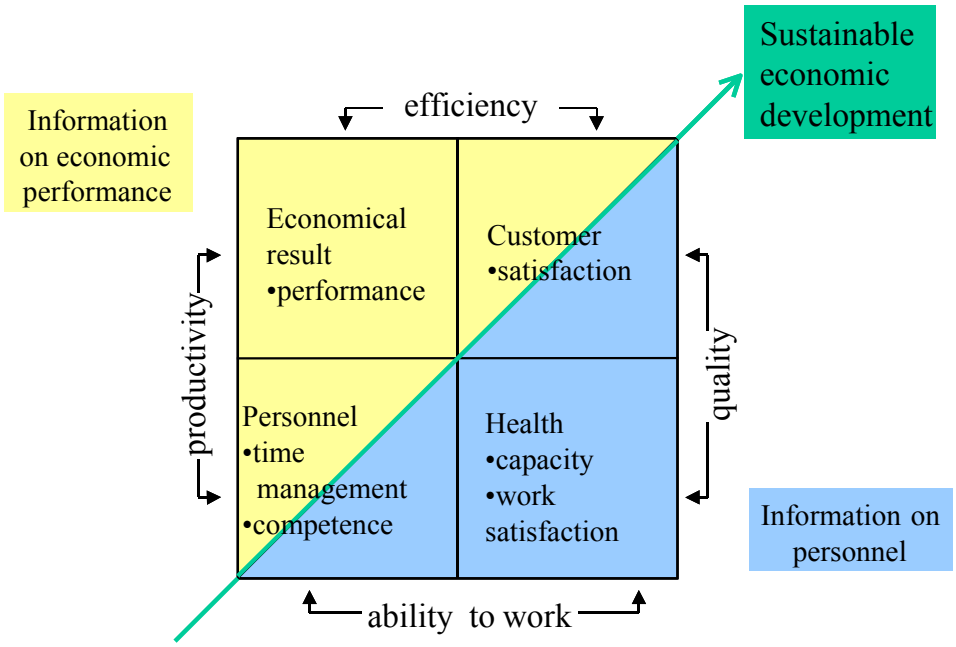


Figure 1 Sustainable economic development[1]

In this paper, I will address the intellectual capital discourse from the point of view of the Finnish maintenance of work ability. The paper will discuss the importance of health and wellbeing aspects in relation to the IC theory and, thus, work on the elaborations that have been discussed in only a limited fashion so far.

2 Research design and methodology

The research question of this paper discusses how is intellectual capital (IC) outlined when the maintenance of work ability (MWA) concept is the framework of analysis? This divides further into two sub-questions: What are the areas of congruence? and What are the differences?

[1] This figure is adapted from Liukkonen (1998) model on Dual-evaluation.

These questions are approached by analysis of interview data that consists of ten experts in the field of intellectual capital. The selection criteria for these experts were the high-level of expertise and as broad a coverage of different perspectives as possible. The distribution of interviewees according to their occupational backgrounds is presented in Table I. Interviews were conducted in April - May year 2000. In the results section, I have labelled the interview references of consultants and the enterprise representative as business life actors. Research institute and university representatives are labelled academics.

Background	
Research institutes and universities 2 professors in accounting 2 professors in business studies 1 director of IC research institute	5
Chief knowledge officer	1
Consultant group includes authors of the publications that are read the most in the field of IC. All of these interviewees have. They have also generated academic contributions.	4
Total	10

Table I Backgrounds of the interviewed intellectual capital experts

The interviews were performed following a predefined question structure, which can be found in Appendix A. The structure is construed so that the first three questions are aimed at revealing different perspectives in relation to the interviewee's conception about IC. This was followed by two questions on measurement. The financial implications of intellectual capital were scrutinised by three separate questions. Direct questions were imposed on a balanced scorecard and human resource reporting models in relation to IC. And finally, the relationship between health and IC was explicitly asked. The leading idea in generating the interview structure was to form questions so that they would be in line with general IC theory in the beginning and gradually take up more unorthodox perspectives.

When considering the analysis of the data, reflective theoretical consideration is the distinctive feature that makes scientific conclusions different from common sense attitudes and common understanding. The creation of the theory-based interpretations with the help of an outspoken framework is the very idea, and at the same time, the difficulty of qualitative research. (Eskola – Suoranta 1998.)

The perspective taken in this study is to consider the data produced by the interviewees as true descriptions of the reality. This approach is based on the assumption that speech acts can be used as a tool to attain knowledge about existing facts. It is depends on the researcher's interests and goals what kind of stand he should take on his data. A more relativistic standpoint can be taken as well if it is required by the nature of the study. (Eskola – Suoranta 1998.; Alasuutari 1999.) Qualitative analysis begins with dividing the data into smaller entities. According to Raunio (1999), this thematic division can be seen as an essential starting point for all textual qualitative research. Coding is one alternative way of doing this. Coding is a process in which the researcher assigns certain signs to chosen text passages. Coding is always a construction of the researcher. (Eskola – Suoranta 1998.)

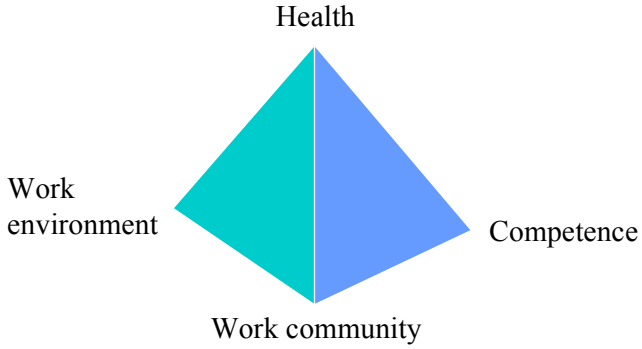
In qualitative research, the theoretical framework can provide a tool that enables interpretation and presentation of these interpretations in a scientific form. An expert's arguments, actions and different artefacts are not self-sufficient, but they are interrelated to other things, speech acts, actions and artefacts. It is this very interdependence that makes things meaningful. In qualitative research, the role of the data is to help the researcher, in one way or another, to construct a conceptual understanding of the phenomenon being researched. The data is used as a basis for conduction of theoretically consistent perspectives. All texts actively create some version of reality as they are versions of, or perspectives on, research topics. (Eskola – Suoranta 1998.)

Having presented the methodological solutions of the study, I will move on to generally describe the maintenance of work ability -approach that was the framework of analysis used in this study.

2.1 The maintenance of work ability -approach

The starting point for the Finnish maintenance of work ability –approach (MWA) can be traced to a memorandum on maintenance of work ability at work places created by social partners in 1989. This resolution was written into the law on occupational health in1991. The new compensation system for occupational health services in 1995 included maintenance of work ability in coverable activities. (Bergström *et al.* 1997.)

Maintenance of work ability has been the most important paradigm to promote wellbeing at work in Finland during the 1990s. Health is not the only factor influencing the work ability of an individual. It is also dependent on physical, mental and social capabilities. The aim of the maintenance of work ability is not primarily to prevent illness, but to maintain health and work ability. The maintenance of work ability comprises a broad variety of activities (see Figure 2). (Rantanen 1999; Rissa 1996.) According to Finnish authorities, maintenance of work ability programmes include all such work-related actions that the employer, employees and collaborating organisations perform in co-operation, in order to improve and support the work ability and functional capability of every individual taking part in working life in every phase of their work careers. (Ministry of Labour 1996; Ministry of Social Affairs and Health 1992.)



Source: Huuskonen *et al.* 1997

Figure 2 Factors influencing an individual's work ability

The maintenance of work ability includes activities that aim at improving the physical and mental condition, adopting healthier ways of life, developing professional skills and adaptation to changes, and supporting job satisfaction and motivation by feedback and reward systems. (Aro 1998.) Collaboration between members of the work community, as well as different work organisations, is strongly emphasised. An individual is an active doer and participator instead of a mere object in this framework. Everyone has to take responsibility for his own work ability. This means adopting new work roles and the courage to build new ways of collaboration. Successful maintenance of work ability is undertaken by a clearly-defined programme with expressed goals and temporal limits. The goals have to be in proportion to the organisation's other activities. (Rissa 1996.) Introducing such a programme requires a decision by the management and definitive commitment. Otherwise, activities are inadequate and chances of success are poor. A maintenance of work ability programme should be included as part of a company's quality system. This way the MWA programme supports the organisa-

tion's attainment of its strategic goals and assists in understand development of personnel resources as a whole, because it gets actual and reliable information about personnel's ways of action, competencies, wellbeing and job satisfaction. An organisation can get a comprehensive understanding of its resources when linking personnel indicators to other monitoring systems. (Louhevaara 1999; Aro 1998.)

There is no official definition of work ability in the legislation (Ilmarinen 1995). Ilmarinen (1995, 1999a) defines work ability as a relationship between an individual's resources and the demands of the task. According to this definition, an individual's resources consist of health and capacity, training and competencies, relevant values and attitudes, motivation and job satisfaction. These resources are used in the work, in which the work community, work environment and work related mental and physical demands also have an influence. This context has an essential effect on an individual's capability to use his resources. According to this definition, work ability is a dynamic process that changes via its components as an employee ages. An individual's work ability is further related to the personal networks (such as family and friends), organisation and surrounding society.

Launis *et al*. (1998) analysed employees' conceptions of their work ability, strengths, influencing factors and MWA plans in four organisations. The results show that work ability was mainly understood as employee's health and individual characteristics. Plans for maintaining work ability were heavily biased by influencing these characteristics, for example, by physical fitness activities or individual rehabilitation. At the same time, the problems of work ability arose mostly from continuous expansion and ambiguity of work tasks, unclear division of labour, inadequate methods, lack of shared planning and undermining the personnel. The disparity between observed problems and undertaken activities was considerable. The plans did not generally meet the observed challenges of the changes in work. This is seen to be due to the historical background of the work ability concept. In this setting, it is essentially related to evaluating an individual's disability and, therefore, emphasis on medical and expert-oriented approach has been distinctive and other dimensions, that are seen to be more relevant in current work life, are neglected.

Maintenance of work ability can be categorised according to its objects (see Figure 3). This analysis shows that most activities are directed at individuals. Collectively oriented activities have usually not been related to actual work tasks. Activities directed at work, its collective control and examination have been scarce. (Mäkitalo 1999; Mäkitalo – Launis 1998.)

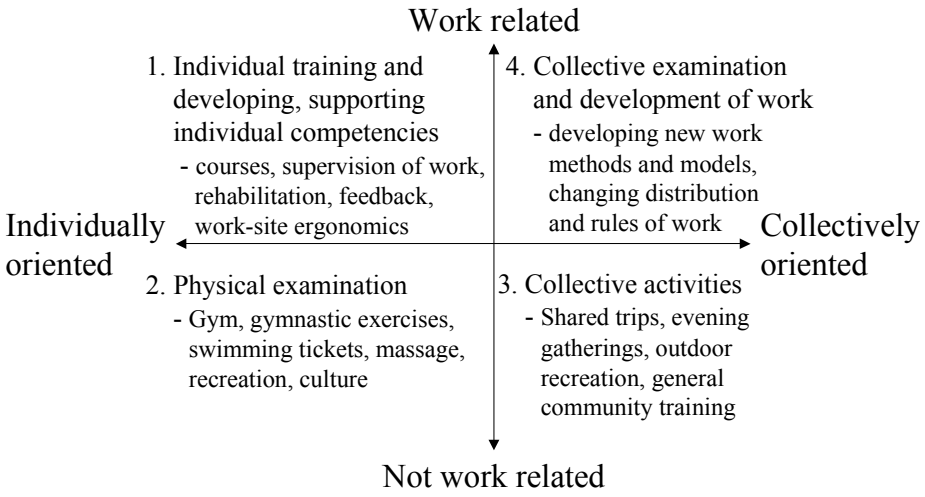


Figure 3 The objects of MWA

These censorious findings on MWA activities undertaken in companies argue that the maintenance of work ability approach requires new linkages to organisational performance in order to maximise the potential that this approach has. Thus, the linkage elaborated in this paper is not only relevant from an intellectual capital point of view in opening a broader wellbeing perspective, but also to the MWA discourse as the new formulation of economical influences helps design activities that contribute more to the organisation's daily functioning.

3 Results

Having stated the methodological and theoretical background of the study, I will now move to the empirical part of the study in which I scrutinise the interview data of IC experts from an MWA perspective. This part has been divided into four sections following the maintenance of work ability model; namely competence, work environment, work community and health. At the beginning of every section, I will briefly describe the significance of the focal maintenance of work ability –element. The empirical findings of the following sections are reconstructions of the expert interviews in a given context. The reconstructions are verified by actual citations from the data, where applicable. In conclusion, the empirical findings will be discussed in relation to the MWA approach.

3.1 Competence

The competence dimension has been included in the MWA –approach because it appears that radical changes in content and methods of work imply heavy development challenges to pro-

fessional qualifications practises. (Rantanen 1998.) Deficiencies in professional skills can rapidly turn into a serious problem in work life. This is also a health-related threat as it creates a burden and increases work related stress. (Ilmarinen 1999b.) The competence dimension in the maintenance of work ability is targeted at securing the employee's ability to perform work tasks by professional competencies. (Anttonen *et al.* 1998.)

Traditional technical planning competence and non-verbal skills are losing their importance. The skills related to verbal and symbolic interaction are increasingly important as different networks and contacts need to be used quicker when needed. Good connectivity through social skills helps an individual meet the uncertainty of the future. (Huuhtanen 1999.) Empirical results show that the improvement of professional competencies is an important orientation because it helps create a healthy organisation with natural collaboration. (Jurvansuu *et. al*. 2000b.)

3.1.1 In the intellectual capital discourse, the angle of competencies turns from individual to collective character

According to the data of the study, competencies were earlier seen in a static way. Companies made considerable efforts to try to analyse their core competencies and technologies that create their competitive advantage. The analysis of core competencies turned organisations' attention to fundamental technologies and competencies. The competence issues were seen strongly as an individual's characteristics. Different development activities, usually training, have focused on these individual resources. From a historical point of view, this can be seen as an identifying and analytical phase. The aim was to become aware of what kind of knowledge stock the organisation possesses. On the individual level, this meant a shift from the division of labour to identifying competence requirements of tasks. Nowadays, it seems that companies that have used such an approach have reached a dead-end and new approaches have to be developed. Competence as such is a rather passive and static concept. Cumulated knowledge and skills represent the potential of an individual but this needs to be actualised in action. Furthermore, competence and knowledge are non-rival assets. This means that they do not wear out but on the contrary get stronger. They are not diminished when shared between people but this makes them stronger, too.

The knowledge management perspective emphasises knowledge creation instead of a mere analytic approach and is, thus, a more dynamic approach. The essence of intellectual capital is

the renewal capability and ability to create new competencies. This requires an understanding of competence related deficiencies as well. This can be achieved through constant reflexivity on both oneself and the methods being used, that is, the readiness to look for and adopt better ways of fulfilling the organisation's strategy.

The competence-based strategy is seen as a very difficult concept to operationalise. Intellectual capital is taken as a conceptual tool that facilitates this challenge. Human capital still has a central role even in the IC discourse, because primarily intellectual capital is about how the knowledge of employees is applied in the firm. This relationship is especially evident in knowledge-intensive organisations, but it is difficult to imagine any business that could run without human capital because even the highly automated process industry has skilled experts to maintain the processes. It is strongly emphasised in IC discourse that human capital is individually based.

> … we get a chance to specify what we mean by competence – what we mean by a bundle of skills and expertise and technologies and how they relate to each other. So when I talk about the intellectual capital I talk about the bundle of skills, expertise and technologies that make competencies work.
>
> Academic

> …human capital is then the individual knowledge, the competence and the knowledge belonging to the individual human being employed by the firm.
>
> Academic

Earlier it was characteristic of the management strategies that the organisation should focus closely on its branch of industry and externalise all the activities irrelevant to core competencies. By emphasising knowledge creation, companies dare to move to new niche areas more and develop the resources needed to meet the new demands.

> Companies are not relying solely on the existing organisational structure any more, but they are willing to look for new possibilities and requirements. I am not all that interested in endless technology listings of a company, but more on how these are combined in action and how some companies make more radical innovations – to put it briefly, the dynamic processes that create changes in organisations.
>
> Academic

The knowledge creation approach has turned the competence focus from individual to collective capability, which results in organisational capacity. Organisational capacity can be observed, for example, as decreasing lead-time of the processes. This shift also influences the mechanics of competence development as learning by doing and different action based learning models are becoming increasingly important. Even though the shift of approach from individual to communal approach on competence has been salient in the literature for some time, the reality is still quite different in actual organisations as many of them are still in the early stages of the development towards collective capabilities.

Collective capabilities rely heavily on the nature of knowledge creation, the interchange between tacit and explicit knowledge. For example, training and competence mapping activities have focused primarily on explicit knowledge, whereas most of organisational elements of competence are actually tacit. Development of collective organisational competence is a long-term activity that builds grounds for knowledge creation in a more fundamental way and can be seen as a strategic approach towards development activities.

Professional competence forms the base of human capital but it is the organisational links connecting creative employees that creates the dynamics of innovativeness in an organisation. Social incompetence leads to a situation where an individual's knowledge cannot be applied wider in the work community and the value-added of an employee is relatively low. The link-building approach to competence emphasises social skills to create social spaces where new ideas and creative relationships can be built on trust between different parties. Thirdly, business-related understanding is important, because mere ability to create new products is useless unless these ideas are connected to the general business logic of an organisation. Professional, social and business competence are complementary elements, none of these as such is generating added value.

> If your social competencies are non-existent, the organisation cannot use you and you yourself cannot connect your expertise to the competencies of the others and no added value is created. Many different abilities are required - you have to have expertise on the substance, social skills and if you don't understand anything about the business you might be able to come up with new products, but they do not have value in the business sense. All these elements have to exist sufficiently in all individuals but also in the structures of the organisation and that right people

> are able to find – we can use the right people in the right places. No single element as such is able to create it.
>
> Business life actor

Besides competencies, innovativeness also requires information. In the implementation of a knowledge management system, everyone's insights are important and everyone has to have access to information. On the other hand, information flows in current organisations are so huge that skills for filtering out the information, that is most relevant for oneself, are highly important. Early applications of knowledge management emphasised the importance of information systems and there were attempts to build processes upon these already existing applications. Actually, the direction should be quite the opposite, and the role of information and communication technology to enable and support knowledge sharing. Taking information and communication technology systems as a starting point cannot be expected to be fruitful but it is the responsible employee or team that can determine the criteria for seeing some piece of information as valuable and another not.

> If I talk about knowledge management to an American, for example, he will immediately say: "Ok, it's the intranet you are talking about." And my response is that it's not at all about the ICT tools. They are enablers, that make this possible in today's world, but they cannot be taken as a starting point. […] taking information and communication technology systems as a starting point they built this Future Watch system but it turned out to be totally useless.
>
> Business life actor

It can be said that one idea with the whole issue of trying to develop a framework for IC and its reporting is to try to transform tacit knowledge into explicit. Thus, information and communication technology is an instrument that is expected to facilitate this knowledge conversion. Another perspective is the importance of sharing tacit knowledge as such. A project group should consist of members with different levels and areas of expertise. It is often the case in an organisation that the best people are always wanted for project teams but the interest in taking junior employees in is much weaker. This leads to a situation where those most competent people increasingly accumulate knowledge, but tacit knowledge is not transferred to juniors through socialisation.

Opportunities to develop competencies are highly motivating for employees and they also increase an individual's wellbeing. To ensure the compatibility of the organisation's needs with

those of the employee requires systematic individual development. The effectiveness of these plans is evaluated against the organisational capacity discussed above. If the increasing number of systematic development plans correlates positively with organisational capacity, development plans can be taken as useful for the organisation's value creation. Rewards systems tied to short follow-up periods make it difficult to reward very long-term activities. Connecting reward systems to development plans results in a positive incentive for individual employees to contribute to the realisation of the organisation's strategy.

The competence that an organisation currently possesses is directly connected to its financial performance because it is at the core of business activities. But in the longer run, the organisation needs renewal capacity, as well. It is the balance between efficient production and continuous investments in further training, research and development in the long run, that is essential. Neglecting all development activities such as R&D, improvement of internal structures and focusing only on serving the customers creates a positive effect on financial performance in the short run. But at the same time, it weakens an organisation's ability to adapt to future changes in the markets and endangers long-term success. An organisation should be able to control both short and long-term cycles of competence at the same time. It should be able to make long-term investments on creation of the knowledge base, but yet be able to flexibly take advantage of its current knowledge base. However, quite often the short- term perspective is emphasised at the expense of longer term. It is often not a problem to get good financial performance in the short run by excessive workload and excluding investments in internal development and market relations. Learning takes place more slowly than product or budgeting cycles. Therefore, one of the most essential challenges in the field of intellectual capital is to toughen up learning curves. Time spans vary between different industries, but it seems that increasing speed of changes is a general trend.

> Let's think, for example, about a company that is producing mobile phones. It has been very strong in first generation technology and still focuses on developing that further. The markets are in those countries that are still using this technology. All inputs are targeted to more efficient selling of these phones. Suddenly the market situation changes and the second-generation technology seizes the market and the previous technology is not used anymore. The company has lost its business because it has not been able to follow the changes that take place in the markets. There are a lot of examples of this kind of development. (…) balanced

> scorecard discusses the importance of renewal and growth as one component in realising the organisation's strategies.
>
> Business life actor

It is typical that activities aimed at competence development are undertaken during favourable economic situations, whereas during the recession efforts are directed strictly to actual working tasks. Companies tend to operate in this pro-cyclical way even though a contra-cyclical way of action would be more beneficial on both the micro and macro levels of economy. Finland had a deep recession in the early 1990s and many companies did heavy downsizing. At the same time, they lost critical masses of competence. Creating similar potential anew has been a long lasting challenge for organisations.

Besides economic fluctuation, the increased significance of quarterly interim reports emphasises the role of economic performance. Profits are increasingly seen as the ultimate goal at the cost of perseverance. Demand for increased profits on the quarterly basis makes it difficult for companies to engage in longer-term development. Market reactions seem to reward large-scale redundancies, for example, with rising stock prices. These actions may improve profitability in the short run, but are often harmful on the longer run since the linkages that build the dynamics of an organisation are broken. When times are better and there is an increased need for labour force those being fired may not be willing to return to the same organisation and the organisation has a reduced recruiting potential. Furthermore, it is often the older work force that is fired. By losing these employees, a company loses highly valuable knowledge.

One of the reasons behind these market reactions might be the absence of sophisticated reporting tools that would make disclosure of information on intellectual capital possible. Previously accountants did not pay attention to training expenses, for example. They were mostly taken as costs instead of investments in the future potential of the company. The shift that has recently taken place is that people in the business world have become aware of intellectual capital covering a multitude of different elements and their significance as a part of business logic.

> But accountants, they did not know, they really did not think about intangibles as training or human resources or human capital. So, what is new is that people are now more concerned, are more aware of the existence of this kind of intangibles.
>
> Academic

The measurement of human capital is a difficult matter. People tend to have an unrealistic picture of their competencies and they see themselves either better or worse than is actually the case. That is why some sort of 360 degrees feedback system would be useful. It would also give information on interaction skills etc. Yet subjective impressions are seen as the best alternative if one has to choose one single indicator. In the process of building a balanced scorecard, companies relatively easily come up with indicators of financial performance, but the dimension of competencies and renewal is much more challenging. Human resource reporting describes human capital quite carefully, but it gives no information on other dimensions of intellectual capital.

> I think that most important indicators are subjective impressions. Because, in my mind, it is subjective impressions or social constructions of reality that drive your behaviour, are behind your behaviour. And it means that subjective impressions that are adequate for your own way of interpreting the surrounding world and creating action. It's not objective, it's subjective. And this means that maybe subjective measurements are the most important ones.
>
> Academic

There are some quite recent studies that have been able to show that training investments have a positive impact on the financial results of a company. However, it would seem that organisational changes are required as well in order to get these results. The radical change that has taken place is that previously the concept of capital has been related to financial investments in machines and equipments. Human capital makes investments in competence as relevant as financial investments. Thus, an enterprise is not seen as an economic entity consisting of investments in means of production, and ownership is defined by these investments with a financial risk, but as a sum of many very different contributions. It might even be the case that the competence related investments are the most finite and valuable form of investments. Understanding this changed logic can help create a new picture of what is an enterprise and, therefore, understand the management and attaining of competence investments.

> So we are by no means talking about a new outline of the old knowledge… at its best we are able to reveal a new kind of conception of what is an enterprise. And we are able to understand management and attainment of those investments, that are most finite and valuable in modern society, that is competence investments.
>
> Business life actor

3.1.2 Meeting the changes of the business environment is the driving force for competence development

Analysing the IC experts interview data from the competence perspective shows how attitudes towards competencies have shifted from seeing them as an individual's resource increasingly as a collective phenomenon. Earlier the competencies were seen as a static set of resources that an individual possesses. Considerable efforts have been made to try to develop new competencies through training. The dynamics of the knowledge creation perspective as an element of knowledge management has shifted the organisational focus to look for strategic niches that could be filled. The organisations are not tied as strongly to their past but sustainable economical performance is increasingly dependent on the ability to perceive new opportunities.

The originating idea of including competence in the maintenance of work ability framework was to support employee performance whereas the intellectual capital discussion aims at using the different knowledge resources of an organisation in the most efficient way to secure value creation. Even though these approaches superficially seem quite different from one another, there is an underlying perspective that is characteristic of both; sustainable economical development. The MWA approach sees competence development as a way of relieving the harmful effects of rapid changes in the business environment from the employees' perspective. IC discusses the same, but from the organisational perspective. Seeing these parallel roots behind both approaches show that there actually is no conflict of interest, because both organisations and employees are dependent on each other.

3.2 Work environment

According to the MWA literature, the starting point for the development of work was the aim of improving occupational safety by identifying and removing individually oriented biomedical health hazards (Huuskonen – Kalimo 1999;Rantanen 1998; Rantanen 1995). Later on, the scope has broadened from industrial hygiene and toxicology to more general prevention of occupational injuries and accidents. Currently, some 30 – 50 % of the Finnish labour force is still exposed to physical-chemical or mechanical threats and even one third encounters physical load in tasks (Rantanen 1998). Accidents and work related illnesses have dramatic economical implications at a company level. Furthermore, they affect the wellbeing of the employees' and, thus, the innovation environment of the whole company. (Salmenperä *et al.*

2000.) It has been evaluated that occupational accident related absences alone are 0.5 billion euros per year in Finland (Aro 1998).

Increasing knowledge-intensiveness of working life modifies the work environment and ergonomics related questions significantly. Over 60 % of Finns use information and communication technologies in their work. (Rantanen 1998.) Every-day working is distracted by constant changes in technological work environment and malfunctioning of the computer systems. If such deviant situations last long, they can lead to excessive pressures and stress reactions. (Huuhtanen 1999.) To meet these new requirements, research scope has to be broadened from individually oriented biomedical research to analyse the causes behind disability in a specific work context and its requirements. (Rantanen 1995.)

3.2.1 Information and communication technology and supporting creativeness as features of the work environment shaping intellectual capital

Internal structures comprise such things as software programs, customer databases and different monitoring tools. Modern information and communication technology has made it possible to work in different ways than earlier. It is the key to an organisation's internal information flows. Furthermore, efficiency of communication makes it possible to collaborate efficiently with people from different parts of the world.

> For example, I'm working as a guest editor for a journal on accounting and accountability. And this journal is managed from Australia. We have three editors and one of them is located in Hong Kong, the other one is in Sydney and I'm here. And we have never met upon that issue and actually I have never met one of the editors, I have never seen him as far as I know. But still we work together and we have developed an efficient way of communication. (…) So this is, I mean the new technology facilitates contacts in a different way…
>
> Academic

Companies may be interested in getting savings by postponing investments in the work environment. For example, moving information and communication technology investments into the future can result in considerable short-term savings. At the same time, reluctance to make such investments is growing. It is necessary that these investments are considered part of the general view of the organisation. Information and communication technology is not only a

tool for improving internal structures, but it can also be used in external relations. For example, customer feedback has traditionally been recorded, but this information has been used quite limitedly. Developing feedback processes that enable learning make it possible to truly learn from customers.

Another perspective on the work environment discusses the work environment from a creativeness point of view. According to this view, work environments should be designed so they are ideal for knowledge creation. This shifts the focus radically from traditional analysis of health hazards to structures supporting knowledge creation.

> What are the best environments for people to create new knowledge? That to me is a very interesting question. You tend to be so focused on, you know, avoiding bad environments for health. How about building really good environments for creation, that's a challenge for IC research.
>
> Business life actor

3.2.2 Ergonomics is a central development area even in knowledge-intensive work

Information and communication technologies as an element of the work environment have been a central facilitator for increasing organisational flexibility. Increased ability to distribute different kinds of information fast and cost-efficiently has made it possible to organise tasks in a way unimaginable without modern information and communication technology based tools. The change in information flows is not restricted to inside organisations but it covers external structures as well. An emerging trend in relation to the work environment is the search for work places ideal for knowledge intensive work.

The approach of creating work environments optimal for innovativeness and knowledge creation is quite distant from removing biomedical health hazards. This development shows explicitly how dramatic the changes in the nature of work have been. Yet even recent studies show that more traditional approaches to the development of work environments are needed as well, because “old” threats are still found. At the same time, the increasing use of information technologies also creates new challenges in relation to ergonomics, for example. MWA theorists have discussed the problems of information systems usability, but this perspective was not discussed in the data. On the other hand, implementation of information and commu-

nication technologies can also create new physical hazards unless there is proper planning and training for using new tools.

It seems that work environment issues are actually quite far removed from the IC experts interviewed for these data. The effort of analysing the data from the work environment perspective resulted in only a very few remarks that focused on the positive effects of using information and communications technology. The perspective of work environment as support for creativeness was the only deviation. It seems that MWA approach has much to offer through this perspective by opening a solution-oriented development scheme to the implementation of different systems.

3.3 Work community

Constant need for innovativeness sets up new demands on working life. It is common for all innovation supporting procedures that they enhance dialogue. In the core of this dialogue are questions and answers oriented interaction and the culture of challenging ideas. This new tolerance for contradictions and systemic challenging of the ideas places heavy demands on the functioning of the work community. The more complex the problem, the more relevant becomes experience, knowledge base, endurance and interaction skills. (Salmenperä *et al.* 2000.) Increased diverseness of working life reduces the number of permanent jobs and they become part-time and changing in content. This development causes a paradox as shortened employment leads to uncertainty in employees and this means less innovativeness. (Huuhtanen 1999.)

The atmosphere, social support and control over work tasks experienced by the employee are increasingly important as prerequisites of work ability. Development of work communities becomes increasingly important for companies. (Huuskonen – Kalimo 1999; Jurvansuu *et. al.* 2000b.) For example, changes in the way work is organised may alter mental and social requirements in a way that differs strongly from the traditional tight management style (Rantanen 1995). A fast pace, monotonous tasks and unnecessary rules concerning work are negative to wellbeing. Personnel development has to be linked to comprehensive organisational development. (Jurvansuu *et. al.* 2000b.) Optimising the pace of changes and controlling the fast pace are some of the most essential challenges in development of work tasks and work community. (Huuhtanen 1999.)

3.3.1 Leadership practises that support collaboration shape the development of the work community

Globalisation and the emerging information society create enormous turbulence in the business world. To meet these radical demands caused by the modern pace of changes, organisations are forced to be more sensitive to all the changes that take place in their surroundings. Organisations may not be able to define what kinds of competencies are needed even in the near future. Collaboration and communication culture that prevails in an organisation is as distinctive to knowledge management as the availability of information.

> When we start implementing some sort of knowledge management system, everyone's competencies have to be appreciated. Everyone has to make sure that he has access to current information, everyone's creativity is valued, there is an attempt to capture and process all ideas that spring up in the organisation in order to come up with new innovations.
>
> Business life actor

Intellectual capital is dynamic and so is not just the feature of an individual but is essentially a communal feature where individual actors are combined with something more than if they were alone. Because organisational learning is a communal process, an organisation needs to create structures that set the framework for development. A group or team systematically needs opportunities to reflect its learning and work processes being used. Learning diaries and other tools can be very useful. However, learning that occurs inside the organisation is not enough, because it only accumulates knowledge that already exists in the organisation. The ability to adapt to changes in the surroundings also requires learning from external structures, such as customers, collaborators and even competitors.

> Intellectual capital is only partially about analysing the competencies that have accumulated in the organisation. I see that in the dynamic world of intellectual capital it is essential to have the ability to interact deeply with the customer and market potential. (…) Thus, the main talent is to interpret accurately what has happened out there. (…) the individuals and their competencies within the organisation are not enough but it is essentially about the organisational capability to build linkages between these competent individuals.
>
> Academic

The change influences the leadership practises most strikingly because leadership has to shift from supervision towards stimulating relationships. The scientific management paradigm saw employees as nothing but a continuation of the machines. The continuous attempt to combine capital and labour more efficiently follows the economic law of diminishing returns and will ideally end up in the ultimate combination, in which improvements are not possible. In their search for new perspectives, companies are moving towards collective dimension of competencies. Individually based competencies may result in only a short-term competitive advantage because they are lost as the employment ends. Focus on collective organisational competence generates more lasting change in the organisation as knowledge is also transferred to other individuals.

A leader can have an active role in building different combinations of relationships. A manager can create a framework and structures that support the employee's information supply but also destroy obsolete ones. On the other hand, providing the wellspring idea that guides the creation of ideas in the same direction is necessary. The definition of the knowledge worker states that an employee must know more about his field of expertise than the manager. It is the knowledge worker alone, who can decide what kind of information is needed. Employees have to have opportunities to try out innovative solutions. This shift of power structures places great responsibility on the employee, but at the same time, work becomes highly motivating.

> … extensive attitude surveys and they build up extensive databases comprising attitudes towards a number of things, including leadership. And they also had productivity and efficiency data and then they tried to correlate and find which are the correlations, what is driving value. And what you can see is often that leadership is maybe the biggest intangible resource that drives the value or drives, if you want, intellectual capital.
>
> Academic

An organisation's vision and strategy define the company's intellectual capital. They set the frame of reference for recruiting and development of the employees, as they are manifestations of organisational values. An outspoken strategy statement helps build a hermeneutic preconception of the context, in which employees participate. Within an organisation, strategic abilities are improved by having an increasing number of people participate in the conception of the organisation's purpose and goals. This makes it possible to sharpen the clearsightedness of the strategy by picking up weak signals, but, at the same time, employees are

better able to apply the guidance of strategy to daily functioning. Traditional top-down management is not able to observe the multitude of insights that are gained by the front-line personnel. Having people together making observations and judgements makes it possible to distribute decision-making to a wider group. In an open communication culture, weak signals can rise to strategic planning form different directions, which strengthens them. The ability to observe weak signals makes it possible for companies to anticipate future changes better than their competitors. Inefficient communication may cause frustration, as observations of upcoming failure do not diffuse over the organisation.

> I think that the previous market setting of Nokia and Ericsson is a classical example. Ericsson was a much more developed, stronger and robust organisation and thus they could not see Nokia as a dangerous competitor to themselves. Nokia renewed everything, as they made huge investments in new kinds of competitive factors, such as aesthetics, speed and flexibility. Ericsson was not at all able to see this as a threat. Nokia was far ahead, when Ericsson realised that the rules of the game had changed. Suddenly it was not important to consumers that Ericssons's and even Siemens's phones had better results in technical tests. The consumers wanted nice looking phones and quickly changed models - the brand and the whole 'drive' was suddenly the most important competitive factor.
>
> Business life actor

Besides strategic abilities, companies also need dynamics for change. Seeing the future needs clearly is far from enough, if a company is not able to focus its efforts towards this goal. The renewal capability analyses the organisation's ability to create strategic choices and generate added value to them. The renewal capacity results in tearing down the traditional organisation chart because it guides thinking towards analysing the existing technology and competence base. Seeing the organisation as a set of processes that have their manifestation as interaction relationships supports the ability to create teams and business units that are dynamic and connected to the market. Otherwise, the organisation turns passive and repeats its old practises without the capacity to create anything new. Renewal capability reflects innovativeness on all organisational levels. These innovations can relate to processes, structures or actual products. The essence of the renewal capability is the ability to create even radical changes. This is especially important in the branches where the speed of changes is extremely high, such as information and communication technologies. The more dynamic an industry a company operates within, the more consciously it seeks to create new linkages to harness all of its capacity.

Besides the ability to create ideas, an organisation also has to be able to exploit the commercial potential in them. Mere development is not sufficient, but they have to be put to use to achieve financial goals, as well.

> … the company must do both. They must be better to create intangibles but also be better to exploit intangibles. Take a patent, for example, some companies are very good at doing research and development and creating new patents, but the next question will be how to exploit this patent, to make it commercial.
>
> Academic

All people are creative in some way but monotonous work tasks put a damper on this. Creativity has to be valued and there has to be an attempt to capture all ideas to be processed into possible innovations. Organisations should aim at building an atmosphere where everyone can give their opinion about development plans. An open and systematic suggestion scheme has been shown to be a good starting point and a backbone for such development. A reward system connected to this is also crucial. A recognised tool for making initiatives is highly motivating for all members of the work community as they feel they can influence the development of the organisation. One's opinions are perceived and processed. Everyone knows the organisation's goals and their own contribution to them. All employees should have a feeling that they are important members of a successful organisation. Recognition of importance is not helpful if the organisation is not successful because everyone is worried about his job. Similarly, membership in a successful organisation is not sufficient without respect.

> … supervisor has to respond to an idea within a given time, or the answer will be given by the personnel department and the supervisor is told about this. The providers of successful suggestions are rewarded by 20 percent of the annual savings. This kind of mechanism is highly motivating to the employees because they have a feeling that they can really influence the functioning of the organisation. (…) Feeling of control over the organisation's functioning creates commitment and positive attitudes among the employees. Happiness and appreciation of work are at a good level because everybody knows the goals and their individual contribution in attaining them.
>
> Business life actor

While the financial result gives information only about events that have occurred in the past, the monitoring of intellectual capital is aimed at evaluating the prerequisites of achieving the strategic goals. Thus, knowledge management opens a whole new layer of reflexivity in organisational functioning. In the old days, reflexivity was a management method , as the aim was to secure the organisation's efficiency. Now the method of management has to be made reflexive itself. The new perspective that comes with knowledge management is knowledge creation. New business logics arise from the tension between organisational efficiency and the ability to create knowledge that results in innovations.

> Because if you want to create a company, which is very lean and doesn't re-invent the wheel, you will not invent any other wheels either. On the other hand if you only focus on innovations, you will probably end up being too costly in the end. So in this, too, it is essential to find a balance.
>
> Business life actor

> … there is the paradox or contradiction that it may be that we may improve in what we are doing. But there is this competency trap problem that even if we improve in terms of what we are doing, it may be that we disable ourselves to change. So we may improve intellectual capital by rehearsing and by trial and error and other kinds of things. But by improving we also possibly place ourselves in the competency trap so that, if things just change a little, we will not be able to cope with them. So I think it's always a matter of the tensions between continuity and change that we have here.
>
> Academic

A balanced scorecard can be seen as one tool for broadening the organisational perspective beyond financial performance alone. It has its roots partly in the American tradition of measuring financial performance on a short-term perspective. This bias easily loses the long-term effects of retrenchments. With a balanced scorecard, companies are forced to consider the longer perspective, as well. Downsizing is a good example of shortsighted savings. Organisations lose an essential part of their intellectual capital, as people are lost. Furthermore, those who still are employed are overworked by increasing performance demands. As a result, the remaining work community often faces severe problems.

> And you can see that fairly clearly the companies that have downsized have a weaker performance afterwards. I think there will be quite conclusive evidence, when companies go through downsizing.
>
> Business life actor

3.3.2 The organisation's renewal capability and the need for new leadership paradigm are central challenges

A wholly new kind of autonomy of employees is needed in modern business life and, thus, the traditional bureaucracy based leadership paradigms are losing their significance. The requirement of change in the leadership paradigm was clearly evident when looking at the interview data from the work community point of view. The leadership style that emphasises collaboration turned out to be the most essential element in shifting towards collective dimensions of the competence. Organisation-wide collaboration is the key for both perceiving the changes taking place in the operational environment and generating the dynamics of change that is required to meet the new challenges of the environment.

Requirements for different leadership practises are seen also in the MWA approach. This is a notable parallel because the change in the leadership paradigm was so evidently seen in the data. The new power structure puts the work community into a central role in organising tasks.

The work community has an important source of social support and sense of communality. According to the MWA theories, a well-functioning work community is an efficient buffer that makes it easier to adapt to rapid changes of working life. This point of view is also very well in line with the demand for the organisation's renewal capability. It can be argued that the work community element of the MWA approach is well in line with the responses of the IC experts.

3.4 Health

Traditionally, MWA has been characterised by putting the emphasis on physical exercise and individuality. (Jurvansuu *et. al*. 2000b.) Maintenance of work ability has been seen as most topical for elderly workers because combining capacity with work demands is increasingly difficult for ageing workers. The physical load of work tasks does not change even though

respiration, bloodstream and musculo-skeletal capacity decrease depending on physical activity. In mentally burdening tasks, psychological requirements and qualitative difficulty increase while accuracy and speed of perception decrease. (Ilmarinen 1995.)

Physical exercise is an important factor in improving work ability because, besides physical effects, it also increases mental resources. (Ilmarinen 1995.) It has been shown that well-designed MWA is able to reduce sickness absences and early retirement. At the same time, productiveness has improved. The financial benefit gained by development like this can be substantial. (Ministry of Labour 1996.)

However, it is important to see that health *per se* does not define work ability, but it is a sum of the physical, mental and social capacities. (Rantanen 1999.) The employees' wellbeing is one of the key elements in long-term productivity and quality development. Special attention has to be given to mental alongside physical wellbeing. (Bjurström *et al.* 1993.)

It has been estimated that over half the Finnish labour force report excessive work pace causes stress and hinders work performance. Improving the quality of the psychic work environment for managing a hectic work pace and stress combined with psycho-physiologically suitable working hours will be an essential task for the maintenance of work ability activities in future. (Rantanen 1998.) Long-lasting and uncontrolled work-related stress can lead to burnout – syndrome that is characterised by chronic fatigue from which one does not recover by normal rest, increased cynicism and weakened professional self-respect. Maintenance of work ability and other development activities are essential in preventing it. Demands of work and an individual's resources have to in balance. (Huuskonen – Kalimo 1999.)

3.4.1 Health is seen ambiguously in relation to intellectual capital

Some of the interviewed experts on intellectual capital are not willing to comment on this relationship at all. It is also argued that intellectual capital is paradigmatically rooted in management perspective, whereas an individual's health is very much an employee perspective and, thus, these two would not be compatible with each other.

> [TH]: … the eleventh question which is about the relationship between intellectual capital and an individual's health?
> [interviewee]: I don't know, I really don't know.
>
> Academic

> I mean intangibles is very much a management perspective, like a balanced scorecard is a management perspective, human resource reporting models could either be a management perspective but could also be an employee perspective, I mean. And an individual's health is very much an employee perspective. Although, of course, you can see working conditions and things like that as important intangibles but I would say that the main difference is that intangibles is a management perspective, individual health is an employee perspective. Therefore, they don't meet I would say, that's two very different paradigms or movements behind them.
>
> Academic

However, the relationship between health and intellectual capital is ambiguous. Fundamentally, health can be seen as the determinant of how an individual's competencies can be used in an organisation. A person can be brilliant but sickness actually makes him incompetent, as he cannot contribute to the organisation's activities. Thus, health can be seen as a hygiene factor that has to be in order. Companies should also take care of this because other development activities are meaningless if an employee is not able to use his competencies.

> … we talk about mental wellbeing, which takes us into situations where being mentally exhausted results also as physical symptoms and sickness absences start accumulating etc.
>
> Business life actor

In relation to intellectual capital, health is, however, often seen as a broader issue than just physical health; it also includes mental, emotional and social dimensions. Performance expectations of modern business life require intense mental agility, but, at the same time, emotional balance and well-functioning social relationships. All of these are prerequisites for coping effectively in organisational linkages.

Renewal capability is dependent on the relationship between the individual and the organisation. A poorly structured organisation suppresses the innovativeness of individuals. Monotonous work tasks with insufficient control over the tasks overlooks the hidden resources that people have. A hectic work pace also hinders development opportunities. Stress-related illnesses could also severely hinder work ability or at least the ability to be creative. Active work, that provides the opportunity to use one's competencies and individual development, contributes to mental wellbeing, motivation and job satisfaction. Furthermore, there is also a feedback link from the individual's wellbeing to the organisational capacity, because health,

in its broad meaning, is the foundation for an individual's energy and ability. Often situations in business life are so demanding that one has to have good health to cope with requirements or misjudgements happen easily. The ability for autonomous responsibility requires a balance between mental, emotional and social wellbeing.

> It makes no sense to talk about any intellectual resources or any competencies in general unless there is the ability to change or a sort of a vitality that forms the basis for individual's ability to use competencies in the best possible way. In a way, it is a basis that companies should in part look after.
>
> Business life actor

A crisis of obsolete work processes leads to a situation, where organisational capacity collapses. Striving to increase efficiency with fewer employees causes exhaustion and sickness absences. Long-term mental strain even leads to physical symptoms. From a business perspective, this can be conceptualised as endangering sustainable economical development. This means that financial performance is improved in the short term but strain is unbearable in the long term and may even result in burnout among employees. A practical guideline for development activities could be to consider whether the organisation is able to achieve its goals more efficiently and, at the same time also reduce the strain on communities and individuals.

> I say last but not least – one thing is worth remembering – we can force people to work when they do not have another job and pay and treat them poorly etc. in the short run. But if we want to keep people satisfied and able to work, we should be able to show that they are important members of a successful enterprise. (…) it comes as a side product of knowledge management that people have a better work ability and they are better motivated.
>
> Business life actor

3.4.2 Healthy employees constitute the creative organisation

Health related issues were strongly seen in relation to the capability to act as a member of the work community. Stress was especially strongly related to creativity in the interview data. It was also pointed out that the relationship is not straight forwardly causal, but good heath improves work performance and, on the other hand, active and well-organised work contributes to an individual's health, too. All of this is well in line with the MWA theories.

However, it is interesting to note that health was a controversial theme in the interviews, as some of the interviewees strongly objected to the perspective described above that was common in the data. The sharp distinction between the employee and management perspective is surprising because of the strong interdependence between organisations and employees. Employees essentially constitute organisations and employment is a status obtained through a membership in some organisation.

4 Conclusions

Table II briefly ties together the most essential findings to each perspective of MWA.

	Maintenance of work ability			
	Health	Competence	Work community	Work environment
Intellectual capital	Answers vary from complete ignorance to acknowledging health as the fundamental prerequisite for successful working and ability to manage in the organisation's renewal pressures.	The focus on competence is strongly shifting from individual towards collective competencies in order to meet the organisational requirements of creating use value.	Work community becomes the framework for the social relations that make knowledge sharing and creation possible.	Work environment composes social and communicative structures, which enable knowledge sharing and creation.

Table II Summary of the findings

In the industrial age, the economical implications of the MWA activities were used as a sort of Trojan horse to make the development of working conditions a bit more humane. It was much easier to convince the industrial tycoons about the value of improving working conditions by showing that this had positive financial results. In today's business world, taking care of wellbeing is no longer a luxury or another means of increasing the profit margin a little, but it is a true necessity for successful knowledge creation, that is the most fundamental source of value creation in the contemporary knowledge-economy.

As the logic of business activities is moving towards increasing knowledge intensity, the wellbeing of the personnel is becoming increasingly important. If wellbeing related issues are

neglected, the prerequisites for innovativeness and knowledge creation are seriously weakened. Innovativeness is the core of the companies' capability to survive in the complexity of the modern business environment. Including the perspective of health in the discussion around intellectual capital means we consider the physical capacity to undertake work tasks. For example, work site health promotion can result in reduced sickness absences. However, merely being present is not enough, but an employee must be willing to operate as an active member of different networks. This activeness requires willingness to both share one's own knowledge and to learn from others. The activeness of the employees can be reinforced by supporting employees' wellbeing through holistically performed maintenance of work ability in relation to the context at hand.

On the other hand, the relationship between wellbeing and organisational performance is by no means a causal one. It has also been shown that the organisation's success also has a positive influence on the wellbeing of the employees. Work ability is observed to be lower in organisations that perform poorly. Personnel wellbeing, organisational health and organisations success seem to intertwine in a complex way. (Jurvansuu *et al*. 2000a)

The multifaceted relationship between wellbeing and intellectual capital is summarised in Figure 4. Systematic scrutiny of the interview data showed that the most essential change has taken place in relation to competence. Whereas the focus has previously been on an individual's competencies, the increasing importance of knowledge creation requires combining the characteristics of the individuals into a larger entity that can be seen as collective competence. The most evident development factor behind this is the increasing use of information and communication technologies that has made it possible to collaborate in whole new ways. On the other hand, the data revealed an emerging trend of designing work places that support creativeness. When considering the work community, the shift towards collective competencies has required a new kind of leadership paradigm that dissolves the bureaucratic chain of command into collaborative working practises. Even though the role of human capital as the fundamental element of IC has been widely recognised, the health perspective was far from self-evident in the data of the study. The most extreme respondents were not willing to contemplate this relationship at all, whereas some others stated that they have not given this a thought. On the other hand, some of the interviewees made remarks, which were very well in line even with the maintenance of work ability theories. Because of this ambiguousness in the responses, this linkage is described with a dashed line in Figure 4.

Wellbeing

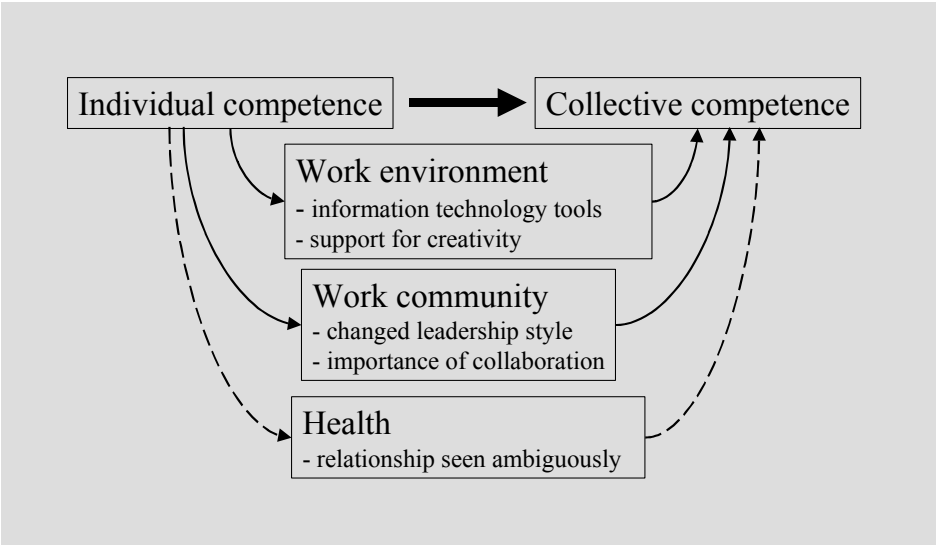


Figure 4 Logics of turning individual competence to collective competence

The wellbeing at work is argued to consist of all these described relationships. An ability to mould competencies residing in the organisation towards a collective character is required in order to meet the rapidly changing requirements of the business environment. The linkages specified in this study have an essential role in supporting this conversion. Mismatch in any of these causes strain that can prevent the creativity of the organisation. As mentioned earlier, there are some authors that have approached the wellbeing in relation to IC to some degree, but no rigorous framework has been used in building the argumentation. In this study, the relationship has been examined by maintenance of work ability as the conceptual framework. This approach defines the relevance of wellbeing to intellectual capital discourse utilising a well-defined frame of reference for factors that exert an influence on the intellectual capital of the company.

Figure 4 makes it clearly visible how knowledge management is fundamentally more than just about information and communication technologies. Conversion of individual competencies into collective character can evidently be seen as the main target of the whole knowledge management movement. Information and communication technologies do have an essential role in enabling this change, but other processes on different levels are needed simultaneously. For example, merely introducing new systems is not enough, but some kind of impetus for using them is needed, as well. This can be, for example, through ease in the workload by more efficient access to useful and maybe even previously unavailable information.

The significance of wellbeing in relation to intellectual capital is strongly linked to knowledge creation. However, the interview data on IC experts cannot give a more specific insight into revealing this relationship than that presented in Figure 4. Therefore, it is suggested that future research be done into the views of wellbeing experts, which could be scrutinised from the knowledge creation perspective in order to create a more illuminative insight into this connection.

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Appendix A

The question structure for the interviews

1. How would you define Intellectual Capital?
    - What old concepts has Intellectual Capital replaced?
        - Is this just a new form of old knowledge?
        - Which are the essential new issues that have arisen?
2. What factors influence Intellectual Capital?
3. How can Intellectual Capital be improved?
4. Can Intellectual Capital be measured by one instrument?
    - By what / why not?
5. What is the best indicator of Intellectual Capital?
6. What is the relationship between a company's financial performance and Intellectual Capital?
7. Is Intellectual Capital related to the company's financial performance in the short run or the long run?
8. Can there be situations where financial performance is improved but Intellectual Capital is weakened?
    - What are these situations like?
9. Are you familiar with the Balanced Scorecard?
    - Does BSC describe Intellectual Capital?
    - In what sense (example)?
10. Are you familiar with Human Resources Reporting models?
    - Do Human Resources Reporting models describe Intellectual Capital?
    - In what sense (example)?
11. What is the relation between Intellectual Capital and an individual's health?

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