ABSTRACT

This dissertation studies the contents of the concept of organizational competence. The concept of organizational competence refers here to an organization's internal capabilities to reach its goals.

The number of approaches that discuss organizational competence is large. Each individual approach looks at the phenomenon from its own context. This has resulted in a situation where terminology and concepts are confused in daily use, not to mention business and academic research.

The contents of the concept are studied by using foundational analysis. The research presents six key findings that form a foundational stance for the concept:

1. The expression organizational competence refers to an organization's internal attributes that enable it to reach its targets.
2. The number of attributes of organizational competence is large – theoretically the number is unlimited.
3. All of the attributes of total organizational competence can be classified under three separate super-attributes: assets, competence of the individuals and structural competence.
4. An organization's environment is not an attribute of organizational competence, but it has a constant effect on the competence attributes and the competence requirements.
5. Different stakeholders have different goals for the organizations, and thus organizational competence is observer-specific.
6. The use of the concept of organizational competence is context specific; thus the required set of competences depends dynamically on the situation.

These key findings result into a general definition of the concept: when we speak about organizational competence, we speak about an organization's internal capability to reach stakeholder-specific situation-dependent goals, where the capability consists of the situation-specific combination of all the possible individual-based, structure-based and asset -based attributes directly manageable by an organization and available to the organization in the situation.

Keywords: capability, competence, foundational analysis, knowledge, organization, performance, situation

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ACKNOWLEDGEMENTS

colleagues have helped me to polish my views, and given me continuously challenging points-of-view – thank you for your understanding and support.

During this constantly evolving course of my research two external communities gave me enthusiastically their full support. I would like to thank Society of Organizational Learning's Finnish fractal for the insights they have shared with me, and the whole international karate community for teaching me some important facts about the capabilities of individuals when given hard targets.

All the time my supervisor, professor Pertti Saariluoma, has been most supportive, and understanding for the pains that the changing process has created. My sincerest thanks to him. As the goal of my dissertation widened he was very helpful in guiding my journey in areas previously unknown to me. During the last months of the writing process professor Saariluoma was always pushing me to my limits; I believe that his effort makes this text easier to comprehend also to the possible fifth reader. Professor Arto Siitonen also deserves my gratitude for providing new insights in the later parts of the process.

I would like to thank the reviewer, professor emeritus Pertti Kettunen, and opponents, professors Mika Hannula and Matti Kamppinen for their constructive suggestions to the text, as well as Mr. David Goddard for helping me with the English language. There were also other reviewers that have asked me to keep their names from the public. Still, I would like to thank them all for their continuous support and the time they spent in making invaluably important comments.

Despite of the changing focus and continuous guidance in the contents of my research there has been even more important change process going on. As I began the process I wanted to study an external phenomenon. The more I studied, the more I had to turn inside; learn from myself, understand my motives and drives as well as my limiting beliefs and weaknesses. It has been most interesting to follow the personal change I have gone though during this process. For the continuous support and understanding in this sometimes very painful and socially limiting process I would like to thank my friends and relatives. Most of all, I would like to thank two most important people during the process and the life in general, gold and diamond:

you are the first, you are the last, you are my everything.

Thank you.

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1 THE PROBLEMATIC NOTION OF ORGANIZATIONAL COMPETENCE

Organizations are social units constructed by people and held together by a shared representation system (Kamppinen and Ruohonen 2001) in order to reach definite goals (Etzioni 1964, Parsons 1960). Understanding organizations is vital, because so much in our lives depends on organizations (Handy 1999). We all are members in numerous organizations. We are citizens, inhabitants of a city, members of clubs and employees or owners of firms.

Organizations live in turbulent surroundings. Ideas, markets, competition, financing, regulations and tens of other factors keep changing, and thus creating opportunities and threats. This change makes it necessary to constantly monitor the state and possibilities of an organization to survive, reach its goals and succeed. In order to avoid errors and faulty organizational thinking, it is vital to base assessments on rational concepts. Here, one of them – organizational competence – shall be investigated by means of and in the context of the multidisciplinary field of foundational analysis. The research is a foundational investigation of the contents of a concept. It is not a business scientific research even though the studied concept – organizational competence - is essential in the business science.

The success of an organization depends on its capacity to respond to internal and external requirements. If an organization does not have, for example, sufficient innovative capacity, it can hardly respond to constantly changing environmental requirements (Lewis 2001, Ritter and Gemünden in press). However, the number of factors making some organizations fail and some others succeed is very large, and it would be good to have a clearer idea of those factors. These factors form an enormous whole, the behavior of which is still quite intuitively understood. To describe the part of this multitude of interconnected and mutually interacting factors that an organization can govern internally, the concept of organizational competence will be used. When we speak of the factors governable by the organizations which make them survive and succeed, we speak of their competence factors – and of the whole of those factors from a work effort of the simplest floor person to the biggest technological breakthroughs and

financing possibilities. Everything within the boundaries of an organization that enables its performance belongs to its competence.

Intuitively, "organizational competence" is a very important concept. In the mid-1980's the General Motors and Ford were thriving, Chrysler miraculously survived crises (Iacocca and Novak 1984), but American Motors and many others had perished. The survivors and winners had known what to do and how to reach their goals, while others had failed. This means that the former had a realistic idea about what they can do and how they should act accordingly. They had had a good idea about their competence and the factors explaining it, as well as the idea of how to use their competencies.

There are several reasons why the managers of organizations must understand the competence of their organization (Burgelman 1990, Hamel and Prahalad 1994, Senge 1990). The analysis of structures, processes and cultures in the organization depends on understanding competence (Burgelman 1994, Weick 1993). This concept is also important in planning and organizational development and learning, because a clear understanding of strengths and weaknesses is essential to directing these activities (Argyris 1992, Hamel 1998). Zott (2003) has shown that very small initial differences among firms can generate significant differences in their performance (p. 97).

In addition to management, there are many other stakeholders who need a good understanding of an organization's competencies (e.g. Banfield et al. 1996). Good examples are market analysts, investors, partner enterprises and creditors where competence is essential to their analysis regarding the viability of the company (Stewart 2001). Prudent financing decisions presuppose accurate and timely knowledge concerning what an organization can realistically achieve. Understanding an organization's competencies may also be important for employees who plan their careers and lives. This planning is, at least to some degree, based on their confidence in their employer's viability. A young worker may not be likely to invest her full motivation in an organization, which she cannot trust to be competent. A talented person cannot make progress in developing her skills nor is an aging person able to count on a safe retirement in an incompetent environment. These situations demonstrate why being able to understand the overall competence of an organization is critically important to employees.

Critical mistakes can be made in assessing organizational competence. Telling examples of this can be found in plenty. The experience of some Finnish banks, which transitioned to foreign organizational cultures with severe consequences (Hiilamo 1995); certain telephone operators that financed the now infamous UMTS-auctions in European markets (Marttila 2002); the American car industry after the first oil crisis (Iacocca and Novak 1984). These examples may be sufficient – in addition to the reader's own experiences - to prove why it is worth understanding the nature of organizational competence.

1.1 Scientific approaches related to organizational competence

The goal of better understanding the concept of organizational competence is by no means a new one. There are several approaches related to the subject. The number of these approaches has become a major problem in understanding the contents of the concept of organizational competence. These approaches use similar terminology, but do not always define the terms they use, creating confusion in the reader (see, for a good analysis about these terminologies used for managerial approaches, Ahonen 2001 and Juuti 2001). Despite their relation to the concept of organizational competence, none of the approaches studies the contents of the concept of organizational competence.

Seven approaches related to organizational competence that have been discussed lately shall be presented here. The presented approaches are: organizational learning and learning organizations; individual-based competency theory; the theories of intellectual capital management; strategic human resource management; organizational core competence theory; performance management; and knowledge management theories. Each approach will be presented as an individual item. In reality they are not independent of each other. All of the presented approaches have had some effect on the others. Nevertheless, it is easier to follow their contribution to the theme of organizational competence if presented independently. The approaches are presented here in the order in which they were made well-known to give the reader an understanding about the order of interactive contribution.

Intellectual capital management (ICM) places intangible assets into the same thought frame as accounting for tangible assets (Bontis et al. 1999, Brooking 1996, Edvinsson and Malone 1997). The approach sees intangible assets, competence being one of them, to be measurable and manageable assets of an organization. According to Jack Welch, ex-CEO of GE in 1991, "intellectual capital is what it's [business management] all about" (Stewart 2001). The history of the approach can be tracked at least to Hermanson's study about accounting of human assets (1964). Currently the intellectual capital management "concentrates on modeling and measuring the competence capital stock" (Kirjavainen and Laakso-Manninen 2000, p. 37).

Argyris and Schön presented the theory of **organizational learning** in their book *"Organisational Learning: A Theory of Action Perspective"* (1978, 1995). The basic idea was that the organizations are able to learn, not only the individual members of the organization. Hayes and Wheelwright (1984) have suggested several processes by which organizations can learn. Their suggestions are: individual learning, better selection and training, improved methods, enhanced equipment and technology, more appropriate division of labor and specialization, improved product design, substitution of capital for labor, incentives, and leadership.

Nonaka has developed these ideas further first with Takeuchi (Nonaka and Takeuchi 1995) and then with Konno (Nonaka and Konno 1998). Nonaka's approach presents an organizational learning cycle, by which the knowledge is

created and moved in an organization, and four favorable places, "ba"s that support the knowledge creation and transforming. The "ba"s Nonaka and Konno presented were the originating ba, interacting ba, cyber ba, and exercising ba (Nonaka and Konno 1998). Simultaneously Senge (1990, Senge et al. 1994) presented a list of five disciplines that an organization should follow in order to become a learning organization, the five disciplines being personal mastery, mental models, shared vision, team learning and system theory. The theories of organizational learning have jumped several boundaries and can nowadays even be found as the stances of political regional development activities (Markkula 2003).

The **individual-based competency approach** was first presented by Boyatzis (1982). The idea that the individual employees were the source of an organization's competence had been studied earlier (e.g. McClelland 1961), but Boyatzis and the other followers of this tradition (see, for instance, Eriksen and Mikkelsen 1996, Gardner 1993, Goleman 1995 and 1998, Muffato 1998, Spencer and Spencer 1993, Their 1994, Woodruffe 1993) emphasized the terms "core" and "threshold" competencies in relation to people's capabilities. The core competencies were defined to be causally related to superior job performance (Eriksen and Mikkelsen 1996), and the other capabilities were defined to be the threshold competencies (Boyatzis 1982). The core competencies of individuals are seen as giving competitive advantage to organizations.

The term "**Strategic Human Resource Management**" (SHRM) was coined in the 1980's (Hendry and Pettigrew 1986, Pettigrew 1988, Wickens 1987) and was widely discussed in the 1990's (e.g. Clark 1995, Ghoshal and Bartlett 1997, Legge 1989, Mabey et al. 1998, Storey and Sisson 1993). The general idea is that one of the key contributors to corporate success is the relationship between the employees and the employer (Ghoshal and Bartlett 1997, Toffler 1980). Ghoshal and Bartlett define the traditional relationship as exploitative, and that the goal of SHRM is to make the employees generally more employable – thus putting pressure on the employer, since it has to provide the employees with a job that is interesting and satisfying. Another important idea is that the focus should not be on individual employees, but on shared working methods, team approaches etc. (Clark 1995). There are also SHRM-approaches that recognize, even though they stress the importance of motivated and competent employees, that the organization's interest is primary, and the goal of SHRM is to improve the competitive advantage generated by the employees (see, for instance, Jarrell 1993, Lengnick-Hall and Lengnick-Hall 1990, Starkey and McKinlay 1993).

The organizational **core competence** approach was made famous by Hamel's and Prahalad's book "*Competing for the Future*" (1994). A similar concept of competencies as bundles of inter-related organizational resources had previously been proposed in scientific articles by Leonard-Barton (1992), Peteraf (1993) and Prahalad and Hamel (1990),). The core competence -approach is based on the idea that the competitive advantage of a firm must be created inside the company, it cannot be gained just by collecting the resources available in the environment (in addition to the mentioned three articles, see Conner and Prahalad 1996 and Kettunen 1997)

The approach of Hamel and Prahalad (1994) presents a process and tests that can be used to define the customer value-adding, differentiating and extensible organizational core competencies. The core competencies are wide concepts, for example an access to certain markets, understanding customer benefits and finally, creating products and services that are difficult to duplicate. (Hamel and Prahalad 1994). Later studies that have followed the approach have stressed core competence as a quality of an organization, not related to individual people (Eriksen and Mikkelsen 1996, Hamel 2000, Prahalad 1998).

The importance of **performance management** approach became evident with Balanced Scorecard (BSC) methodology of Kaplan and Norton (1992, 1993, 1996). The approach became very successful in a short time – Silk (1998) estimated that 60% of the Fortune 1000 companies had had experience with the BSC-approach. Rigby (2001) showed in a world-wide study that Balanced Scorecard had a 44% utilization rate. However, the history of performance management can be tracked beyond Kaplan's and Norton's (1992) approach, if management accounting is understood as the direct forefather of performance measurement and management approaches (Otley 2003). Performance management's key ideology is to base management and control of an organization's performance on the constant measurement and assessment of selected strategic metrics (e.g. Azofra et al. 2003, Kaplan and Norton 1996, Otley 2003). One key idea of this approach is to find the critical success factors of the organization, and use them as the measurement items (Kaplan and Norton 1993, 1996, van Veen-Dirks and Wijn 2002). Lately performance management approach has been widened beyond the original BSC-method, as new metrics and localizations have been added to the original theory (see, for example, Malmi 2001, Nilsson and Kald 2002, Speckbacher et al. 2003).

Knowledge management theories arose as it became evident that today a major part of work can be defined as knowledge work (Ståhle and Grönroos 1999, Sveiby 1997) and businesses draw a major share of their competitive advantage from knowledge (Boreham and Lammont 2000, Burgelman 1990, Burgelman 1994, Sveiby 1997). The family of knowledge management theories is a collection of numerous approaches, which are not always aligned (Juuti 2001, p. 311). The knowledge management has been defined as a job to "systematize processes in which knowledge transforms and moves within an organization" (Kirjavainen and Laakso-Manninen 2000, p. 37). In addition to this transformation and moving view, knowledge management is also concerned about storing knowledge. Organizations must be able to maintain knowledge through personnel changes and they must be able to forget out-dated knowledge so that it does not affect decision-making (Argote 1999, Lähteenmäki et al. 2001, Prahalad 1998).

The presented seven approaches are strongly inter-woven. For instance Juuti (2001) and Ahonen (2001) have studied their evolution from the traditional "Weberian" (Weber 1978) and "Taylorian" (Taylor and Wallichs 1912) managerial practices, and see them constantly affecting each other. The major similarities between these approaches are their focus on strategic level management and the importance of people in the context of organizational success. In addition to focusing on people, systems, strategies and management these approaches also have another area in common: they are strongly influenced by consultant studies

and approaches (Ahonen 2001). The relationship between scientific research versus consultative "research" makes it even more difficult to follow the traditions as individual approaches, because the majority of the publications do not define their terminology (Ahonen 2001). However, Juuti (2001 pp. 388-390) claims that the evolution of these approaches is symmetrical with the life-cycle of the earlier managerial approaches, and as such, a focusing of the approaches around more solid and clearly defined centre ideologies is or will be taking place.

1.2   About the terminology

So far the discussion has consisted of examples and discussion showing the importance of the researched phenomenon, and the earlier related scientific approaches. However, before it is possible to advance further, the basic terminology must be defined in more detail, i.e., what is meant, and not meant, by terms "competence", "organization" and "organizational competence". The free use of the terms in the presented earlier approaches may have already created some confusion to the reader.

The number of available definitions for the term "competence" is large. For instance, Ensyclopædia Britannica Online (2004) refers to competence as "a sufficiency of means for the necessities and conveniences of life", and as "the quality or state of being competent". Longman Dictionary of Contemporary English (1987) defines competence to be the "ability to do what is needed". Oxford English Dictionary Online (2004) defines the competence as (amongst several other things) "sufficiency of qualification". Kirjavainen and Laakso-Manninen (2000, p. 12) say: "Competence (lat. competentia) means a match between the task and the capability". Barney (1986, 1991) discusses firms' sustainable competitive advantage, and defines it as arising from implementing a superior value creating strategy not simultaneously being implemented by any current or potential competitors. By doing a conceptual analysis for these definitions it is easy to see that the term competence refers to subjects' comparative qualities to reach the defined goal. Competence is an actor-specific state, which the actor either holds or not, i.e., the actor either is competent or not. This definition of the term "competence" can naturally be allied to organizations. We indeed need to know what are the internal means and properties of organizations, which allow them to survive and succeed, and "competence" is as good a term as any other.

There is a related term that is close enough to the term "competence", that it is justifiable to ask what its difference to "competence" is. This term is "performance", discussed lately in organizational context in the area of performance measurement (see, for example Azofra et al. 2003, Boyatzis 1982, Hofrichter 1999, Spencer and Spencer 1993) or performance management (e.g. Kaplan and Norton 1996). Both Encyclopædia Britannica Online (2004) and Oxford English Dictionary Online (2004) define the terms "performance" and "competence" as being related to each other. However, both sources also state that there is a difference between the terms. The term "performance" refers to "the

manner in which a mechanism performs" (Encyclopædia Britannica Online 2004), or "something performed or done; an action, act, deed, operation" (Oxford University English Dictionary 2004), or "the ability of a person or a machine to do something well" (Longman Dictionary of Contemporary English 1987). Thus in an organizational context the term "performance" refers to an action that an organization takes, and the (good) results it provides (see, for example Kaplan and Norton 1996). When this is compared to the term "competence", it can be understood that "competence" refers both to the state and internal qualities of an organization (i.e. "to be competent") and the means and mechanisms that an organization holds in order to show competence as required by a set goal. Thus organizational competence creates performance for the organization, and if the organization has a good-enough performance it has been competent and reached the given goal. From the two presented terms, the term "competence" better describes the whole of the phenomenon of an organization's capability to reach its goals, and will be used to describe the studied phenomenon.

What, then, is an organization? Does the term "organization" refer to a rational entity that is the solution between the need for collective order and the individuals' pursuit of well-being (Reed 1996, p. 31)? Is the organization an entity that exists in order to bring together a group of specialists to achieve integration of their knowledge in the productive process (Grant 1996)? Or are organizations entities that are defined by their discussion, as postmodern organizational approaches see them (for a detailed discussion about postmodern organizations, see Juuti 2001, pp. 125-146)? A holistic approach to the organizational theory was presented by Morgan (1986), as he proposed several metaphors and analogies that define organizations. Morgan's metaphors presented organizations as machines, organisms, brains, cultures, political systems, psychic prisons, flux and transformation, and instruments of domination. Morgan emphasized that the way an organization is seen and understood depends on the observer, and that there is no right answers when dealing with organizations (Handy 1999). Foss (1999) has stated that the conceptualization of a firm depends on the purpose at hand. As such, these postmodern views are very closely related to the basic stance of foundational analysis, and its view of the intuitive part of any human decision (Saariluoma 1997), as will be presented later.

For the purpose of studying the contents of the concept of the organizational competence it is important not to exclude any type of organization outside the boundaries of the study. Otherwise the study would be for example about a firm's competence, or a large organization's competence. Thus, the very basic commonalities of the presented approaches will be taken as the definitive qualities of an organization:

An organization is an entity that consists of more than one person, which by common agreements define themselves as an organization.

Neither the agreements nor the definition has to be written down, or even discussed; a tacit agreement is adequate. The organizations may have a short or a long life-span. They may be firms, corporations, hospitals, clubs, societies, schools,

etc. The people may belong to the organizations voluntarily or involuntarily, as may be the case of a prison-organization. A group of people that do not share a common agreement of co-operation and do not personally define themselves as an organization are not an organization. Such groups are outside the limits of this study.

The definition for the combination of these two terms, i.e. "organizational competence" will be presented later as the subject is studied in more detail. For now it is enough to understand that it refers to an organization's internal capability to reach its goals. However, it should be understood that the studied term, "organizational competence", is only two words next to each other. What is important is what this term refers to. The scientific approaches are only agreed languages that are used for discussing common concepts. Saariluoma (1997) notes that the [scientific] concepts are defined to organize the world for us, but that reality's complexity is always greater than that referred to by a defined concept. Miyamoto Musashi explained in his book "*Go rin no sho*" from the year 1645 that in practice all the schools (*ryu-ha*) of different arts are referring to the same situation of Nature, only looking at it from different angles, and the differences between different schools (=definition systems) are irrelevant; the importance lies in understanding the foundations and universal laws (Musashi 1974, pp. 40-42). Similarly the introduced holistic notion of organizational competence should be understood to be a concept referring to a natural situation, not a term within one classification system. If it were dependent on a previously defined classification system as, say, the core competence –approach presented by Hamel and Prahalad (1994), it would not be a holistic notion but only a sub-notion of the mentioned system.

Due to this independence of the classification system it can be said that the studied concept of organizational competence is not an "-ism", by what is meant a quickly passing terminology that is replaced by a new "-ism" in a few years. The term may change, but the contents of the term, the organization's internal capabilities to reach its goals, is most likely a timeless concept. On the basis of their success Alexander the Conqueror's Macedonian armies had a better organizational competence than their Persian and other counter-parts despite their smaller numbers (Mintzberg et al. 1998, p. 7), similarly as the English fleet had better competence than the Spanish grand fleet. The term "competence" could have been replaced by the term strategy and tactics in these cases, but the phenomenon is the same: an organization's internal capability to reach its goals. Thus the studied concept is relevant in an organizational context despite the short term "-ism"s and their terminology.

Naturally independency does not mean irrelevancy of the earlier research. The earlier classification systems are most relevant, as has already been presented, and especially the empirical evidence that they have shown to be true. The holistic notion must be able to provide a stance that supports the existing correct data (Saariluoma 1997).

1.3   The research problem

We can see that organizational competence is a widely needed and used concept. The concept not only facilitates the rapid tactical reaction of management but it may also serve as a basis for deeper and very fundamental investigations (Nordström and Ridderstråle 1999, Teece et al. 1997). And this deeper understanding of the fundamental content of the concept can be seen to be confusing when comparing the presented approaches. Thus, before it is possible to develop practical means for systematic competence analysis, the fundamentals of the concept must be systematically analyzed. A systematic analysis of competence in an organization presupposes a systematic understanding of competence as a concept.

At this stage our conception of organizational competence is very intuitive. We can hardly say that we have an equally clear idea about this concept as we have about the concept of a circle, for example. We have demonstrated that the term competence is a good linguistic expression for the idea. We can also argue that the problem is vital. We also have a relatively large literature addressing sub-problems of problems of organizational competence, but we do not have a clear idea of the notion of organizational competence as a whole. In this thesis, I shall work to construct and introduce such a holistic notion. Thus the main research problem can be formed as:

What are the contents of the concept of organizational competence?

The question is wide and open, and due to its conceptual width it cannot be answered by a simple word or a phrase. Because of the variety of the earlier approaches related to this question the methodology of the study must be carefully selected. Otherwise there is a possibility that the problem is studied only from one specific angle, and the contents are studied too narrowly. The problem is to understand the holistic foundation of the concept; to go beyond the presuppositions and intuitive opinions found in the earlier research, and to understand the basic truthful commonalities found from the presented approaches. Thus a research method that studies the foundations of the scientific concepts is needed. The selected method is called foundational analysis (Saariluoma 1997).

Before advancing to the methodological discussion two important exclusions must be made: (i) neither the practices by which competence can be managed (ii) nor the ways to measure competence will be studied and discussed. Because of these two exclusions alone the research is not business scientific, but foundational. Even though the concept is very important in a practical organizational context (e.g. Hamel and Prahalad 1994, Roos et al. 1997, Teece 2000, Teece et al. 1997, Wernerfelt 1984), the goal is to study the contents of the concept of organizational competence itself, to improve the understanding of the concept (e.g. Ahonen 2001), not to find ways to exploit it in practical situations. Thus any proposals for the way the concept should be used are not presented. Proposals in science can only be

evidence-based (Saariluoma 1997), and no new empirical evidence will be introduced. The analysis of a theoretical concept makes it possible to improve the clarity and validity of a more practical argumentation (Saariluoma 1997, p. 59). The goal is to "build a holistic stance" or a "common foundation" for the concept of organizational competence, not to discuss the ways of understanding the level of organizational competence or to the ways of affecting organizational competence, i.e., to measure or manage it.

2   FOUNDATIONAL ANALYSIS

The importance of concepts is mostly acknowledged in theory, but frequently underestimated in practical research. There is very little doubt that the first idea of many readers is to ask critically, and not without any ground, why study organizational competence as a concept. Would it not be better to make empirical work in organizations? Why choose such a cognitive scientific combination of philosophy and organization theory instead of measuring competence? The right way of doing science is setting hypotheses and testing them; formulating propositions and then verifying or falsifying them to make the propositions scientifically meaningful.

These kinds of questions are justified, and indeed, it undoubtedly is necessary to work empirically with organizational competence. However, the empiricist position misses one counter-argument. Hypothesis are constructed of theoretical concepts and they cannot express anything that the theoretical concepts do not entail. Thus, making hypotheses and testing them, before it is possible to know accurately what really is asked and does it make sense to ask questions concerning competence in the way they are asked today, for example, is a good example of what is meant by practical underestimation of conceptual work.

The above point has become very evident, as the inbuilt conceptual presuppositions and ontological commitments in the prevailing notions related to the concept of competence have been discussed. They all contribute essentially to the notion of competence, but they do not have sufficient power of expression to allow discussion concerning the total competence of an organization (for reviews to competence-related literature see for example Argote 1999, Argyris and Schön 1995, Boyatzis 1982, Hamel and Heene 1994, Mintzberg et al. 1998).

Moreover, we already have much empirical information on the factors which help firms survive, succeed and reach their goals. Therefore, it is better now to look first at what we already to know on empirical level, which might be relevant in working to understand what it means when we speak about and work with organizational competence. In order to grasp these basic cognitive scientific points,

it is necessary to consider for a moment what the foundational stance of a concept might mean. What are its motivations and methods?

A foundational stance begins with the idea that empirical work is based on setting hypothesis and testing them. However, as mentioned above, hypotheses are nothing but combinations of scientific concepts. Their contents and meaning depend on the contents of the concepts (Saariluoma 1997). This is why one cannot underestimate nor neglect investigation of theoretical concepts. One must know, what one means when asking questions. Meaning comes before truth. If we do not know what our hypotheses mean, we cannot correctly interpret our empirical results (Saariluoma 1997).

The history of science demonstrates the importance of concepts. Before a scientific theory is formulated, it cannot be scientifically studied. It was impossible to calculate the ratio of the diagonal and the side of a square before real numbers were developed. Saariluoma (1997) presents several cases from psychology, in which a concept has been properly studied only after the initial theory was formulated, and how the previous studies close to the subject have been shown wrong on the basis of the inadequacies in the theories they had been built on. This shows that progress in science depends on the progress of scientific notions.

The approach in which the basic elements and intuitions of scientific thinking in a discipline are considered under rational scrutiny is called foundational analysis (Saariluoma 1997). This way of looking at science begins with the idea that all scientific knowledge is ultimately intuitive. All argumentative chains end somewhere and from that point onwards the foundations are intuitive. Ahonen (2001) has discussed in detail the intuitive foundations of the theories of business management. In the end, all theories relate to some beliefs and intuitions that are hidden, for example, in scientific methods, concepts, theories and logic (Nagel 1961, Popper 1959, 1972, Saariluoma 1997).

Intuition in foundational analysis refers to the fact that scientists' perceptions and observations of truths and facts depend on their pre-learned ideas, theories and world-views. The truths are true, but all perceptions of them are based on the perceivers' meaning system. (Saariluoma 1997). Hanson (1958) has argued that seeing something is not the same as seeing the same thing **as** something.

"Intuitive" does not mean that the foundations would automatically be incorrect. We just do not know whether they are true or not. This is why it is important to rationally consider such basic assumptions as the structure of theories, presuppositions of empirical findings or contents of conceptual knowledge (Saariluoma 1997).

When traditional "Newtonian" physics proved to be unfounded it became evident that foundational stance is unavoidable in science. It must always be alert with tacit problems in its basic assumptions. Indeed, systematic investigation into such problems is one important way to make progress. Einstein's findings concerning the photoelectric effect in 1905 did not only give an answer to the immediate problem of understanding the quantified results of the measurements of the energy of photons, but it also worked as a foundation for the later general theory of relativity and quantum physics (e.g. Ohanian 1985).

Foundational analysis is a method by which it is possible to create a holistic stance for a studied phenomenon. The previously discussed concept "holistic stance" refers to the true foundations under the set of hidden and tacit presuppositions on which the research of the phenomenon is built (Saariluoma 1997). Foundational analysis offers a set of tools that can be used for investigating different concepts.

2.1   Concepts and their investigation

This investigation is foundational, because it focuses on the intuitive foundations of competence research. The main problem is concerned with the contents of one concept: organizational competence. This is why this research is an example of conceptual analysis, i.e., explicative research on an important theoretical notion. It attempts to explicate what is a rational form for the notion of organizational competence. There are other types of foundational problems, such as the analysis of experimental presuppositions, but here the main question concerns conceptual analysis. (Saariluoma 1997).

Naturally, this kind of research presupposes many things. It is necessary to investigate what people have meant in the earlier competence research by notion of competence; it is necessary to explicate the new notion of organizational competence and find its major attributes. Finally, it is also inevitable to test the new concept of competence in empirical contexts and clarify what kind of perspective it shall open for investigating organizations, considering their needs and how this concept could best help the numerous interest groups needing information concerning how capable an organization is to reach its goals. In this work the goal is to analyze and clarify the concept of organizational competence. This naturally presupposes that we have a clear idea about what does it mean to analyze a concept like organizational competence.

We have numerous possibilities to investigate concepts. Mostly scientists have been interested in their classificatory properties. Notions of extension and intension are typical in this kind of investigation. The focal problem is to define which objects, events or entities belong to a given name or class. In this kind of research, we work to find out criteria for making a difference between two notions. For instance, we work to find a justification why some entities belong to animals and some others to plants.

This kind of conceptual analysis is to some degree essential here. We have to learn what are the differences between competence and some related notions. For example, it is good to understand what are the differences between organizational competence and competence of the individual members of an organization. It is also important to understand how competence differs from knowledge, or how core competencies are related to organizational competence.

However, concepts should not be seen only as classificatory agents, because this way of thinking does not help to solve some other types of scientific problems in which concepts are central. When we are interested in what is organizational

competence, the main problem is not to find out how it differs from some other related notions, but rather what we speak about when we speak about organizational competence. This means that the desideratum is the kind of properties that make an organization competent. If we discuss concepts of health or prosperity, it is good to know their difference to illness and need, but the decisive perspective is to find out what makes a healthy person healthy and wealthy person wealthy.

For coping with these kinds of cases, Saariluoma (1997, 2002) has developed the notion of conceptual content. This notion refers to the set of true attributes of a concept. All events, objects and entities have their properties. These properties are expressed in the content of concepts by their attributes. A car has such technical properties as an engine, wheels, pistons, colour etc. On the other hand, a car may also have social attributes that are dependent on the belief-system of the observer. Some of these attributes could be style, appropriate speed, comfort, luxury, etc. All these attributes express some property of a car. This is why one can suggest that they as a whole contain the contents of a concept.

Now we can come back to the main problem of this text. It is to explicate and describe the notion of organizational competence. This means giving as accurate an explication for the notion of organizational competence as it is possible. The major attributes and their next level sub-attributes are described as accurately as possible. After this we are aware of the contents of organizational competence.

This research works to explicate as widely as possible all kinds of attributes of organizational competence. This can be called the total conceptual contents of the notion of organizational competence (cf. Saariluoma 1997, 2002, for the concepts of total contents of a concept). To put the task a little less philosophically, this dissertation discusses all the properties of organizations which make them become and stay successful. These properties should be expressed in the contents of the notion of organizational competence.

Saariluoma (1997) expresses an additional property of conceptual contents. This is content integration. This means that the attributes of concepts are integrated and they are in some inter-attribute state. The increased power demands of an engine make it necessary to increase its size and fuel consumption. To understand the structural connections between attributes is also important from the concept theory point of view. This is why in addition to presenting the attributes, it is also necessary to investigate their complex interrelations.

2.2 Using foundational analysis to study organizational competence

How, then, should the presented methodology be used for studying the presented concept in practice? What must be presented and proved in order to create the holistic stance for the concept? Saariluoma (1997, p. 67) states that "to understand a concept is to be able to know its attributes, the way they are organized, its

definition and its use in different contexts." Thus to understand the concept of the organizational competence is (i) to understand the attributes that create the organizational competence and (ii) how they are organized, (iii) to understand the definition of organizational competence, and (iv) to understand the use of the concept of organizational competence in different practical contexts.

The first requirement is to understand the attributes of organizational competence, see figure 1. The figure illustrates the way in which a set of attributes of a studied phenomenon are individual 'points' within the boundaries of the phenomenon. According to the foundational analysis the attributes should have two important properties: they should correspond to facts, i.e. be true, and they should be meaningful in the studied context (Saariluoma 1997).
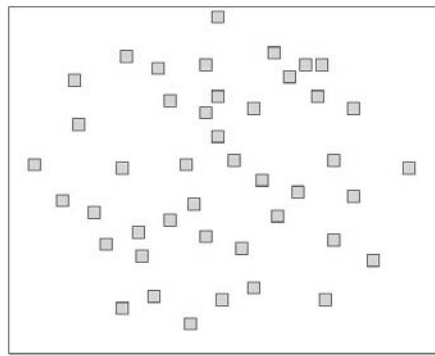
FIGURE 1   Attributes within organizational boundaries. The first step of foundational analysis requires that a sufficient number of attributes is presented about the studied phenomenon. The large rectangle represents an organization and the boxes represent attributes.

The attributes must be capable of being scientifically tested in order to be true. In the case of organizational competence it means that evidence must be shown that the presented attributes may have an effect on an organization's capability to reach its goals. It should be noted that there is no need to show that a presented attribute always has an effect on any organization's competence. Since the goal is to introduce a holistic concept, it should be such that it entails all the possible situations, i.e. one should try to find such attributes that may but do not always need to have an effect on the competence.

The other property required of the conceptual attributes is their meaningfulness. The studied attribute must be shown to have a meaning for the success of the organization. For example, it could be claimed that the hair cut of a sales-person may have an effect on the organization's capability to reach its goals, but it is most likely that some other attributes such as the product, its cost and the skills of the sales-person are more meaningful.

The attributes that will be discussed are based on earlier research. This will ensure that they are at least meaningful, and support the understanding that they are true as well. It could be asked, whether the presented attributes are also the most important ones. As the discussion about the situation-dependency of organizational competence will later reveal, this is not a relevant question. For the

methodological presentation it is enough to note that all the presented attributes can be found from the earlier approaches related to organizational competence.

It should be noted that there is neither the need nor is it possible to define all the attributes of organizational competence. It would be impossible to define each attribute, since their meaningfulness is a relative concept. The meaningfulness of one attribute in organization A may differ from its meaningfulness in organization B. It would prove to be difficult or maybe impossible to draw the line on the meaningfulness of an attribute for every organization. For example, an individual-based attribute that is not meaningful in a multinational corporation, could be most meaningful in a small local store, or vice versa: the ability to manage multinational finances may not be as meaningful in the context of a 4-person marketing firm. However, foundational analysis does not require us to define all the attributes of studied phenomenon; the presented list should cover enough to show the relative organization of the attributes.

The second item in the methodological requirement list is to reveal the conceptual structure of the studied phenomenon. The attributes should be organized in some logical order so that the related attributes are close to each other. Saariluoma (1997) defines this type of task of analyzing the presented attributes of a phenomenon and then composing them by a common denominator system as recompositional technique. Thus it should be studied if it is possible to classify the presented attributes under some headings, to form them in families sharing some common denominators. The names of these families can be further used as headings, under which attributes that have not been presented can be classified. This situation is illustrated in figure 2. The attributes of a phenomenon presented in figure 1 have now been set into classes sharing some commonalities. The attributes are the same as in figure 1, i.e., they are located in the same places in relation to the phenomenon, but their organization makes it possible to 'fill in the blanks', or to show the way in which they are structured within the phenomenon.

Some of the discussed attributes may have connections to each other; some may be sub-attributes of the others, and some may even form a continuous circle with each other. For example, an individual's commitment to an organization may affect her motivation, and motivation may affect her commitment. However, this is a typical property of the conceptual attributes (Saariluoma 1997). Thus it is not methodologically problematic to present attributes that have relations to other attributes. However, two attributes should not have exactly the same contents; in this case they would be the same attribute, and only the used term would change.
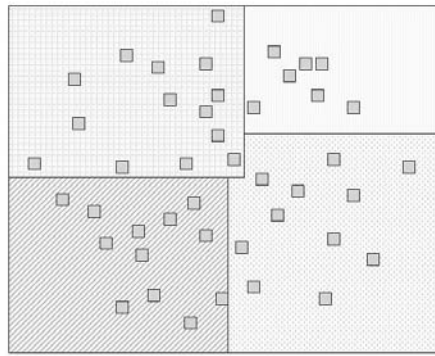
FIGURE 2   Structure of attributes. The presented attributes are classified by a logical common denominator in groups. The defined groups form a foundation also for other possible attributes that were not presented. Four different groups are represented by different colours and patterns.

The third methodological task is to put the presented organization of attributes to test in practical contexts. These will present the important use-contents of the studied concept. The notion of use refers to the set of conceptual attributes, which are important in a particular context (Saariluoma 1997). To understand the concept of the organizational competence we must understand what are its important attributes in different use-situations.

The use-contents of a concept thus varies substantially between contexts, see figure 3 for illustration. The presented attributes are still the same as in figure 1, and their structure is the same as in figure 2. However, the attributes required per situation, represented by white ovals, are different in two use-situations. They may be as well single attributes described earlier as other attributes that fall within the defined classes.

Case A   Case B
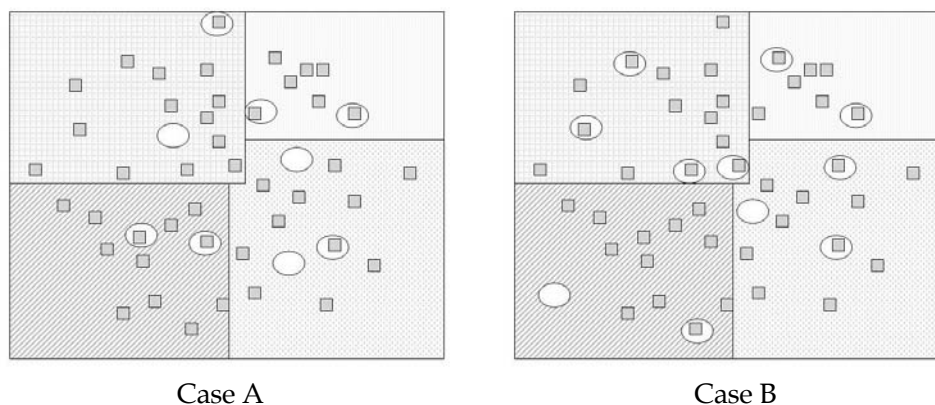
FIGURE 3   The required attributes in two contexts. The figure presents two cases, where the set of presented attributes are the same. However, in both cases the set of attributes needed in the context (represented by the white ovals) differ, and the required set al.so contains attributes that have not been previously presented.

The attributes needed in a context are eventually dependent on the prevailing circumstances and the environmental factors. For example, the CEO's character is important in an annual meeting, but much less so during the night shift in the

mill's foundry. These shifts of contexts give specific dynamism to the concepts. We do not use them always similarly (Saariluoma 1997, Wittgenstein 1953). The notion of organizational competence is naturally not an exception.

Fourthly and lastly, the attributes and the use-situations will be used for creating a definition of the concept. After the concept has been defined, all the requirements of the foundational analysis for understanding the contents of the concept of the organizational competence will be fulfilled. However, it should be understood that the presented definition will not be the primary goal of the research. All four methodological tasks (attributes, their structure, use-situations and definition) are defining the concept, and the presented "definition" is only a crystallization of the whole task.

Before advancing to the studying of the attributes, one item should still be discussed: the empirical information that will be used when the concept is studied. The empirical information can be found from the previous scientific discussion and practical experiences, often recorded by consultants, about organizational competence. Since the goal is to build a foundational stance for the contents of a concept, it is elemental that the stance contains all truly experienced cases. Because the "consultative war stories" form a large amount of available literature about the practical cases in the organizations they should be considered in the context of the study. However, due to low scientific level that these sources represent, it is most important to look at the empirical information they provide constantly with a critical eye. No attribute presented should be based only on the practical cases, but some scientifically meaningful evidence should always be presented (Saariluoma 1997). The practical stories should be seen more as illustrative ways to present the usability of attributes.

It should also be noted that very cross-scientific academic sources will be used for studying the concept. The reason for this is that organizational competence is a multifaceted concept, and it has been studied in several scientific areas – thus reference material includes organizational science, managerial science, psychology, sociology and philosophy. If a psychological study shows that the motivation of an individual is an important aspect in order for her to give her best effort, it should not be required to repeat the same study in other fields of science; the acquired results should be transferable between scientific areas. If this type of sharing between fields of science would not be allowed, every other area but mathematics would need to define their calculation principles. Thus, when the study is focused on a wide and holistic concept it is important to refer to the research from several different fields.

The sources have been selected so that they will either prove the truthfulness of studied item, or so that they will increase the understanding of what has been proved at an empirical level. The practical illustration is relevant in working to understand what it means when we speak about and work with organizational competence. Since the amount of possible sources is very large, especially the practical sources referred to have been practically randomly selected. The scientific sources have been selected either from the latest empirical research or from the key approaches related to the studied item. Since the amount of different schools and approaches is fairly large, and the terminology often mixed, it can always be

argued that additional references could have been added. However, if the referred sources are adequate to show the truthfulness of the studied item, this is not scientifically problematic; the goal is to show the truthfulness of the item, not to present all the corresponding approaches.

3 THE ATTRIBUTES OF ORGANIZATIONAL COMPETENCE

Foundational analysis of the concept of organizational competence begins by studying the attributes of the concept. Since organizational competence concerns the organizations' capability to reach their goals, the attributes of organizational competence are the internal factors enabling the organization to reach its goals. According to the presented methodology, the presented list of attributes will not contain all the possible attributes of organizational competence, but only a substantial amount to show the different aspects of the concept.

By analyzing the presented theoretical approaches it is simple to find at least three such groups of attributes: individual-related competence attributes, organizational structure related attributes and attributes related to the tangible assets of the organization. This division can be found in the intellectual capital management approach of Skandia as presented by Roos et al. (1997). They define intellectual capital as being divided into two areas: financial capital and intellectual capital, and again divide intellectual capital into human capital and structural capital. Similarly, Prahalad (1998) divides organizational knowledge into people-embodied knowledge and capital-embodied knowledge. Since his approach is used for studying organizational knowledge it does not include the aspect of financial capital. Handy (1999) states that the effectiveness of an organization is created by the individuals, the organization itself, and the environment. Interestingly, Handy does not consider an organization's tangible assets to have meaning for the organization's effectiveness.

The presented seven approaches look at this three-fold division from different perspectives. The individual-based core competency approach as well as intellectual capital management, learning organizations, performance management and strategic human resource management consider an individual as an important element in creating competence for an organization (see, for instance, Boyatzis 1982, Hendry and Pettigrew 1986, Roos et al. 1997, Senge 1990). All but

the individual-based core-competency approach consider organizational structures and shared methods as an important generator of organizational success (see, for instance, Boyatzis 1982, Hamel and Prahalad 1994, Hendry and Pettigrew 1986, Roos et al. 1997, Senge 1990). And the accounting-related backgrounds of intellectual capital management and performance management as well as the core competence approach stress the importance of the tangible assets in addition to the intangible assets (see, for instance, Hamel and Prahalad 1994, Roos et al. 1997). Thus it is safe to claim that there is earlier scientific support for using this initial structure to study the contents of the concept of organizational competence.

3.1   Attributes related to individual employees

The attributes related to individual employees refer to the qualities of individual employees that have an effect on an organization's capability to reach its goals. These attributes can be for instance psychological, sociological or physical. The important commonality between them is that they are embedded into individual people. The attributes discussed that are related to individual employees do not include human qualities that do not affect an organization's capability to reach its goals.

Individuals are an important factor in organizations. They are the living energy behind lifeless organizational resources. They feel, think, organize, invent and make errors. They take chances and cause changes. They make things move or keep them in a state of stagnation (Saariluoma 1997, p. 14). Everything in organizations depends on their capability to produce (Nordström and Ridderstråle 1999).

A good, even extreme, example regarding the potential of human power is provided through the abilities and knowledge of LINUX people, who outperform all other for profit players but Microsoft in competing for the word-wide markets of computer operating systems. Several successful cases, like Pirelli Cables (Clark 1995) and a study about 25 North American hotels (Hays and Hill 2001) have shown that by focusing on the people it is possible to improve the results of the organization. The success of German fighter pilots on the eastern front during Operation Barbarossa, World War II 1941-1942, shows that the capabilities of individual people can make a difference (Franks 1999, p. 108). The way in which Nick Leeson, a 28-year-old banker, was single-handedly able to drive the traditional bank, Barrings, to bankruptcy shows that individuals may have an ultimate effect on an organization (Saariluoma 2002 pp. 138-139).

Some approaches to competence even define the competence to be a fully people-centered notion. Boyatzis (1982, p. 12) proposes that "certain characteristics or abilities of the person enable him or her to demonstrate the appropriate specific actions. These characteristics or abilities can be called competencies". Klemp (1980), and Spencer and Spencer (1993) defined competencies as "underlying characteristics of a person which result in effective and/or superior performance in the job". Also Roos et al. (1997) has defined that in the thought-frame of

intellectual capital the competence is an individual-based concept that consists of knowledge, skills, talents and the know-how of the employees.

Despite the people-centered thinking in these definitions the individual-based competencies are still considered in them in an organizational context. Muffato (1998) has shown that the key element in organizational competence management is the relationship between an organization and its individuals, since the latter acquire, learn and own the skills. The study of Eriksen and Mikkelsen (1996) on competitive advantage notes that the "core competencies" of individuals are always connected to the context of the organization. Even Boyatzis's (1982) model for effective performance contains three areas that should overlap in order to create effective performance: the job's demands, the individual's competencies and the organizational environment.

The central position of people in thinking about total organizational competence is evident. This focus seems to have grown in the last few decades (see, for instance Ahonen 2001). The increasing value of education and expertise is a consequence of moving from a labor-based to an information-based economy. Pope Paul John II summarized this part of the Zeitgeist in his 1991 Centesimus writings: "At one time the decisive factor of production was the land, and later capital. … Today the decisive factor is man himself, that is, his knowledge" (Stewart 1997). Whereas a century ago people could easily take any kind of work with five minutes schooling, today a decade of preparation may often be too short.

Collins (2001) has studied the requirements of companies to jump "from good to great". Collins' research is published in the format of a "business management best seller", but it is based on valid scientific research, and can thus be claimed to be scientifically trustworthy. The selection mechanism of a successful company was that the company had grown at least three times better than the stock market average over the period of 15 years, and was a member of Fortune's 500-list. Only 11 companies were able to pass the set test, and one of the 11 "great" companies in the USA over the last 30 years was Wells Fargo (Collins 2001). This case-example will show the importance of the right individual people in the context of the organizational competence.

Collins (2001) introduces Well Fargo as a case-example of a company that succeeded by putting emphasis on selecting the right people for the job. For a brief presentation about the background of the company, see table 1. Instead of creating a clear change strategy the company's chairman of the board, Ernie Arbuckle, concentrated on increasing the talent flow into the company. The idea was that since no one individual person was able to estimate the future changes, it was important to have a lot of talented and flexible people who would be able to live in the changing world. (Collins 2001). The development presented in table 1 shows that the focus on individual competent people supported Wells Fargo in competition against its contemporary rival, Bank of America.

This same mechanism took place in the other "great" companies as well. The companies trusted more in selecting capable individuals than creating ground-breaking strategies, and then selecting people to fulfill them. Collins actually states several times that "the people are not the most important resource of a company – the RIGHT people are the most important resource of a company". (Collins 2001).

TABLE 1   The background comparison of Wells Fargo and Bank of America

> Wells Fargo is a major US-based financial services company. Wells Fargo has over 23 million customer households, 139000 employees (or "team members"), and its market value was 86 billion USD in 2003. Overall peer rankings put Wells Fargo in third place in the assets and in fourth place in the market value in the USA in June 30th 2003. (Wells Fargo 2003).
>
> Collins compares Wells Fargo to a rival, Bank of America. The companies competed in the same market, but as a dollar invested in Bank of America in 1973 was worth 15,6 USD in 1998, a dollar invested in Wells Fargo over the same period of time was worth 74,47 USD. (Collins 2001).

Collins's research (2001) contains very strong evidence that individual people are a major factor as a competence creator in a company. According to his research, selecting the right people has a bigger effect on a company's success than developing an innovative strategy. From the point of view of organizational competence it can be taken as granted based on this study that individual people have an effect on overall organizational competence.

Strategic human resource management naturally stresses the importance of people as the main attribute of organizational competence creation. The history of SHRM is in the development of work force and task requirements towards knowledge intensive and customer-driven jobs (Wickens 1987). Employees had begun to be seen as an important strategic asset (Clark 1995). The traditional term "personnel management" was replaced with the term "Strategic Human Resource Management" to stress the importance of human resources, and their quality as a strategic asset (Legge 1989).

Individuals in organizations have numerous properties that have explanatory value in assessing their roles in organizations and organizational competence. If one does not have a good picture of how these factors are distributed among personnel, one's assessment of organizational competence is necessarily superficial. Put simply: if one does not know what personnel are capable of, it is very difficult to know what the organization can produce. Moreover, the development of an organization's competence is actually random when no accurate information about the demands of tasks and the resources of individuals has been generated.

There are several lists defining the competence attributes related to individuals (see, for instance, Boyatzis 1982, Gardner 1993, Handy 1999, Spencer and Spencer 1993, Their 1994). These studies, especially the one by Spencer and Spencer (1993) concentrate on defining individual skills and knowledge requirements of individuals on a job role -basis. However, from the psychological point of view the skills are only one, though important, attribute of individual people (see, for instance, Their's (1994) more holistic list). Thus wider concepts

than an individual's task-related skills will be studied here as competence attributes.

The reason for the selection of each attribute will be shown as the attribute is discussed. However, as the reader will notice, they are mainly psychological attributes. It could be asked, are they also the most important ones in the context of organizational competence? It will not be shown that they would be the most important ones. However, it will be shown that each one is an attribute of organizational competence, due to its truth and meaningfulness. The used research method does not require us to show the order of importance of the attributes, and as will later be shown, as the dynamism of the concept will be discussed, the importance of any attribute is situation-specific. Analyzing the attributes presented here shall shed sufficient light on the conceptual dimension emerging from individuals to the notion and assessment of total organizational competence.

3.1.1 Creativity

Creativity refers to the human ability to produce relevant, new and previously unknown ideas (e.g. Johnson-Laird 1988, Sternberg 1988). Of course, the word relevant infers that ideas cannot be absurd. It is a new idea that rives flow to Sirius, but there are not too many contexts in which it is relevant and makes sense (Weisberg 1993). In the context of the organizational competence creativity only refers to individual employees' creativity supporting an organization's capability of reaching its goals and not to the creativity shown only in tasks outside the organization.

Creativity is a human attribute that has been studied mainly in cognitive and individual psychological literature. For a detailed discussion about creativity see Carlson et al. (2000) or Sternberg (1988). The creativity of the individuals may be unleashed by using creativity techniques, but it still depends on the capabilities of an individual person (Cook 1998). Creativity can take place in any organizational function, and is thus not only a domain specific attribute, as a study of accountants' creative capabilities has shown (Al-Beraidi and Rickards 2003).

Creativity is a competence attribute because there is a number of organizations in which success depends on innovativeness, and ways to find new solutions to new problems. Typical examples of these are consultant companies. (Engeström and Ilmarinen 2002). There are even views that creativity can be the main competitive advantage in some cases, such as when product and service innovations are the main competitive factor (Cook 1998). A questionnaire sent to the executives of Europe's fastest growing enterprises in 1997 revealed that these individuals considered creativity and innovation capabilities to be the key to entrepreneurial success (European Business Review 1998). Also Hewlett-Packard has claimed that a major part of their success is based on the creative teams in their product development (Management Development Review 1997). Cusumano and Selby (1996) showed that creativity was one of the key success factors of Microsoft in the early 1990's.

The presented examples and studies show that creativity of individuals has an effect on an organization's capability to reach its goals. Thus it is evident that creativity is an attribute of organizational competence.

3.1.2 Intelligence

Intelligence refers to the human capacity to solve problems not previously encountered. This is a general ability and is independent of the domain (Sternberg and Lubart 1999). Though the intelligence discussed here refers only to the intelligence needed in an organizational context, the domain-independence makes it difficult to differentiate organizational competence -specific intelligence from an individual's general intelligence.

Intelligence, like creativity, has been studied mainly in cognitive and individual psychological literature. Interestingly, people who are creative are not necessarily intelligent or vice versa. (e.g. Carlson et al. 2000). Thus they are not connected, and can be seen as individual attributes. Intelligence can be further divided into smaller sections. For instance Gardner (1993) has divided intelligence into seven relatively autonomous sub-concepts: linguistic, logical-mathematical, spatial, musical, body-kinesthetic, intrapersonal, and interpersonal. It could be argued that these seven types of intelligence could also be handled as individual competence attributes. However, for the purpose of this research it is enough to study if human intelligence has an effect on an organization's capability of reaching its goals.

There are definitely situations where a company with more intelligent individuals will succeed better than its rivals. The previously presented case of Wells Fargo (Collins 2001) is a typical example of the success provided by intelligent managers. Sternberg (in press) has claimed that intelligence is definitely needed for entrepreneurial success. The theories and practical examples found from the intellectual capital management approach define intellectual agility as one of the sources of intellectual capital (Roos et al. 1997, Skandia 1996, Sveiby 1997). In these approaches intellectual agility is a quality attached to individual people. According to them, the intellect of individual people is an attribute that creates intellectual capital for an organization, and thus it can also be defined as being an attribute of organizational competence. Also Handy (1999) has defined intelligence as being one of the key traits required from a manager. Interestingly he states that a manager should have an intellect "above average but not of genius level" (Handy 1999, p. 98).

The presented cases and approaches show that the level of intelligence of the employees has some effect on an organization's capability to reach its goals. Thus an individual's intelligence can be considered to be an attribute of organizational competence.

3.1.3 Knowledge and skills

Knowledge and skills refer to individual's task specific capabilities to accomplish the task successfully (Ericsson and Lehman 1996). Knowledge and skills refer here

only to organization-related tasks; an individual's expert knowledge in, for example, archery is not likely to generate any competence for a sales organization.

An individual's knowledge and skills are different from her intelligence and creativity, because they are domain specific (Ericsson and Delaney 1999, Ericsson and Lehman 1996). An intelligent manager is likely to have a much lower performance capacity with respect to New York street names and locations compared with an intellectually mediocre but very experienced local taxi driver (e.g. Kalakoski and Saariluoma 2001). Knowledge and skills are the basic requirement for the tasks. Even if the other aspects of the individual (creativity, intelligence, motivation, etc.) were in good place, if she cannot weld, she would be assessed as being totally incompetent as a welder. Thus an understanding of the task specific knowledge and skills of individuals and personnel as a whole is an important factor when assessing the competence of an organization.

Muffato (1998) has shown that individual employees are most important as a competence source in an organization since the latter acquire, learn and own the skills. Von Krogh and Roos (1996, p. 425) define that "competence simply means the intersection between a particular task and the knowledge (and skill) of the person or the team doing it". Barber (in press) has shown that project managers' skills in managing projects can explain differences between companies' success. Markman and Baron (2003) showed that the knowledge and skills of an individual will have an effect on the success of an entrepreneur. Wynstra et al. (2001) showed that one of the main reasons for underperformance of the automotive and electronic industries was the individuals' lack of knowledge and skills of how to involve the suppliers into the production process.

It should be noted here, that the presented discussion refers to knowledge and skills of individual employees. The term "knowledge" can also be defined as an organizational attribute. (Boreham and Lammont 2000, Burgelman 1990, Burgelman 1994, Ståhle and Grönroos 1999, Sveiby 1997). Knowledge as an organizational attribute shall be discussed later.

The presented studies show that the knowledge and the skills of individuals have effect on an organization's capability to reach its goals. Thus it is safe to define knowledge and skills embedded in individual employees as an attribute of organizational competence.

3.1.4 Emotions

An individual's emotions refer to her mood-patterns, what the individual feels like. Emotions are an important attribute of organizational competence because they define an individual's relation to the current environment and situation, and in the individual's motivation (Lazarus 1999, Power and Dalgleish 1997). We may notice that a person behaves arrogantly toward us, but our emotions direct us to interpret this negatively or neutrally. Emotions are also central in our motives and personality, although these have cognitive components.

Emotions make us commit to the goals that our cognitions express. Lofy (1998) has shown that the emotional level of an employee has an effect on the colleague's creativity and empowerment. This is why emotional properties such as

honesty or maturity are very important for an individual in navigating an organization and often also very important for the organizations themselves. For a thorough discussion of emotions and their connection to human behavior, see Eysenck and Keane (1990, pp. 469-483).

Fineman (1993a, 1993b) has discussed in detail emotions in an organizational context. He has argued that emotions are too often neglected today as a managerial subject (1993a), and (1993b) has demonstrated that the average working environments support the suppression of individual emotions. However, Fineman (1996, pp. 543-552) has shown that organizations are everything but rational and non-emotional environments, and thus emotions of individuals should be considered. Juuti (2001, pp. 146-154) has argued that emotions are an important managerial factor in today's postmodern organizational context. There is also scientific evidence about the importance of emotions in an organizational context. O'Roark (2002) has shown that emotions play a crucial role in the work success of consultants and executives. She states that emotions and emotional intelligence are important, because they are key motivational factors. Joseph and Greenberg (2001) have shown that by being able to resolve negative emotions, laid-off people were able to improve their success in re-entering employment, thus indicating that emotions were one determining factor for individual success. Baack et al. (1994) showed that one of the most important factors for keeping talented women from advancing to executive positions was their male colleagues' perception that they would be unable to manage their emotions under stress.

There are all too many examples of immature managers who have driven their organizations down for reasons that ultimately illustrate emotional deficiencies (for several examples, see Saariluoma 2002). Very few issues make it clearer that emotions are essential in assessing organizational competence than the examples regarding childish and immature personalities in management, who have subsequently mismanaged very large organizations. Look at, for instance, the boasting of Germany's Air Marshal Herman Göring in 1940 that it would take only four days to clear the English fighter force from southern England (Franks 1999, p. 85). The result was quite different, mainly due to great egos and clear managerial mistakes over the following summer, as the Luftwaffe held on to wishes instead of a critical analysis of the situation (Collier 1999).

The presented studies and illustrative cases show that emotions of individuals have effect on an organization's capability to reach its goals. Thus it can be defined that individuals' emotions are an attribute of organizational competence.

3.1.5 Motivation

An ndividual's motivation refers in the context of organizational competence to her internal voluntary willingness to accomplish the tasks that create competence for an organization (Handy 1999). Even though the individual may be motivated to accomplish some tasks in her free time, it would not create competence for the organization; thus the focus only on individual's motivation in organizational context.

Skills, knowledge and creativity etc. are useless, if the person possessing them is not motivated to use them. Motivation itself does not solve tasks requiring complex skills, but it helps to profit from the other individual attributes. Handy (1999) has divided an individual's contribution to organizational effectiveness into personal abilities and motivation, which shows the importance of the concept in his thinking. Herzberg (1966) has defined that work situations contain dissatisfying, or hygiene, factors, as well as satisfying, or motivating, factors. McClelland (1961) has presented the needs that drive an individual's work accomplishment. McClelland's needs are the need for affiliation, the need for power and the need for achievement.

Several studies show the importance of motivation in an organizational context (e.g. Argote 1999, Borman et al. 1997, Covington 2000, Maehr and Meyer 1997). Etzioni (1964) proposed that the most satisfying organization for employees would be the most efficient one. The intellectual capital management approach considers attitude as one of the qualities of an individual in developing the intellectual capital of an organization (Roos et al. 1997). Stewart jr. et al. (1999) have proved that the motivation of the owner/manager correlates positively with the success of a small business. Miner (1990) showed that the motivation of individual people has a major effect on organizational success.

Based on the presented evidence it is safe to state that motivation of the individual employees' has an effect on an organization's success, and thus it is safe to define that is an attribute of organizational competence.

3.1.6 Commitment

An individual's commitment refers to how strongly she is willingly bonded into an organization and its goals (e.g. Handy 1999). Commitment is closely related to motivation – improving one will have an effect on the other, as was the case of the British Gas employee suggestion scheme, as presented by Lloyd (1996). Commitment is not, however, the same thing as motivation. A person may be highly motivated to accomplish a task, but if given another task, maybe in another organization, she may change her motivation to this new task. In this example commitment has been low despite high motivation.

Commitment may support an organization in reaching its goals, and *vice versa*. Smith (2003) has shown, that the success of an organizational change project correlates with several commitment related factors, such as sponsorship and stakeholder management. Kuvaas (2003) and Nijhof et al. (1998) have shown that the commitment of employees supports a company's financial success. Handy (1999, p. 145) has presented how the consultants' identificative commitment will affect the quality of their work.

The merger process of Stora and Enso is a good example of the managerial commitment that is a prerequisite of a successful change process. For a brief presentation about the merger process, see table 2. In the beginning, the job of cultural fusion seemed hard. According to the current CEO of Stora Enso Oyj, Mr. Jukka Härmälä, "the Swedes have traditionally thought that Finns are incompetent, and vice versa" (Niskanen 2000, p. 55). The oldest company in the

world, Stora (established 1288) (Stora Enso 2003b), considered Finnish Enso as a "commoner". The fact that the head office of the new company was located into Finland and a Finn was nominated as the CEO did not help the initial fears.

TABLE 2   The successful merger process of Stora and Enso

Two forest giants, Finnish Enso and Swedish Stora merged in 1998 to create StoraEnso. Neither the companies nor the countries shared a working culture (Lewis 1996, Niskanen 2000a). According to the current CEO of Stora Enso Oyj, Mr. Jukka Härmälä, the job of cultural fusion seemed hard.

The merger was considered to be successfully completed during the year 2000 (Stora Enso 2001). The financial value of merger synergies in 1999 and 2000 was calculated to be 353 M€ (Stora Enso 2001). The share price in of 6,31 € on the 16th of December 1998 had almost doubled by 15th of August 2003 to 11,27 € (Stora Enso 2003a).

However, the CEO Härmälä pushed through the new vision, mission and values. The other executives were also strongly committed to the process, and used a considerable amount of time in communicating the shared principles throughout the organization. "The absolute requirement of success is that the highest executives communicate to different audiences in the same terms" (p. 56), Härmälä states. (Niskanen 2000).

The facts in table 2 support the understanding that the merger process can be considered to have been successful. When combined with CEO Härmälä's statements, the case illustrates management's commitment to have been one of the key competence creating attributes during this merger process.

The presented illustrative case and the studies show that the employees' commitment has an effect on an organization's capability to reach its goals. Thus commitment is an attribute of organizational competence.

3.1.7   Communication capabilities

Communication capabilities refer to an individual's ability to express herself to the other people. The communication capabilities refer in the context of organizational competence to those required at work; an individual may be communicative and clear in domestic situations, but if she is unable to communicate at the level required at work, she does not increase the organization's competence.

Social and communicative capabilities are of the first importance in adapting to an organization. A person who cannot communicate can hardly be effective in collaborative tasks in organizations (Handy 1999, Their 1994). Regardless, it may be that she still finds a good role in an organization, because all tasks do not presuppose communication. On the other hand, very good persuasive and communicative capacities can turn out a nightmare when they result in negative outcomes due to, for example, missing substance skills. Millions can be lost in a very short period of time. Individual social capacities are thus a multi-edged,

complex problem in evaluating the competence-roles of individuals in organizations.

Nevertheless, it is possible to show that an individual's capability to communicate is an attribute of organizational competence. If we think of two organizations competing in the personal sales business, which one is more likely to succeed: the one with people who are good in communicating or the one with bad communicators? Ritter and Gemünden (2003) showed that communication capabilities were one of the key success factors in network organizations. Lurey and Raisinghani (2001) argued that communication patterns were of major importance in making virtual teams function well, and Moenaert et al. (2000) showed the importance of communication as a source of innovation in product development. Bennis and Nanus (1985) defined communication as one of the four most important leadership skills based on extensive interview-based research. The theories of knowledge management and organizational learning take as a basis that people should have adequate communicative capabilities. Without these, individuals are not able to share knowledge, and the organization is unable to learn. (see, for instance, Argyris and Schön 1995, Nonaka and Takeuchi 1995, Pedler et al. 1991, Pedler and Burgoyne 1994, Senge 1990).

The presented studies and argumentation show that the communication of individuals affects on organizations' capabilities to reach their goals. Thus it can be defined that an individual's communication capabilities are an attribute of organizational competence.

3.1.8   The mix of attributes in an individual

The requirements for individuals from the point of view of organizational competence are often multi-faceted. For example, it is not enough to have people with good skills if they have no motivation. Social capabilities may prove to be inadequate to create competence if creativity is missing. And if an employee has a lot of motivation and very little skill, a lot of damage can be done in small time (see, for instance, Saariluoma (2002) for discussion about Nick Leeson's effect on Barrings). Hendry (1999) has pointed out that there are frequent references concerning how difficult it is to find people with the right generic skills and competencies and the right attitude.

It could be asked whether an individual's attributes are really competence attributes. Is it possible that an individual person may have an effect on the competence of the whole organization, and if so, are some individual attributes in this individual meaningful in an organizational context? The first one of these concerns can be falsified by the amount of presented studies and cases where individual's have had an effect on an organization. Also, a more foundational thought-experiment can be made: since an organization is not defined as an organization of some size, say, an organization consisting at least of 100 people, a small group of people form an organization as well. Since an organization was defined to be social units constructed by people that are held together by a shared representation system (Kamppinen and Ruohonen 2001) in order to reach definite goals (Etzioni 1964, Parsons 1960), a group of two people can be called an

organization as well. If we think of a two-person organization, can we say that organizational competence does not, to some degree, depend on the competence of either both or one of these members of the organization? Thus it is safe to state that an organization's competence may depend on the impact of individual people, and thus individual people form an attribute of organizational competence.

The answer to the second concern can then be found as well. Since an individual person may have an effect on organizational competence, are there some sub-attributes in individual people that may have an effect on their performance? The presented sub-attributes of individuals have shown that there are definitely attributes that may have an effect on an individual's overall performance, and thus on her effect on organizational performance, and thus on organizational competence.

Individuality offers a very interesting and important component in assessing the competence of organizations. A key issue is the fit between the individual and the task (Handy 1999). The more crucial a person's functional role is for the organization, the more important it is to have an accurate picture of all of her true individual properties.

3.2   Attributes related to an organization's structure

Organizational structure is a concept referring to the way people share, implement and co-ordinate their actions (Mintzberg 1979, 1983). Handy (1999) has stated that the structure defines the organization. Roos et al. (1997) have shown that structural capital creates a large amount of an organization's intellectual capital. Metcalfe and James (2000) emphasize the importance of firms as entities transforming individuals' knowledge and skills into collective capabilities. Based on these and other similar researches it would be unjust to define individual people with their different skills, motivation and other capabilities as only one attribute of organizational competence. This is why structural factors also have a vital position in analyzing the competence of organizations.

Structure is comprised of a very large number of attributes. Typical examples are management and power, atmosphere, knowledge and information systems, delegating, roles, departmentalization and sectioning, the mechanisms of control and conflict resolution as well as the guidance of learning and change (Handy 1999). Handy (1999) also discusses in detail a culture's effect on an organization's structure, even though it is not included in the list. Roos et al. (1997) divides structural capital into customer capital and organizational capital, and the latter is again divided into process capital and innovation capital, which is again divided into intellectual property and intangible assets. Nonaka and Takeuchi (1998) state that organizations can manage their knowledge in mental, virtual and physical spaces: "ba"s.

A set of structure-related attributes is collected from these lists, and studied in the following discussion. The reason for the selection of each attribute will be shown as the attribute is discussed. It could be asked whether they are the most

important ones in the context of organizational competence. As was the case with the attributes of individual employees, it will not be shown that they would be the most important ones. However, it will be shown that each one is an attribute of organizational competence, due to its truth and meaningfulness. Analyzing the attributes presented here shall shed sufficient light on the conceptual dimension emerging from the organizational structure to the notion and assessment of total organizational competence.

3.2.1 The roles of employees

Employees are attached to organizations in different roles (Handy 1999). These roles have an effect on the requirements for the person holding them, and thus they affect the attributes of organizational competence. For instance, a person who might be a very valuable employee in sales and marketing could become an underperformer in an R&D-role, since her individual competence attributes could be wrong for the role.

There are several division mechanisms regarding the roles of people in organizations (see, for instance, Handy 1999, Lehtinen 1998, Seppälä in press). Lehtinen (1998) divides personnel in his stakeholder-approach as operative personnel, administrative personnel, managers and experts. From the point of view of the contents of the concept of organizational competence this classification is quite adequate. For the purpose of understanding the contents of the concept of organizational competence it is even enough to concentrate on two roles: experts and managers. Both of these roles can be found in several organizations and organizational functions.

3.2.1.1 Experts

Ericsson and Lehmann (1996) have defined expertise as the ability to accomplish a task better than a more novice person, i.e., to show superior situation-related competence. In the context of the organizational roles as an attribute of organizational competence this refers to the relative amount and the usability of these roles in an organization, i.e., is there a correct number of expert people in expert roles to succeed in the tasks.

Voss et al. (1983) showed that expertness is domain specific, i.e., an expert in one domain is often unable to use his special skills and strategies in other domains. Thus it can be understood that having one type of expert in an organization requiring a different type of expertise will not automatically increase organizational competence. Mitchell (1996) has shown that experts are more likely to succeed as entrepreneurs than non-experts, i.e., that the availability of expertness in the firm increases its capability to reach its goals. Pickett (2000) has shown that experts of internal auditing are more reliable and competent than more novice auditors, which proves that having the right type of expert-people per the expert-roles will affect the capability of an organization to succeed. Porter (2000) has shown how to support small businesses to succeed better by transferring some expert knowledge into their use.

The presented studies and discussion show that experts in the expert's roles available to an organization may have an effect on the organization's capability to reach its goals. Thus it can be defined that the role of experts is an attribute of organizational competence.

3.2.1.2 Managers

A common denominator in organizations is people taking care of the managerial responsibilities (Handy 1999, Juuti 2001). There are several types on management practices from authoritative to shared, but in any case there are managerial tasks that someone must do (e.g. Ahonen 2001, Juuti 2001). Managers can be both fully employed by the organization or participating owners (Lehtinen 1998). The participating owners can be defined as managers in the framework of organizational competence, because they guide the organization's strategy, vision and mission (Saarnio et al. 2000).

Managers' skills, which must be separated from management practices, provide a good example of the nature of multidimensional skills. A Center for Creative Leadership (CCL) –study about global management, for example, revealed several required managerial capabilities. These were split into two areas: *essential management capabilities* (the ability to manage people, action, and information; the ability to cope with pressure; and core business knowledge), and *pivotal capabilities* (international business knowledge; cultural adaptability; perspective-taking; ability to play the role of the innovator) (Dalton et al. 2002). There are many respective lists (e.g. Boyatzis 1982, Handy 1999, Their 1994), but they all illustrate that managers' expertise and skills are multidimensional.

Handy (1999) has stated that a manager should have four abilities: (i) average intelligence, but not the genius level; (ii) initiative, or independence and inventiveness; (iii) self-assurance, or high self-ratings on competence and aspiration levels; and (iv) helicopter-factor, the ability to rise above the particulars of a situation and perceive it in its relation to the overall environment. Ritter et al. (1998) proved that the capabilities of individual managers affected the performance of manufacturing companies. Havaleschka (1999) proved that the personality of executives affected the performance of their companies. Cames et al. (2001) showed that gender is considered to affect a manager's capabilities to succeed, and that some managers are considered to be more capable than the others.

The case of Lee Iacocca (presented in table 3) shows what a tremendous effect one individual may have on organizational competence. Both the positive and the negative effects he created at Chrysler were formidable. The former Ford executive was able to save Chrysler from bankruptcy by his extraordinary managerial talent; he made all the right moves at the right time. (Iacocca and Novak 1984). Similarly, as his interest moved in other directions it became evident that he had been the one person keeping the giant on its feet. The results of his second period at the helm of Chrysler as presented in table 3 were simply bad (Collins 2001).

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TABLE 3   Lee Iacocca's rise and fall in the Chrysler Corporation

In 1978 Lee Iacocca took the helm of the sinking giant, the Chrysler Corporation (Iacocca and Novak 1984). Iacocca immediately used his massive managerial energy and talent (Collins 2001). By the mid-1980's the company's value had increased 2,9 times better than the average stock market value growth (Collins 2001). CEO Iacocca was considered as an international celebrity due to his managerial successes (e.g. Investor's Business Daily 1993, Wall Street Journal 1982).

Then Iacocca's interest moved in other directions. He shared his time as the executive of Chrysler Corporation with committee work in the congress of the United States, he started to write a column for a newspaper, spent a considerable share of his time in his Italian villa producing wine and olive oil, etc. (Wall Street Journal 1990). There were even suggestions that he would have been interested in running for the presidency of the USA (Collins 2001, p. 55).

The result of moving Iacocca's interest to other areas instead of managing Chrysler became evident. The second time period of Iacocca's CEO-era saw the corporation's value performing 31% worse than the average stock market valuation (Collins 2001). After Iacocca's time the corporation fell back to the verge of bankruptcy (Lutz 1998), and was finally merged with the German Daimler-Benz.

The case of Lee Iacocca shows us what an enormous effect one person in a managerial role may have. Despite this case was extreme in several ways, such as the impact, the success, and the organization's size, it shows that a manager may have an effect on organizational competence.

The presented illustrative case and the large amount of available studies prove that managers have an effect on organizations' capability to reach their goals. Thus it is evident that managers can be considered an attribute of organizational competence.

3.2.2   The guiding principles of an organization

The guiding principles of an organization, whether they are called vision, or mission, or values, or strategies, or something else, do show an organization the direction it advances in and the ways by which it should advance. Mintzberg (1987) has stated that there are five "P"s that the strategy can be connected to: plan, ploy, pattern, position and perspective. Mintzberg's approach can contain all the guiding principles, for example vision, mission, defined values and strategies (Mintzberg et al. 1998).

A strong, clearly defined and communicated vision and/or mission statement and as well managed strategies can give personnel a solid ground on which to base their decisions when a problem occurs (Hamel 2000, Mintzberg et al.

1998, Nonaka and Takeuchi 1995, Porter 1980, 1985). The principles guide the personnel in the same direction, thus supporting the similarities between decisions made by different people (Cinquegrani 2002, Lynn and Akgün 2001). If the vision is clear and similarly understood by several individual people it could be argued that they are likely to answer to the same request with a relatively similar output when compared to a group of people that do not share the same vision (Buckler and Zien 1996). Kirjavainen and Laakso-Manninen (2000) begin their list of key requirements for the strategic management of competencies by a clear vision of an organization. The reason for this was that if the vision of the future is not clear an organization will only develop its current competencies, not the ones required in the future. Nonaka and Takeuchi (1995) have proposed that in order for the organization to learn effectively the top management should be able to create and communicate a clear vision. Mintzberg et al. (1998) also stress the importance of strategy in general management, similar to for instance Hamel (2000), Pascale and Athos (1982), Peters and Waterman (1982), and Porter (1980). The latest very solid evidence about the importance of guiding principles can be found from Joyce et al. (2003), where they studied extensively corporations' formulae for success. The strategy was defined as one of the four primary areas that companies had to concentrate on in order to pass as a "winner".

The theory of organizational core competencies (Hamel and Prahalad 1994) stresses the importance of a strategy for an organization. Hamel (1998) has stated that defining the strategy should take 90% of the management time and implementing it 10%. The core competences are tools that are used for creating a new and innovative strategy for an organization. This theory relies heavily on basing the strategy and future of an organization on the core competencies it already possesses. There are several excellent examples where a company has been able to add new business areas into its services, or change its course altogether by basing its strategy on the core competence -analysis. Branson's Virgin Atlantic and Motorola are often presented showcases on core competence analysis. (Hamel and Prahalad 1994, Hamel 2000). Still, Collins's research (2001) seems to claim the opposite: first the right people, then the strategy.

The case of the merger between Stora and Enso has already been presented when discussing managerial commitment. This case represented a typical example of a successful management via common guiding principles. The management styles were harmonized (Niskanen 2000, p. 56). New, common vision, mission and values were built in the new company. Several working groups were used, and large masses of people attended the process. Still, the process had initial problems, because "though the terminology was the same, it was understood differently" (p. 56). However, in the end the process was considered successful. (Niskanen 2000).

The presented discussion shows that the guiding principles have a major effect on an organization's capability to reach its goal. These guiding principles can thus be defined as attributes of organizational competence.

3.2.3   Defined organizational processes

Defined organizational processes are a defined and structured way to do repetitive tasks. Organizational processes consist of a line of single actions that are taken in an organization in the same procedure repeatedly. (Hannus 1995).

There are several studies showing the importance of defined organizational processes as the means of creating, gathering and sharing organizational competence (see, for instance, Anttila and Vakkuri 1997, Handy 1999, Hannus 1995, Levitt and March 1988, Mintzberg et al. 1998, Roos et al. 1997, Teece et al. 1997, Walsh and Ungson 1991, Zott 2003). Muffato (1998) notes that organizational competencies concern specifically organizational processes, which affect the management of relationships and information flows between personnel.

Organizational processes can either be clearly documented or just exist as working practices – in which case they are a part of the organizational culture. In the case of clearly defined and documented processes an organization can use the same methods and tools in different parts of the world or it can quickly transfer some personnel if needed (Argote 1999). Lee and Lim (2003) have shown that a key success factor in electronic data interchange (EDI)–projects between organizations is that both parties have defined their business processes. Sarkis and Sundarraj (2003) have shown by using Texas Instruments as a case-example that large multi-national companies should standardize their internal processes to increase the efficiency of their resource planning systems.

One of the best-known cases of process management organizations and the positive effect process development can have on the organizational competence is the past development of the Xerox Corporation. It demonstrates that defined processes have an effect on organizational competence. For a brief company presentation and a list of the successful process development cases at the Xerox Corporation see table 4.

Even though not all of the changes have been successful, and Xerox is notorious for inventing new products and letting competitors get the gains (see Hannus 1995, p. 119), the major portion of the changes have been successful. The cases presented in table 5 and other similar process development cases (for instance: central logistics and asset management, common product development, logistics (Hannus 1995)) improved Xerox's business success through-out the 1980's.

TABLE 4   Some examples of the successful process development projects and their results in Xerox-corporation.

> Xerox is a global company offering an array of innovative document solutions, services and systems. The company's revenues in 2002 were 15,8 billion USD, and it had 67800 employees world-wide. Xerox Corporation has won several awards for process development and quality over the last 30 years. (Xerox 2003).
>
> The changes at Xerox have been studied in several academic research projects (see, for instance, Howard 1996, Kearns and Nadler 1992, Walker 1992). Hannus (1995, pp. 117-119) has collected the results of these studies together.
>
> * In 1982 Xerox restructured the global vendor processes. As the result the share of administrative costs per purchase dropped from 9% to 3%.
>
> * Its "Leadership Through Quality" –program won the Malcolm Baldrige Quality Award in 1989 and the European Quality Award in 1992.
>
> * Xerox was able to save "millions of dollars" in the mid-1980's. The basis of this development was the renewal of global core processes of new product development.
>
> * An additional 10 million annual dollars was saved by a project in 1988. The project improved the global operative business core processes. (Hannus 1995, p. 118)

The common denominator in the successful projects presented in table 4 was the focus on developing global processes. It should be noted that the mentioned studies have been scientific in their approach, and thus their evidence can be thought more trustworthy than the more consultative publications.

From the point of view of organizational competence, the Xerox-case shows the importance of defined business processes as a competence factor. Without the focus on the processes the presented changes would not have taken place. The development of processes naturally required both financing and brain power, but the development of business came in the end via the global processes.

Based on the presented studies and the case-example it is safe to say that defined organizational processes have an effect on an organization's capability to reach its goals, and thus they are an attribute of organizational competence.

3.2.4   Organizational culture

Organizational culture refers in the context of organizational competence to an organization's psycho-social habits and traditional working practices, which define the way in which the organization reacts "instinctively" (Saariluoma 2002 p. 141). Handy (1999, p. 192) defines that the principal factors influencing

organizational culture are history and ownership, size, technology, goals and objectives, environment and people.

Schein (1985) has presented several cases where organizational culture does have an effect on an organization's capability to reach its goals. Thus culture is definitely an attribute of organizational competence. Culture plays such a crucial organizational role that Hofrichter (1999) has claimed that culture is actually the major differentiator between the companies cited in the Fortune 500-list, and the ones outside the list. Smith (2003) has shown that the failure of an organizational change process correlates strongly with the clash with the existing culture of the organization. Chu (2003) showed that the organizational culture has a major effect on the SME-enterprises success in Hong Kong. Joyce et al. (2003) showed that following the best practices in managing corporate culture is one of the four key areas that enable companies to become winners. Not focusing on culture did seriously harm the organizations' capabilities to succeed (Joyce et al. 2003).

Several organizations have been able to change the rules of the competition by focusing on their company culture and value sets (Hamel, 1998). Charles Schwab has stated that the values of his organizations are more important their actual businesses, and that the values can be moved to several different business areas (Hamel 1998). Richard Branson has shown the same attitude in developing the Virgin-corporation from one business branch to another, and another. Hofrichter (1999) has stated "effective performance measurement starts by setting goals that reflect what is truly important to the organization. Truly important does not mean what is stated in to be important or even what the corporate strategy calls for. It means what the culture, in a myriad of ways in which it influences individual employee behavior every day, says is important. There is no room for conflict in this area. Culture always wins". A number of unsuccessful firm fusions, mergers and acquisitions can be explained by the lack of focus on organizational culture (Childress and Senn 1999, Schein 1985).

The case of Mashantucket Pequot's casino business, as presented in table 5, shows the strength of cultural traits as a generator of organizational competence. A cultural entrepreneurial trait developed a small Indian tribe into one of the biggest players in the global casino industry. The Pequot-case has been studied academically over the years (e.g. d'Hauteserre 2000, Harler 1996, Hauptman and Wherry 1990) not to mention dozens of newspaper and magazine articles. How has a poor and small tribe been able to develop such a successful business, and succeed better in competitive environment than another similar case, the Harrah's casino, presented also in table 5? What have been the required capabilities to reach the goal?

There are other possible reasons presented, but d'Hauteserre (2000) concludes that the entrepreneurial culture and fully committed management have been the most important reason of success. This attitude has provided the Pequot-tribe with a success in several risky actions taken in the casino business. Some other tribes could have taken – and tried to take - the same actions, but their lack of commitment and entrepreneurial culture made them lose the opportunity. The commitment the tribe showed was not only commitment of individual people; the whole tribe committed itself. It was thus a cultural trait that led to success.

(d'Hauteserre 2000). This case shows that organizational culture has had an effect on an organization's success.

TABLE 5   The success story of the Mashantucket Pequot in casino business.

> In the 1970's the small Mashantucket Pequot Indian tribe living in a reservation in Connecticut opened a bingo parlor in 1986 (Wherry 1990). In 1992 the business evolved into a casino which quickly grew to the largest casino in the world in 1997. (d'Hauteserre 2000). By 1995 the casino had already reached a profit of 319 million USD (Rudnitsky 1996).
> Simultaneously, another casino was opened in New Orleans. The Harrah's casino went only in a few years operating time from the biggest casino in the world into bankruptcy (Jinker-Lloyd 1996), though the business situation was fairly similar to that in the Connecticut – both operated in competitive environment with several competitors within the driving distance (d'Hauteserre 2000).

Culture plays a key role in organizational competence, giving some organizations a clear competitive edge over their competitors, while it is very difficult to pinpoint the individual factors creating the advantage (Hofrichter 1999, Schein 1985). However, there are some sub-attributes that have a clear effect on culture. The share of their effect changes from organization to organization, and some others may also affect the culture of individual organizations. The attributes that will be discussed closer here are organizational values, atmosphere and working practices. For a wider discussion about the possible attributes of organizational culture see, for example, Schein (1985).

Before going into exemplary cultural factors in detail it should be noted that culture is not homogenous within an organization. Handy (1999, p. 182) notes, that "even within organizations cultures will differ. The R and D laboratory in the fields of the countryside will have a different atmosphere to the director's floor in the central office. The invoicing department would not be mistaken for the market research department, or the factory for the sales division". This diversity provides an additional problem when studying the cultural-factor of structural competence within an organization: It is one sub-factor of an organizational culture whether or not it supports a homogenous culture, and whether a homogenous or a heterogeneous culture is favored in a particular case. In some cases a homogenous culture within a large organization would be positive, and in others it could interfere with the task oriented requirements of individual departments.

3.2.4.1   The values of an organization

The values of an organization refer to the often undefined, and maybe even unconscious, value sets by which an organization operates. The actual values do

not have to be the same as the defined values, which have already been discussed as the "guiding principles".

Values play a major part in the culture of the organization. Teece et al. (1997) called the actual values as the "*de facto* governance system". Important factors effecting these values and beliefs that employees hold are history, ownership, size, technology, goals and the environment (Handy, 1999).

There are several studies that indicate the importance of organizational values. For instance, Burke (2001) has shown that an organization's value system guides the actions of the individuals – an organization that supports workaholism creates workaholics. Hunt and At-Twaijri (1996) studied the values of Saudi managers versus the values of the organizations in which they worked, and saw that there was a clear match. De Chernatony and Segal-Horn (2003, p. 1095) showed that in order to succeed in service industries corporations needed to "ruthlessly clarify the … organization's genuinely felt values".

It should be noted that the actual values may differ from the ones the organization may present as its values. Several organizations (see, for example: Nokia, GM, Microsoft) state their official values. In reality within an organization it may not always be the case that all the individuals share these values in their actions, even though they would share them in speech (Kirjavainen and Laakso-Manninen 2000 pp. 200-205). Kirjavainen and Laakso-Manninen (2000, p. 202) state that the values given from the top do not create enthusiasm in the employees. Thus the actual value system of an organization is far more complex than the organization's value statement (Hofstede 1997), which sometimes may even be misleading. If an organizational defined value is, for example, openness, but when facing a financially challenging situation the decision about restructuring is made in a small inner-circle, what has been the actual value that the action has been decided by? The difference between actual values and presented values would be an interesting area of future studies.

Based on the presented studies it is safe to claim that an organization's actual values have an effect on the organization's capability to reach its goals. Thus actual values are an attribute of organizational competence.

3.2.4.2 Organizational atmosphere

Atmosphere is an attribute affecting organizational culture. Atmosphere refers to the tacit mood shared in an organization; difficult to define, but easy to experience. The organizational atmosphere can be innovative, positive, entrepreneurial, bureaucratic, positive, negative, etc. Its importance to organizational culture can be seen in the constant high rank of atmosphere in all investigations into the factors in organizational life, which are evaluated by personnel to be important (e.g. Handy 1999, Saariluoma 2002, Starbuck 1992).

Organizational atmosphere can have a major influence on employees' ability to work, as Fagin and Carson (1996) showed in the case of hospital staff. Miller (2003) argued that the recent developments in the areas of terrorism and corporate frauds in the USA have created an atmosphere that creates too much anxiety to work properly for many people. Hovmark and Nordqvist (1996) presented a case-

study where a change in working methods had influenced working atmosphere positively, allowing results to improve.

Interestingly, the amount of scientific data about organizational atmosphere and its consequences is fairly limited in the managerial sciences. It is referred to as an important subject, but has not been extensively studied. Searches through scientific databases, such as Elsevier and Emerald, reveal that a very small number of articles that discuss the topic. One reason for this may be that the atmosphere is very difficult to describe explicitly. However, it is most likely that the reader has tacit experiences about organizations with good or bad atmosphere, and the differences between those organizations. It could be argued that a positive atmosphere could create a stronger platform for continuous development of the organization, as individuals are more able to interact with each other and the power structure of the organization (see the discussion on the learning organizations, for instance Pedler et al. 1991, Senge 1990). In any case, organizational atmosphere should be studied much closer, in order to find out the relevant attributes and drives, not only to refer to it as "critically important".

The presented studies support the idea that organizational atmosphere does indeed affect on the organization's capability to reach its goals. Due to this and the numerous referrals to this attribute the atmosphere may be an attribute of organizational competence. Additional research and evidence is still needed on the subject.

3.2.4.3 Working practices

The actual working practices and non-defined processes of an organization form a big part of the culture-factor of structural competence (Aalst et al. in press, Molenaar et al. 2002). Often the people have learned to by-pass some defined processes or in the need of them, defined their own ways of dealing with their tasks (Molenaar et al. 2002); these ways of "short-circuiting" the defined organizational processes are referred to as the actual working practices.

The interaction processes within and outside the organization play a major role in the total organizational competence. These processes are typically difficult to describe explicitly due to their constant dynamics. The people change, the level of trust between people changes, the interaction methods change, and the random acts affect the interaction. It is also evident that not everything is done in an organization "by-the-book". Sometimes the defined processes may be seen being so rigid that individuals do not want to obey them. This set of undefined processes builds the practical processes of an organization. (Chikán 2001).

This area should be studied more deeply, just as the effects of organizational atmosphere. Still, it can be argued that the undefined processes do have an effect on the organization's capability to reach its goals, and may thus be attributes of organizational competence. Additional research should be carried out on this attribute-candidate and its truth.

3.2.5   Organizational knowledge

Organizational knowledge refers to the defined and tacit data and knowledge shared in an organization. Organizational knowledge does not refer to the knowledge embedded in individual employees; that area has already been discussed. If the knowledge is only maintained by an individual employee it is not an organizational attribute except via the individual.

Knowledge has become one of the key managerial subjects due to developments in working life (Ståhle and Grönroos 1999, Sveiby 1997, Sveiby and Risling 1986). Businesses draw a major share of their competitive advantage from knowledge (Boreham and Lammont 2000, Burgelman 1990, Burgelman 1994, Sveiby 1997). These approaches consider knowledge as a quality of an organization, not only as something possessed by individual people. Levitt and March (1988) have argued that organizational knowledge is embedded in an organization's routines and standard operating procedures, products and processes, technologies and equipment, layout and structure, and culture and norms.

Organizations must be able to maintain knowledge through personnel changes and they must be able to forget out-dated knowledge so that it does not affect decision-making (Argote 1999, Lähteenmäki et al. 2001, Prahalad 1998). The European Rosetta space mission is a good example of a process of maintaining organizational knowledge over long period of time. Galarreta (1997) has been studying the mentioned project in which the organization must be able to maintain its knowledge despite a long planning period (30 years!) and complete change of personnel.

Organizational knowledge can be divided into tacit knowledge and explicit knowledge (Polanyi 1967). Winter (1987) studied the fact that a major share of organizational knowledge cannot be explicitly defined, and is thus tacit by nature. The effect of tacit organizational knowledge has been shown to have a greater effect on the organization than explicit knowledge (Hofrichter 1999, Sveiby 1996), but the preferred state is a symbiosis between the two (Choi and Heeseok 2003). There are also other similar divisions, collected by Chua (2002), and Matusik and Hill (1998). At least divisions of private-public, component-architectural, and individual-collective - knowledge division systems are used.

Nonaka and Takeuchi (1995) discussed knowledge creating companies as places where knowledge is not created in a separated working area, but where every employee is a knowledge worker. They have created a learning cycle that describes how knowledge is being created and transferred within an organization. The cycle is called the SECI-model, the abbreviation coming from the ways in which knowledge develops: Socialization – Externalization – Combination – Internalization. Knowledge moves in constant cycle from tacit to explicit, from individuals to groups, and vice versa. Idea of the SECI-cycle is that it can be used to actively manage knowledge creation and transformation. (Nonaka and Takeuchi 1995).

The Nonaka-Takeuchi knowledge management theory is carried further in the "ba"-theory (Nonaka and Konno 1998). The ba-theory presents an idea, that

there are some favorable places for knowledge creation. A favorable place does not only refer to the physical surroundings, but also to the virtual and mental environment, and thus the organizational structural attributes. According to Nonaka and Konno these favorable places can to some extent be defined for each part and transition of the SECI-model learning cycle (Nonaka and Takeuchi 1995, Sveiby 1996). Each of the four "ba"s (originating, interacting, cyber, and exercising) is described in detail by Nonaka and Konno (1998) and articles following the tradition they have presented (Kostiainen 2002, Nonaka et al. 2000).

It has been shown in the presented studies that organizational knowledge is one of the most important factors affecting an organization's capability to reach its goals. The previous discussion shows that organizational knowledge is an attribute of organizational competence.

3.2.6   Collective knowledge

If everybody in an organization shares a piece of knowledge, is it individual-based knowledge or organizational knowledge? Since one aspect of organizational knowledge is that it is embedded in an organization despite some personnel changes it could be said that individual knowledge shared by most of the personnel of an organization is collective knowledge (Spender 1996).

Winter (1987) calls this type of knowledge "social knowledge", and defines it as pieces of information that an organization shares or collective knowledge about how to accomplish a task. It is not relevant to measure knowledge like this individually for each person if it is evident that everybody or most of the personnel is at the required level. "Collective knowledge is therefore the knowledge held commonly by a group or organization members. … Collective knowledge is more secure and has more strategic significance than individual knowledge (Spender 1996). By comparison it is less volatile and less easily affected by staff turnover (Chua 2002).

For example, in several originally non-English -speaking global corporations the English skills are - due to a recruiting selection process - nowadays on the level that allows the company to use English as a basic communication language (St John 1996). The ability to use English is fully structural - even if 50% of the personnel left the company, the company could still keep on using English. Some other, more individual competence –based tasks would probably suffer if half of the personnel left an organization. There are several other similar skills that have been relevant to study carefully in some major change processes lately, but which are common structural knowledge nowadays. Use of basic office IT applications, for instance, has become in most organizations a fully structural competence area as the work methods have been developed towards virtual organizations (Larsen and McInerney 2002).

It is of course a good question whether collective knowledge can be a competence attribute at all – certainly it is not a core competence (Hamel and Prahalad 1994). It could be stated that this kind of knowledge does not give any competitive advantage, and thus cannot be defined as a competence. However, in a situation where one company has created some competence area in the area of

structural excellence by effective knowledge sharing and selection, and its competitor still is still based on a few experts in this area the competence could give competitive advantage. If we keep to the example of English skills: There are two competing companies whose strategy is to go global. First one can use all of their personnel in the global arena due to their language abilities, which they have accumulated in the company via selective recruiting process. The other one can only use a few people, because not all the required people can get their message across. Which one of the companies has a bigger potential to succeed?

Based on the presented studies and discussion it can be stated that collective knowledge has an effect on an organization's capability to reach its goals. Thus it can be stated that collective knowledge is an attribute of organizational competence.

3.2.7 Managerial practices

An organization's managerial practices refer to the defined and tacit ways used by employees in an organization to affect other people's actions (Greenberg and Baron 2000, Handy 1999, Mintzberg et al. 1998). It should be noted that this is a different attribute to the role of the managers. The former refers to the ways in which the organization should be managed and the latter refers to the capabilities required in different managerial roles. The managerial practices of an organization can be bad if compared to another organization, but nevertheless excellent people in managerial roles may be able to perform those roles nevertheless. Or *vice versa*: the managerial practices may be well-defined and should be competitive, but the wrong people in the managerial roles may destroy their competence (see, for instance, discussion on Nick Leeson's effect on Barrings' bank in Saariluoma 2002).

All of the presented theories that are related to organizational competence agree that managerial practices are a basis for organizational competence. Whether it is a case of managing knowledge, individual people, core competences, learning, human resources as a bigger entity or intellectual capital, the term "management" is a common denominator.

It is difficult to define exactly what is meant by term "knowledge management" – the amount of papers and approaches has increased steadily (e.g. Ahonen 2001, Juuti 2001). However, if analyzing the actual term knowledge management concentrates on conscious actions via which knowledge can be acted on, or to "systematize processes in which knowledge transforms and moves within organization" (Kirjavainen and Laakso-Manninen 2000, p. 37). Knowledge management is often referred to when describing product development processes, because by nature they are processes in which new knowledge is being created or old knowledge being transferred between people. Leonard-Barton (1992) discussed the capabilities required from the product development organizations. Ståhle (1998, Ståhle and Grönroos 1999) has shown that an organization must be able to move in the area of knowledge creating chaos in order to create new innovative ideas and products. Happonen (2001) has shown that managing the common and company-specific knowledge is essential in a product development process distributed between companies.

Kirjavainen and Laakso-Manninen (2000) defined that the management of organizational learning means developing the structures, processes and culture of the organization in order to create a system, which develops organizational competence continuously and in a self-directing manner. Thus the goal of the individual actions is not that much to develop the organization's individual capabilities but to develop the organization as a whole.

Ghoshal and Bartlett define the traditional relationship between the organization and the employees as exploitative, and that the goal of the Strategic Human Resource Management is to make the employees generally more employable – thus putting pressure on the employer, since it has to provide the employers a job that is interesting and satisfying. Another important idea is that the focus should not be put on individual employees, but on the shared working methods, team approaches etc. (Clark 1995).

The goal of the intellectual capital management (ICM) is to combine the intangible assets into the same thought frame of accounting with the tangible assets (Edvinsson and Malone 1997). Currently the intellectual capital management "concentrates on modeling and measuring the competence capital stock" (Kirjavainen and Laakso-Manninen 2000, p. 37).

The common denominator in these different views is that the managerial practices of an organization looks at things from a willed and conscious point of view. They execute and implement the strategic and other plans. Joyce et al. (2003) has proved that execution is one of the four key areas that must be simultaneously focused on in order for the company to become a "winner". The managerial practices define and articulate the goals for the organization to reach, and thus define the requirements for total organizational competence. The management is responsible for the actions taken to reach the set targets, and refitting the targets and the actions to the ever-changing environment.

Managerial practices have a major effect on the success of the whole organization. (see, for instance, Ahonen 2001, Mintzberg et al. 1998). Due to this, managerial practices are an attribute of organizational competence.

3.2.8 Organizational learning

Organizational learning was brought to general attention by Argyris and Schön in their book *Organisational Learning: A Theory of Action Perspective* (1978, 1995). The key proposal was that organizations should be considered as having a learning capability as something more than a collection of individuals. This learning capacity is presented as an organizational competence attribute because an organization that can learn faster and deeper than others is likely to succeed better in changing situations. It could be argued that this attribute could be divided into several sub-attributes that affect an organization's capacity to learn. However, for the purpose of this study it is enough to show that an organization's capacity to learn is an attribute of organizational competence.

Hayes and Wheelwright (1984) have suggested several processes by which organizations can learn. Their suggestions are: individual learning, better selection and training, improved methods, enhanced equipment and technology, more

appropriate division of labor and specialization, improved product design, substitution of capital for labor, incentives, and leadership. Pedler et al. (1991, Pedler and Burgoyne 1994) wrote about the concept of a learning company. A learning company is such that it supports the learning of each of its members and it is able to develop and transform itself.

The idea has been carried further by Senge (1990, Senge et al. 1994), who proposed that a learning organization should follow five disciplines: personal mastery, mental models, shared vision, team learning and system theory. Senge means by systems theory the idea of seeing the whole of the organization and its connections to society, not just the individual parts the organization consists of.

Nonaka and Takeuchi (1995) also discussed some aspects that enable organizations to learn. They describe different roles that should be taken in an organization for it to learn effectively. The top management creates vision that the middle managers develop into more concrete concepts for the employees to implement. The previously described SECI-model (Nonaka and Takeuchi 1995) and ba-theory (Nonaka and Konno 1998) also show ways in which organizations can learn.

Levinthal and March published a review about some aspects of organizational learning in 1993. Some important study items were the effect of current organizational competencies towards future competence development of an organization and the advantages of learning-by-doing –processes. It was presented – quite intuitively – that organizations prefer to develop the competence areas where they are already good. According to the same study (Levinthal and March 1993) the learning-by-doing should not be a preferred development process in a learning organization. They mention that there are too many cognitive limits that constrain learning for it to be effective enough. A reference was made to earlier similar studies (Brehmer 1980, Fischhoff 1980) that it was very confusing even to the most capable individuals and organizations to widen the experience from small personal samples to complex organizational issues.

A very thorough definition of organizational learning was presented by Österman (1998). He stated that "Organizational learning is the process where integrators that codify their function to routinized procedures or stabilized malfunctioning interfaces are being enriched by active integrator. Here the codification has the same stabilizing, selecting effect that definition has also in the technological integration. Active integration then generates new options for organizational integration, new variation".

An additional aspect that has been presented in the conceptual frame of a learning organization is related to an organization's need to be able to forget in order to develop itself (Hamel and Prahalad 1994, Prahalad 1998, Prahalad and Bettis 1986). According to Lähteenmäki et al. (2001) unlearning the old is an absolute requirement in order to make a change successful.

Forgetting takes place in organizations. "People leave organizations. Records are lost or misplaced. Technologies become obsolete" (Argote 1999, p. 35). Already Hirsch (1952) showed that an interruption in a manufacturing firm increased production costs when compared to the level before interruption. Thus it is

evident that organizations have not been able to retain all the knowledge (Argote 1999).

Both Argote (1999) and Galarreta (1997) have shown that the ability to forget has been essential in developing "right" knowledge, i.e. changing the wrong habits and data into new ones. An example of this side of organizational forgetting is provided by Kirjavainen and Laakso-Manninen (2000). They describe a situation in IBM, where the traditional core competencies became the core rigidities of the company. IBM couldn't transfer its competence set from mainframe technology to personal computing –technology and lost its first position in the computer business to Microsoft in the 1980's.

The presented examples show that organizational learning (and forgetting) has an effect on an organization's success, and thus it is an attribute of organizational competence.

3.2.9 Information and information technology systems

Information systems refer to the ways in which information is shared and maintained in the organizations. In the recent years the effect of information technology –systems (IT-systems) has increased as new tools such as the Internet have hastened the traditional ways of information sharing (examples: the e-mails vs. "snailmails", newsgroups vs. bulletin boards or the WWW vs. paper publications) (Pundt and Bishr 2002, Sakkas et al. 1999). However, there are still the more traditional information systems (libraries, for example) available. In addition to the aspect of improving the methods of exchanging information between individuals, information systems will support organizational stability in a case of major personnel changes by acting as the organizational memory (Kingston and Macintosh 2000, Robey et al. 2000). The more traditional information management systems would include tools such as libraries and traditional bulletin boards etc.

Today's view is, however, very focused on information technology (IT)-systems. Functional IT systems can help an organization to perform duties that a collection of individuals couldn't perform alone. Their importance has been shown in several studies (see, for instance: Pascale and Athos 1982, Peters and Waterman 1982, Powell and Dent-Micallef 1997). Attaran (in press) has presented cases, where defined IT-tools have successfully supported the re-engineering of a company's business processes. Sarkis and Sundarraj (2003) showed that IT-systems are needed for managing the resources of a multi-national company. Janson and Wrycza (1999) were able to show that information technology had helped Polish entrepreneurial companies to succeed in a market economy.

It could be argued that several studies which reflect the importance of sharing large amounts of knowledge between individuals also stress the importance of IT-systems, since today a major part of information sharing is done by using IT-systems (e-mails, newsgroups, etc.) (Conceição and Heitor 2002, Davis and Hall 2003). There are most certainly several organizations where IT-systems have lowered the organizational competence of the organization they have been used in, when a large number of the personnel have used their time and effort to

learn systems that don't support the work as supposed, or when people do not have time to learn to use them as planned (Frangos 1998).

However, it is difficult to think of several core tasks that could be done without information technology systems, including for example data mining, customer relationship management and billing. There are several organizations (see, for instance: Duysters and Hagedoorn 2000, Torkkeli and Tuominen 2002) that have defined their core competencies to be fully dependent on these types of IT-systems. Still, it should be kept in mind that information technology systems are only a part of all the information systems of an organization.

The case of Hansel (presented in table 6) has shown the level of meaning a functional IT-system can have today on the organization's capabilities. The electronic ordering channel, tendering system and financial management system for procurements have increased the effectiveness greatly (Hansel 2003b). The company does not handle any physical logistics anymore. Most of the products are transferred directly from the vendor to the customer without any intermediate warehousing. (Sakki 2001, p. 207).

TABLE 6   Hansel's successful adaptation of a new vendor management information system.

Hansel Oy was founded in 1995 (Hansel 2003a). The key task of Hansel is to offer procurement services to the State administration and local authorities. 07). Hansel has over 20 000 customers (Sakki 2001).

Since its beginning Hansel has been focusing on developing an electronic vendoring and purchase management system (Sakki 2001, p. 207).

With the introduction of e-systems costs have decreased. Hansel has estimated that they have been able to cut 95% of the overheads in the best cases. The EU commission nominated the Hansel's solution as the most advanced eProcurement solution in Europe in 2002. There are also other studies supporting this understanding (Hansel 2003c).

Before Hansel's system was used the overheads of purchase management averaged 30% of the total cost of the product. (Sakki 2001, p. 208). Today the costs have been reduced "significantly" (Sakki 2001, p. 208). Several nominations and studies about the effectiveness of the system (Hansel 2003c) support the understanding that IT-systems create real competitive advantages, and thus are an attribute of organizational competence.

From the point of view of organizational competence, Hansel has been able to create a very high level of expertise. The competence is embedded in its information systems. Naturally information systems need to be constantly developed, and used by expert personnel, but it is simple to argue that the system forms the basis for success. Without the IT-system and accompanied process the organization would not work as effectively.

The presented case and the studies show that information systems have had an effect on organization's success. Thus they can be defined as being an attribute of organizational competence.

3.2.10 Working environment design

The working environment design is a conscious act of management that can have an effect on people's capability to work (Handy 1999). The working environment design can focus both on the physical working environment and the non-physical environment, such as the psychological and sociological (Handy 1999) or mental and virtual (Nonaka and Konno 1998) environment.

Some obvious examples of working environment design for interaction processes would be office space installations, (box or open offices, coffee room location) which represent the physical environment. A psychological environment could provide encouraging methods for interaction (support for cross-organizational meetings, ability to create organizational discussions, allowed time usage patterns) (Handy 1999). The sociological environment could include organization-building questions, such as whether to work in small or large groups (Handy 1999). The mental working environment includes subjects from both the psychological and sociological working environments, while the virtual working environment would contain the set of information technology tools used to share and create knowledge.

The supportive factors of the working environment design are easily taken as obvious, but focusing on them can give the company competitive advantage (Nonaka and Konno 1998). If the reader has experience of both closed and open offices it is simple to see that they have a different effect on the capability to work. Similarly, if one organization has advanced virtual communication mechanisms in use and the other one doesn't, they would probably have a different capability to do interactive product development. Kemsley (1991) has shown that working environment design can create a positive atmosphere at a work place. Munck-Ulfsfält et al. (2003) have shown that the ergonomics of the working environment have an effect on the success at Volvo Corporation. Harmon-Vaughan (1995) has presented several effects that distance working will have on the requirements of the working environment in order for it to be a value-adding way of working. Kippenberger (2000) has argued for the importance of sociological and mental working environments, and that the effect of the physical working environment is diminishing.

The evidence for the effect of the working environment design supports the idea that it has an effect on an organization's capability to reach its goals, and it thus is an attribute of organizational competence.

3.2.11 The mix of structural attributes in an organization

In the same way that it is difficult to pinpoint an individual's separate attributes, it is difficult to isolate separate structural attributes in an organization. The attributes are constantly interacting with each other, and can thus be defined as being parts

of each other's. For instance, managerial practices depend on the organizational culture, which in turn depends on the managerial practices.

Several of the presented structural attributes of organizational competence are very closely related to each other. When Handy (1999) and Saariluoma (2002) discuss organizational culture they include several sub-attributes under this heading. Collective knowledge and organizational knowledge are close to each other, and organizational learning is often aimed at improving organizational knowledge (see, for instance, Nonaka and Takeuchi 1995).

However, each of the presented attributes has been shown to be an attribute in its own right. No two attributes are exactly the same. Thus the used method accepts them as individual attributes.

3.3   Attributes related to assets

The asset attributes of organizational competence refer to the definable and measurable products, production factors and other such assets that an organization has or needs in order to reach its goals. The assets refer only to the assets that the organization holds; the assets available in the environment are not competence factors, since they are at least theoretically available to all the organizations.

Competition makes assets important. If one follows the development of some traditional industries such as the paper making business it has been evident for a long time that the biggest players keep growing, in part by consuming the smaller players, since the industry's logic supports those organizations with strong tangible resources. Danneels (2002) has argued that without material resources the immaterial components of competence are not adequate to create new products. From the seven presented competence-related theoretical approaches intellectual capital management and performance management as well as core competence stress the importance of tangible assets in addition to intangible, human-related attributes (see, for instance, Amit and Schoemaker 1993, Hamel and Prahalad 1994, Kaplan and Norton 1996, Roos et al. 1997). Teece et al. (1997) state that firms' asset positions are one area that gives them competitive advantage. For these reasons the concept of organizational competence would be too narrow, if it were built totally on intangible dimensions.

Two asset-related attributes will be presented and studied in the following discussion. The reason for the selection of these attributes will be shown as the attribute is discussed. It could be asked if they are the most important ones in the context of organizational competence. As was the case with the attributes of individual employees and structure, it will not be shown that they are the most important ones. However, it will be shown that both are attributes of organizational competence, due to their truth and meaningfulness. Analyzing the attributes presented here shall shed sufficient light on the conceptual dimension emerging from the organizational structure to the notion and assessment of total organizational competence.

3.3.1 Cash

Cash refers to the organization's immediate liquid finances: the money in pocket or in the bank account. Cash does not refer to financial instruments such as shares or given loans that can easily be converted to money.

Cash is a very important resource for an organization because it provides for operational elasticity. Having money creates freedom, because it can be used very swiftly to realize goals. It does not cause essential dependencies or external commitments. It does not firmly bind the organization to anything nor does it dictate conditions for management. The cash can be used for marketing campaigns, organizational development, investments, etc. without looking for external funding.

Unfortunately, few organizations can run their operations based on their own cash reserves. This difference in the cash reserves makes it a factor of organizational competence. For example a study on the unsuccessful business-idea of Internet-grocery stores shows that one of the reasons for their failure was the lack of cash needed in a daily competitive situation (Ring and Tigert 2001). Cifarelli et al. (2002) presented Italian start-up cases, where the availability of sufficient immediate finances and effective financing methods were the key factor between successes and failures. Farrell et al. (2000) showed that since investors' are mainly interested in improving their financial gains, the companies whose cash situation is good are more interesting to investors. One of the main reasons for bankruptcies has always been the lack of liquid funds – it is not enough to have good machinery, if there is no money to pay the bills (see, for instance, Herlin 2001).

The presented studies show that an organization's cash situation has an effect on its capability to succeed, and thus cash can be defined as an attribute of organizational competence.

3.3.2 Fixed assets

Fixed assets refer to all of the assets that are obtained to produce incomes during more than one financial year (Taloustieto 1995, p. 66). Fixed assets are referred to as "fixed", because they are considered to be a part of the organization's long-term property in accounting (Leppiniemi 2000, p. 148).

Fixed assets differ from cash even though they can be converted into cash and they have a monetary value in accounting (Leppiniemi 2000). Converting them into money takes some time, and their cash-value depends on several factors, such as the time that can be taken to realize them, and the situation in the organization's environment. The accounting value of the fixed assets is based on rules defined in accounting standards (Leppiniemi 2000). However, fixed assets are not primarily used for trading them, but using them for the benefit of an organization. Their "use-value" may be much more important than their accounting valuation.

There are numerous different types of fixed assets (see, for instance, Leppiniemi and Leppiniemi 1999), but in order to improve the conceptual

understanding of organizational competence it is enough to discuss them in general terms. Some of the classes of fixed assets are buildings, production factors and shares (Taloustieto 1995, p. 66). For a conceptual analysis it is enough to understand that the attribute of fixed assets contains numerous sub-attributes, and is internally a wide concept.

A company with no such competing factors is weaker than a company with a good set of fixed assets (see, for instance, Saario 1999) Nieto and Pérez (2002, p. 19) state that "Firm assets are the most important element in strategy formulation and implementation. A company's grounds to success can be found here". Byrne (1994) discussed the property management of public organizations in the UK, and presented studies that suggested potential savings in the range of 500 million GBP over 5 years by better managing the properties. Jones (2000) has presented that the intellectual management of fixed assets helps to free capital for other uses.

Being able to leverage fixed assets provides an important method of getting power behind ideas. Especially when an organization is refocusing its strategies, this factor has a very visible and important role. A legendary example is the way Lee Iacocca (Iacocca and Novak 1984) had to realize very swiftly the property of Chrysler to keep its core activities. One of the ideas of the core competence approach (Hamel and Prahalad 1994) is to take the full use of the available assets, and aim them at supporting the core activities (Hannus 1995).

However, it could be argued that fixed assets are not as important today as they have been earlier. Today several organizations aim to liquidate their fixed assets by selling them and then leasing them back. This development has taken place, for example, in the office properties. The decreasing importance of fixed assets can be seen from the companies' share valuation comparison to balance sheet: for example, in the end of the year 2000 Nokia was valued 20,6 times more valuable than the items in its balance sheet (Talouselämä 2004b).

Just like cash, fixed assets are one attribute that may have an effect on an organization's capability to reach its goals despite the relative decrease of the importance of the attribute. Thus fixed assets can be defined as an attribute of organizational competence.

3.4   Other attributes of organizational competence

This chapter started by stating that the presented list of attributes would not contain all the possible attributes of organizational competence. Depending on the background and interests of the reader some other attributes could have been emphasized more. Individual people definitely have more attributes than have been presented – for instance physical attributes could have a major effect on the competence of some organizations, say, in military or professional sport organizations. Different types of organizational processes, such as logistics or financial processes could create some advantages for an organization. The number of attributes embedded in production factors and other fixed assets are much more numerous than presented. Inventories were not discussed at all, even though they

might have an effect on an organization's capability to reach its goals as well. The situation is as described in figure 4: the boundaries of an organization contain several attributes that may affect its competence, and a lot of white space between the presented attributes. The situation is similar to the one illustrated in figure 1.

Creativity   Motivation   Roles
            Manager   Managerial
     Emotions   practices
                    Expert
Intelligence Commitment
                    Processes   Strategy etc.
  Skills
         Knowledge   Organizational
                             knowledge
Communication
                    Culture
                             Collective
                    Values   knowledge

                             Organizational
                             learning
Cash   Information
                        systems

Fixed assets   Work environment

FIGURE 4   The presented attributes of organizational competence. The box represents the studied concept, organizational competence, and the attributes that have been presented are set within the concept.

Theoretically it could be argued that in the widest possible sense each individual in an organization has a large number of competence attributes. The competence attributes of each individual interacts with the competence attributes of other people, and the other competence attributes of the organization, thus creating a huge number of competence-related attributes. If this process is considered from a practical point of view, the number of attributes that is required to fill the "white space" in figure 4 becomes unlimited. Thus the approach of simply listing all the possible attributes of organizational competence is doomed to fail. However, it would be interesting to study in more detail the most important competence attributes required for success. This interest could work as a seed for future studies.

From the point of view of studying the contents of the concept of organizational competence, the presented list does, despite its compactness, cover enough. It shows that there is a large number of attributes of organizational competence, and it gives us a solid theoretical and practical stance on which to start to build a general theory of organizational competence by recompositional technique (Saariluoma 1997). Recomposition requires us to define the presented attributes into such groups that they hold all the possible attributes within them,

and "fill" the space between the presented individual attributes, creating the situation presented in figures 2 and 5.

Theoretically, if it were possible to show all the possible attributes of the presented concept, the presented attributes would fill the whole space of the groups. Since this is impossible in practice, there is a need to define the boundaries and denominative factors of these groups. We must know what makes a group out of a set of individual attributes.

3.5   Super-attributes of total organizational competence

The presented list of attributes was structured so that the attributes were collected under three headings: the individual-based, organizational structure –based and asset–based sets of attributes. The division was based on the presented earlier approaches to organizational competence. Since the goal of the research is to create a common foundation for the studied phenomenon it is relevant to ask if this classification mechanism could be used as such for classifying the attributes. Thus there is a need to discuss each super-attribute independently, and study if there are attributes that do not fall under the named categories.

The mentioned commonalities define the sets of scientific attributes sharing some but not all definite qualities. There can be, and most likely are, other attributes affecting organizational competence. Thus we will need to look at the organization of attributes and see if it is possible to find common elements in the attributes in order to create a structure of super-attributes that can be used as headings over the actual attribute sets containing more than only the presented attributes.

These super-attributes are presented to simplify the usability of the presented concept. Each super-attribute may contain an unnumbered amount of individual attributes that share some common qualities. The headings are presented to help note the most important common denominators of the attribute sets. According to Niiniluoto (1980, p. 168) Wittgenstein has stated that several concepts must be defined by presenting a substantial amount of typical example cases, and argues that the concepts contain all the elements that are reasonably alike with the presented cases. The previously presented attributes are these typical example-cases of the presented concepts of super-attributes.

3.5.1   Individuals

Each individual person in an organization has a number of organizational competence related attributes. Some of these were discussed in detail in the earlier chapter. What is common to all these attributes is that they are embedded in single individuals. If one person leaves an organization, all of her competences leave the organization simultaneously. Every evening managers have to fear whether or not organizational competence based on individual people will return to work next day.

The definition for organizational competence embedded in individuals is simple: it is *everything that can be lost if an individual does not work any longer for the organization.* The easy way to test whether a competence is embedded in an individual is to think that she suffers a car accident and cannot be accessed. If the required competence cannot be accessed either, it was embedded in the individual.

From the presented list of attributes, all the qualities of individual employees are typical psychological individual-based attributes. The presented attributes are:

- *Creativity*, which gives an individual the capability to produce relevant, new and previously unknown ideas, and thus generates for organization the capability to find new goals and new ways to reach their goals.
- *Intelligence,* which gives an individual the capability to solve previously unknown problems and tasks thus increasing the organization's capability to succeed in these types of situations.
- *Knowledge and skills*, which make it possible for the employees to carry out their tasks expertly, and thus increase the organization's capability to reach its goals.
- *Emotions* that may affect on the individual's capability to accomplish tasks either negatively or positively.
- *Motivation*, which supports an individual's will to use her capabilities in a task.
- *Commitment* which makes an individuals' use their other attributes for the benefit of the current organization.
- *Communication capabilities*, which enable individuals to share their ideas and work in co-operation with other individuals.

There are definitely other individual-based attributes of organizational competence as well – even much more than has been named. An individual person's experience, self-knowledge, stress tolerance and her physical capabilities may be attributes of organizational competence as well, just to name few additional. However, they all are based on the capabilities embedded in individual people, and are thus possible to lose if that individual does not work for the organization any longer. When considering possible individual-based organizational competence attributes the reader should consider all possible qualities of an individual people that may have an effect on an organization's capability to reach its goals, not only the ones presented above as examples.

It is relevant to ask if it is possible to classify the individual-based attributes under some more detailed headings, such as psychological, physical, social etc. Most likely this is possible. However, it will not be tried to be accomplished in this research. The information that there are attributes of organizational competence that are embedded into individual people reveals a part of the internal structure of the concept of organizational competence, which is the goal of the research. Understanding of the structure of individual-based attributes can be further deepened in later studies.

3.5.2 Structure

Structure makes an organization. Experience has long ago showed that a group of skilled individuals cannot make real progress without having effectively organized their activities (Mintzberg et al. 1998). The commonality in the attributes of this group is that they all co-ordinate and guide the actions the individual's can or should take in the organization. They are methods of generating organizational competence shared by several individuals.

From the presented list of attributes the following can be considered to fit under the super-attribute heading "structure":

- *The roles of employees* are on the borderline between the attributes of individuals and structure. However, since roles are organization bound, they should be considered as structural attributes. Even though an individual might leave a role, the role would stay. An old Finnish proverb says: "When God gives a job, He also gives intellect".
- *Organizational guiding principles: vision, mission, strategies, and values.* They are the basis of the conscious effects to co-ordinate work within an organization. They show to the stakeholders the direction in which the organization is trying to move.
- *Defined organizational processes:* A defined organizational process embeds practical knowledge in organizations working habits.
- *Culture* simply makes an organization (Hofrichter 1999). Every organization has its own culture (Mintzberg et al. 1998), which is not embedded in individual employees but in the organization as a whole (Saariluoma 2002 p. 141).
- *The values of an organization* are important building blocks of its culture. They define what is truly allowed in the organization.
- *Organizational knowledge* is by definition something embedded in the organization, not only in individual employees.
- *Collective knowledge* can be shown not to be lost even if a number of individuals left the organization, because the same knowledge is embedded in several individuals at the same time.
- *Managerial practices* facilitate daily co-operation and work in organizations.
- *Organizational learning and organizational forgetting* are ways to change the level of organizational knowledge.
- *Information- and IT-systems* are extremely important both as organizations' memory banks and the enablers of knowledge creation and sharing.
- *Working environment design* enables the attributes of organizational competence to interact.

All of the presented attributes create and define an organization as a whole, not only as a group of individuals working on their own tasks.

Even though organizational atmosphere and working practices have been discussed, there is not enough scientifically valid evidence to define them as true. This does not mean that they aren't attributes of organizational competence; it only means that they should be studied more in order to validate or falsify them.

Similarly there are most likely numerous other attributes that can be classified under the heading "structural attributes" – the presented ones are definitely not most important ones in every possible situation. Co-operation practices, trust within organization, power and its usage patterns, etc. are just a few that could have been presented as well under this heading. However, the presented attributes reveal the classification denominator of this group: they are attributes created from social intercourse of people, either consciously (i.e. management-related attributes) or unconsciously (i.e. culture-related attributes). Some attributes, if not most, are affected already by both of these general backgrounds, not to mention the situation if a more detailed classification would be defined. Thus it is difficult to classify the presented attributes in more specific groups.

It should also be noted that most likely an individual attribute is not alone responsible for creating the structural competence of an organization, similarly as an individual attribute of an individual person does not normally create her total competence. The interaction of attributes is also an important phenomenon that creates constantly new sets of attributes. The way in which culture effects on organizational processes and IT-systems effect on managerial practices may create new structural attributes of organizational competence.

3.5.3 Assets

The concept of assets has not recently been central in thinking about organizational competence. Nevertheless, it should be central when the capacity of organizations to reach their goals is discussed. It is a reality that cash, machinery, products, storage and other ways of having and getting capital are often crucial roles when thinking about the competence of an organization (Stern et al. 2001). Good people and good structures are important, but they need some assets. This is why one cannot ignore assets in thinking about the total competence of an organization.

There are only two attributes presented in the attributes list that fall under the super-attribute "assets". These are (i) cash and (ii) fixed assets. Both are definitely something solid, measurable, definable, i.e. some type of material assets that the organization may use. The list of asset attributes was very short. Several asset categories could have been easily added to it. For example, inventories, products and debts etc. could have been added to the list. However, accounting is its own scientific area requiring deep understanding on this special subject, and more importantly, the two attributes were used in order to show that there are also attributes of organizational competence that are not based on individual people or their shared work methods.

Mostly assets are very easily comprehensible. However, in modern economies one can find less obvious cases. Today some organizations do not have

physical products or production factors of their own. An information technology company may sell its piece of software over the Internet and a consulting company may bill for its experts based on time. However, one can still argue that even these items can be classified as assets in the view of organizational competence since they are something the organization has a proprietary access to, and which it can convert to cash or other financial instruments based on a commonly agreed valuation method (see, for example, the business analysis of Nokia in Talouselämä (2004b) or the analysis of Kone in Talouselämä (2004a)). The valuation method can come either from accounting (see, for instance, Leppiniemi 2000) or, in the case of pricing, from its market value. Thus, the immaterial assets provide essential resources and this is why they must be evaluated when organizational competence is investigated.

The previous discussion makes it more difficult to define the family resemblance in this set of attributes. It cannot be a fact that they are all physical elements. However, there is something in common with cash and fixed assets: they are the proprietary property of an organization that is not based on individual people and their shared working practices. In several cases it is possible to valuate the assets financially and to sell to an external actor unlike individual- or structure-based attributes.

It should be noted that the basis of some of the structural-attributes is built on the assets. For instance, information technology systems are dependent on physical computers and networks just as the physical working environment design is dependent on the physical facilities available. However, there is a difference between the assets and the structural attributes of these examples: the computer equipment and facilities would have the same financial value even if they were in a warehouse. What makes the structural elements important is the way in which the computer equipment and the facilities are used to create the information system and design the physical working environment.

If we looked at some articles from the valuation perspective of organizational value creation and measurement we could see that there is a number of other, more closely defined assets (see, for instance, Groth and Kinney 1994, Malmi and Ikäheimo 2003). However, for the purpose of developing a notion of organizational competence it is enough to note that all the lifeless elements that may explain why an organization is able to reach its goals are asset-attributes of organizational competence.

3.6 Conclusions on the attributes of total organizational competence

We can see total organizational competence as a list of attributes. Several approaches have presented a number of different attributes that have an effect on organizational competence. When combined, the list is unlimited, but these

attributes have to be taken into account. If they are neglected we do not have a sufficiently accurate picture of reality.

Grouping attributes under headings of super-attributes based on some commonalities helps to understand their general and shared qualities. It also supports the understanding of the variety of the possible attributes. The super-attributes form a solid stance on which the concept of organizational competence can be structured.

The presented structure of the attributes is illustrated in figure 5. It describes how the presented attributes are classified under three super-attributes. The super-attributes are used for 'filling the blank space' between the presented attributes. As has been discussed, each super-attribute may contain several additional attributes, and the presented structure should be such that it covers all the known possible attributes.
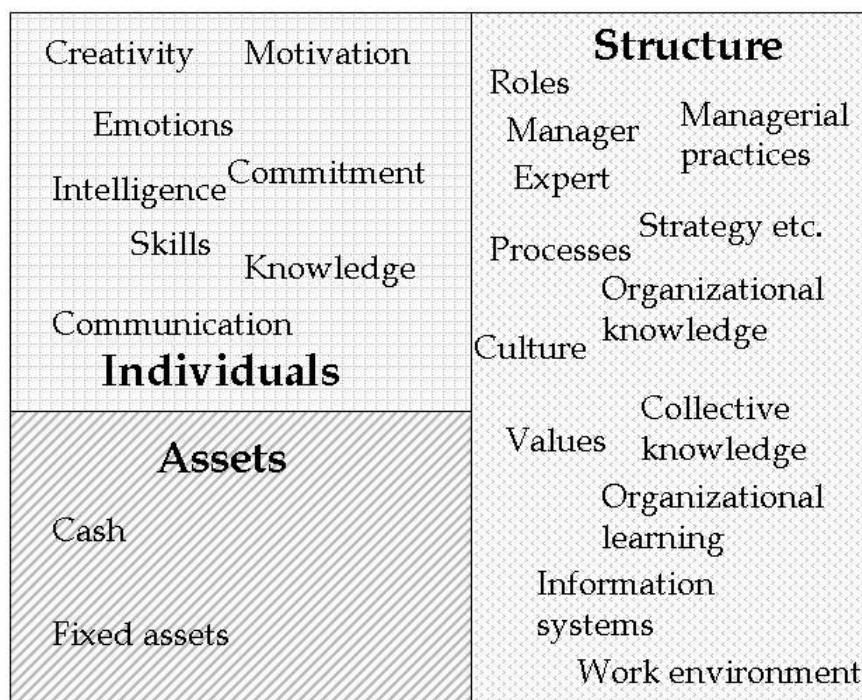
FIGURE 5   The presented structure, or the "super-attributes" of organizational competence. The attributes have been classified under the titles presented in the three designated areas of the studied concept.

It is a relevant question to ask whether or not there are other super-attributes as well, or if it is possible to find higher levels of super-attributes which contain all the possible attributes. The first of these questions can be studied based on the presented definitions of the super-attributes. Is there an attribute of organizational competence that is not based on the individual members of an organization, nor based on the non-people related proprietary property of an organization nor is an organizational competence generating method shared by several individuals? No, there is not. Since competence refers to an organization's internal attributes, all the non-people–related attributes are the property of the organization, or some part of

it. That leaves the attributes related to people. If we remove the attributes that are related to the methods shared by individuals of generating organizational competence, what is left? The ways, in which individual people can generate competence to organizations, i.e., the organizational competence attributes of individuals.

Are there then other, maybe more specific ways, of structuring the attributes? Yes, there are several. Since it is a question of definition, the attributes can be constructed in several ways. They can be constructed in alphabetical order. The attributes can be constructed in groups based on the number of letters in their names, etc. The presented super-attributes are only one rational way to organize attributes. However, as the use-situations and the dynamic qualities of organizational competence are discussed, it can be seen that the presented construction supports the discussion about their use in an organizational context, and would thus seem both logical and usable.

It should be noted, that it has not been claimed that one individual attribute is alone responsible for an organization's capability to reach its goals. For example Joyce et al. (2003) have shown that an organization always needs a combination of attributes to succeed. This combination may be formed from attributes rising from different super-attributes, as has been illustrated in figure 3.

However, understanding the attributes of organizational competence alone is not sufficient when trying to comprehend the full picture of organizational competence. Foundational analysis states that in order to know a concept one must know in addition to its attributes and the way they are organized, the use of the concept in different contexts and the definition of the concept. (Saariluoma 1997).

4 THE USE OF ORGANIZATIONAL COMPETENCE

The presented attributes of organizational competence are not equally relevant in any given situation, when we assess the competence of an organization. In some circumstances management may be vitally important; in others it is evident that financing is decisive. This dynamic nature of the concept makes it necessary to investigate the uses of the concept of organizational competence.

If we look at the possible competence attributes of an organization, it is easy to name several that may have an effect on an organization's competence. They can be said to create the total set of organizational competence attributes per organization. This total set of attributes is a theoretical limit for total organizational competence, but we can hardly exhaustively analyze or investigate it due to the large number of possible attributes. This is generally true with the total contents of concepts (Saariluoma 1997). However, the knowledge of the total concept that the improved understanding of the attributes and the way they are organized brings, allows us to use the notion flexibly. We can understand that there are different uses and these different uses are important in solving different types of problems.

However, before it is possible to advance to the discussion about the practical use of the concept in different situations we must understand what creates these situations. It would be foolhardy to claim that only an organization's internal factors affect its capability to succeed. A war, an economic depression, the availability of a competent workforce etc. can have an effect on an organization's capability to succeed. Since the concept of organizational competence refers to the internal factors of an organization it is evident that there must be a term and concept to discuss the external factors that may have an effect on the organization, and thus create the situations in which competence is used.

4.1   The organizational environment

Each organization is in constant interaction with its surroundings (Andersson et al. 2002). And when an organization interacts with the surroundings, each has an effect on the other (Ståhle 1998). The possibility of reaching organizational goals naturally depends on the surroundings in which an organization works. If markets are void of competition, an organization's clients are interested in its products and its financing solutions are in order, why should a company not grow? Thus the surrounding environment has an effect on the organization's capability to reach its goals.

There are several factors affecting the success of an organization, which an organization cannot manage by its own decisions. Whatever the type of the organization, there are always some factors beyond its influence. Even the largest organizations, such as the United Nations, the government of the United States of America, or GE, or Microsoft have some external realities that they cannot have an effect on, but which affect them. These factors will be called the organizational environment when compared to organizational competence, i.e., the internal factors which affect an organization's capability to reach its goals.   Thus *the organization's environment is a set of factors which affect the organization but are not a part of the organization and which the organization cannot manage.* It simply is not in a position that it could, by its own decisions, do what it would like to. The organization must take into account how external decisions are made and circumstances formed.

The organization may naturally try to manage its environment. Companies may try to create a positive image of themselves for their customers. Organizations may try to affect the legislation of the area in which they work. Governments may try to gain access to resources outside their boarders. However, organizations do not make these decisions alone and by themselves. Customers may form their own opinions that differ from the company's goal. Legislators may make different laws to the ones the organization wishes.   The country whose resources are attempted to be accessed may form a strong counter argument. It probably depends on organizational competence how much it is able to have an effect on the environment, but by definition an organization is not able to have a full decisive command over its environment.

Thus the environment of an organization is not a competence factor because it is not a factor governable by the organization. The environment is potentially the same for all the organizations though some organizations are unable to take advantage of it (for a general discussion of the subject, see Ahonen 2001, pp. 102-103, or Ming et al. 1991). The reasons for this are numerous, but it could be argued that these reasons are strongly tied to organizational competence attributes; the lack of usability of the environmental possibilities may be due to reasons related to assets, individual-based reasons or structural reasons. For example, why don't all Finnish manufacturing companies move their factories to China or India, where it is possible to cut costs? Companies may lack the investment capabilities or a machine-base in the suggested locations. Companies may need experts that are

only available in Finland. Companies may only be able to work in Finnish due to the language abilities of the stakeholders, etc.

Bonaiuto et al. (2003) divided environment into four aspects: spatial, human, functional and contextual. To improve the understanding of the concept of organizational competence it is enough to combine these aspects under two headings, the natural and human aspect, where the latter refers to all environmental aspects that are not directly defined by the natural environment. These two aspects can be defined, and they both have different types of effects on the studied concept.

4.1.1   The natural environment

The natural environment refers to such issues as the availability of raw materials, natural conditions and important distances between the organization and its external interest groups, i.e., the environment's spatial aspects (Bonaiuto et al. 2003). They are all issues that belong to physical nature but they must be taken into account in investigating the organization, because they may be a source of costs or operational risks.

The importance of the physical importance has been shown in several cases. The closeness of supply chain points to customers has become a primary competition factor in several cases, such as the case of Wal-Mart's leap from good to great (Collins 2001). The physical closeness of several technical and business universities to sources of financing and R&D-laboratories could develop into a good place for innovative business development, as has happened in Silicon Valley, CA, USA. (Aoki and Takizava 2002). For a detailed discussion on the effects of the natural environment, see Ming et al. (1991).

The natural environment lives under constant change. Changes may be very slow or very quick, but nevertheless they do exist. Slow changes may take place as land erodes, or the planet warms, or as general societal developments change the importance of some attributes. For example, central heating systems in colder environments and air conditioning in warmer environments have made it possible to offer products not traditionally connected to the local environment.

There are also many examples of quick changes. Floods, hurricanes, earthquakes, etc. affect organizations and their competence requirements. For example, Holland (1988) showed how control of the Tennessee River flooding had a positive effect on the area's organizations. If we look at the history of mankind, there are several cases, where civilizations have boomed based on the supportive natural environment – see for example the effect of the Nile in the Egypt, or the Euphrates and the Tigris in Mesopotamia.

4.1.2   The human environment

The human environment also has several important attributes. For example, it contains such attributes as business or socio-cultural environments. Business environments entail such factors as financing and market conditions. Evidently, these two issues are very important in assessing the potential of a company to

reach its goals (Penrose 1959, Pralahad and Hamel 1990, Wernerfelt 1984). The socio-cultural environment entails legislation, availability and pay-level of the work force and its quality as well as cultural work patterns (e.g. Bonaiuto et al. 2003, Handy 1999). Other relevant attributes could be, for example, the technical infrastructure or the amount and quality of public services available. Thus the human environment of an organization is a very versatile concept encompassing issues of very different natures. The concept is bound only by the criteria of referring to human activities outside an organization.

The importance of the human environment in the context of organizational competence can be seen in numerous examples. For example, the competition situation is an important aspect. If markets are very competitive and there are numerous producers with equal capabilities, it becomes much more difficult to obtain new customers than in situations where competition is low. This may seem simple, but sometimes it is very difficult to assess how things shall go and how to open more markets. A famous example occurred when Ericsson did not buy Nokia in the early nineties (Häikiö 2000). The availability of financing is an equally important factor of human environment – see, for instance the experiences about the growth factors of the new technology companies in India gathered by Kumar and Jain (2003). Another example of the importance of the business environment can be found in the ways the legal actions formed the market economy in the USA from the 1960's to 1980's, for instance in the telecommunications sector (Majumdar 2000).

There are also other important, psychosocial, aspects in the human environment. For example, some countries offer a reasonably skilled work force at low prices. Many companies have moved their production lines into countries that offer lower wages, low taxes and little or no social security costs (Kostiainen 2002), and can still guarantee the same manufacturing effectiveness as countries with higher costs (Vargas and Johnson 1993). Another example is how high educational levels have become a very important factor in assessing environmental competence (see, for instance, Markkula 2003). Products are increasingly more complex and they presuppose a very highly skilled work force. In fact, this is not enough, as the cultural environment and atmosphere must also be positive. If we think that a generation of young people in a small country such as Finland with a population around 5 million could produce such central innovations as large parts of the digital telephone technology system, SMS-messages and LINUX, the core explanations must be found in schooling and cultural factors, i.e., the human environment. The world competitiveness report has listed several times this small nation as one of the most competitive environments for business development (IMD 2001, 2002).

The list of the ways in which the human environment affects on an organizations' capability to succeed could be easily continued – examples can be found daily in any financial newspaper, from the state's support of the Finnish maritime industry to the amount of students studying in some specific fields. What is common to all of these examples is their dynamic basic nature. Just as with the natural environment, the human environment is also in a constant state of change.

4.1.2.1 The stakeholders

The human environment has one important aspect that should be discussed in a little more detail – human being. This discussion should be based only on people that have a stake in the organization, or who are a part of the organization's effectual environment. These groups of people are referred to as stakeholders of the organization (Lehtonen 2003).

Organizations have several stakeholders. Stakeholders may have a formal, official, or contractual relationship to affirm, or they may be active in the external surroundings of an organization (Lehtonen 2003). Some of these stakeholders form a part of an organization's human environment. Thus it is relevant to consider some main groups of stakeholders, and their connections to the competence of an organization.

Lehtinen (1998, p. 33) proposes that stakeholders can be classified under five headings: customers, co-operators, owners, personnel and other stakeholders. From this list owners have in turn been classified as participating owners, investors and other owners. From the previous lists, customers, co-operators, owner investors and other stakeholders are part of an organization's environment, since they are not an internal part of an organization. These external stakeholders will be briefly discussed here to show the connections they have to organizational competence. Personnel and participating owners have been already discussed as attributes of organizational competence.

From the customers' point of view they are paying for an organization's competence – the value the organization adds to the production process (Porter 1980, 1985). It depends on the type of the customer how the payment is made. In the case of a firm, customers are constantly evaluating the company's capabilities as they make the purchasing decisions, and aim their spending at the firms that best answer their needs. In the case of a public organization it is more difficult to define the customer – who is the customer of the police? The criminal, the citizen, the country or society? Whoever is the customer, each one of these possible customers gets something different from the police force: The criminal expects to be handled professionally; the citizen expects to live safely; society expects that public peace continues and is enhanced. The competence of a police organization must answer all of these and other possible requirements. Thus the customers of organizations have some requirements for organizational competence whatever the type of the organization.

Customers also define competence requirements by their behavior. If the customers want different types of services, companies may try to develop their competence accordingly. If criminals come up with a new form of crime, the police should be able to counter it. If society develops, the police should be able to offer public services fitting the new order.

Different co-operative stakeholders have different competence requirements for organizations. If organizations carry out common product development they need to know each other's strengths and weaknesses, and be able to mix their structures (Happonen 2001, 2002, Happonen et al. 2003). Similarly, if organizations produce something together, they should know each other's capabilities, and again

be able to combine the structures. It depends on the depth and width of the co-operative relationship as to how well organizations need to harmonize their structures, but it could be argued that some level of unity is needed to create a cohesive interface (Happonen et al. 2003). Thus the co-operative stakeholders have requirements for the competence of organizations.

Just as in the case of the customers, co-operators also affect competence requirements. Structures need to be changed to improve the fit, and individuals need to learn new skills. Organizations may need to add new hardware or software to be able to work with the co-operating organization. Thus co-operators may affect the goal-level of an organization's competence. The co-operators also naturally affect an organization's competence as they constantly share their knowledge with the organization, thus enabling the organization to learn (Argyris and Schön 1995, Happonen et al. 2003).

There are different types of owners (Lehtinen 1998). No matter what type the owner is, they have a common requirement – that an organization has the required competence. Similarly, they hope that an organization is able to produce positive results – whether the results are seen as the value creation of a company (Saarnio et al. 2000), or customer satisfaction results of a public organization, *etc*. The owners may naturally have a lot of other hopes and requirements as well.

There are also a number of other possible stakeholders. Officials have stakes in the organizations; investor-analysts have stakes in organizations; as do employees' family members. The people and organizations in close physical proximity to an organization may have major stakes in its competence. Think, for instance, of the requirements a neighbor puts into the organizational competence of a nuclear energy plant. The other stakeholders have different ways to affect an organization's competence requirements and competence. They may form public lobbying groups, such as Green Peace and similar organizations, who can affect on the organizations (e.g. Siquiera 2003), or the investment-analysts may affect an organization's managerial decisions (e.g. Benninga 1997, Black 1998) and thus its competence requirements, or family members of employees may put some pressure on an organization via their spouses.

By looking at all of the presented stakeholders it is evident that different stakeholders may have different goals for an organization. Employees might wish that an organization is a good and safe place to work. Owners may require that a company maximizes its profits and valuation. Co-operative stakeholders in R&D-project may see an organization's goal as being a good partner. Market analysts might wish that an organization acts according to their analyses to support their financial gains. This difference between the stakeholders' possible requirements towards an organization is an important aspect of the use of the concept, which will be returned to later.

4.2 Some use-cases

The analysis and discussion of the concept of dynamic organizational competence has been theory-based according to the used methodology. However, the concept is very practical – outside the real-world the concept of organizational competence has neither meaning nor the need to be studied. Thus the following subjects to be discussed should be illuminative and demonstrate, through real-world cases, why it is vital to investigate the dynamic elements of organizational competence. Through the real-world cases we have to get a good grasp of various uses and use-concepts. In fact, this means that we have to have a clear idea about the relations of uses of organizational competence and circumstances (Saariluoma 1997).

The real-life cases that will be presented are selected so that they introduce different aspects of the use of organizational competence. All are based on some developments that have been documented either scientifically, consultatively or narratively. Naturally these cases will leave numerous empirical problems unresolved, but to repeat the point: the focus is on the concept and the structure of organizational competence. The goals are foundational analytical and theoretical rather than empirical, because it is necessary first of all to have a good idea of the structure of a concept to use it later in making empirical research about the concept.

4.2.1 Case WapIt

WapIt was a Finnish company founded in 1998 offering value-added services to mobile communications (Valtonen 2001). WapIt was able to show good technical skills and products in the first wave of mobile Internet communications. The technical development culminated at the GSM World Congress 25.-27.2.1999 where WapIt's service packet was one of the first three offered in the world (Valtonen 2001, p. 71). The company's co-operation business network was very stimulating from the beginning - for instance Yomi, Radiolinja and Nokia. Simultaneously the company was well known for its "rock'n'roll" business attitude (e.g. Helsingin Sanomat 14.3.1999, 29.7.2000). The slogan that best describes the atmosphere of the newly founded company can be found in the beginning of Mr. Valtonen's book: "Goddamn it, we are geniuses". (Valtonen 2001).

The company was considered as one of the most interesting IT-related companies in Finland (Financial Times 11.5.2000) as well as globally (Valtonen 2001, p. 122, Wall Street Journal Europe 2000). However, technical success did not create financial success. Despite the investment made by the new investing owner, Durlacher, (Financial Times 14.2.2000), the founding owners had to invest   an additional 0,67 MEUR into the company to keep it growing and running (Valtonen 2001).

The company grew quickly via these cash streams. The number of personnel increased rapidly. The recruitment policy was to find the best qualified experts - even though some of these experts would be "just-out-of-school snot-noses"

(Valtonen 2001, p. 101). These "nerds" thought that "they were worth their value in gold" (Valtonen 2001, p. 101).

The financing proved to remain the major difficulty for WapIt. The investors were interested in talking about, but not interested in actually investing in the growth (Valtonen 2001). In April 2001 the financial situation became even more difficult, and a large number of personnel suggested of working without pay for a while to keep the company running (Valtonen 2001, p. 158). The last financing effort fell through in May, and finally CEO Hannu Bergholm informed the employees on May 31st 2001, that "…we have to give up and put the company in bankruptcy." (Valtonen 2001, p. 171). Financial Times called WapIt the "most high profile casualty" of the IT-sector slowdown (5.7.2001).

The company fell, as it could no longer keep running towards its goals. External spectators (Wall Street Journal Europe 2000) agreed with the internal view (Valtonen 2001) that the company had competent people, experts in their trade of developing and selling the software products. However, the actual competence requirements in the end were somewhere else. The primary competence requirement that the company did not have was cash. The secondary requirement was a method of raising venture financing to get the cash. Tertiary competence requirements could have been in the field of traditional management: cutting costs, decreasing speed, making more stable decisions etc.. The columnist in Financial Times (5.6.2001) referred to these areas by calling WapIt "undeserving of its high profile". The expertise in technical areas was no longer the competence required in the situation.

This use-situation shows very concretely how the concept of organizational competence is always situation-specific and often dependent on the environment. The business situation in the years 1999 and 2000 was more interested in ideas and flashy presentations, and who better to give them than an ex-rock star, Mr. Valtonen? But as the IT- and Telco –downstream took over, the business environment became more interested in traditional business management, and strong balance sheets. These were the areas of organizational competence that WapIt was unable to provide in the situation in which they were required.

4.2.2 Case Kimberly-Clark vs. Scott Paper

Jim Collins' "*Good to Great*" (2001) offers several interesting comparative cases on successful vs. unsuccessful companies in the same business environment. Two things make these comparisons most interesting: (i) a simple tool to compare the success of the organizations, the increase of the company valuation vs. the general trend in the stock markets, and (ii) the business environment was the same for the compared companies. The comparison between the paper-giants Kimberly-Clark and Scott Paper will be presented here.

The growth-cycle of Kimberly-Clark began in 1971. Over the previous 20 years the stock value of the company had under performed the markets by 36% (Collins 2001). Between 1971 and 1991 Kimberly-Clark increased its valuation 4,1 times more than the market average, and became the leading vendor of paper-based consumer goods in the world. Simultaneously, the close competitor Scott

Paper slowly lost its ground, and was finally acquired by Kimberly-Clark on 17th of July 1995 (Kimberly-Clark 2003).

The differences between these two companies over the two decades were numerous. Firstly, the CEO's of the companies were very different to each other. Kimberly-Clark's Darwin Smith was a quiet financial specialist, while Scott Paper had different types of CEO's, the most controversial example being the boasting Al Dunlap, who tried to keep Scott Paper constantly in the headlines (Business Week 15.1.1996, Collins 2001). Dunlap's goal was to cut the costs in personnel and R&D, and boost the company so that it could be sold (Forbes 26.8.1996, Dunlap and Andelman 1997). It was during Smith's period that Kimberly-Clark grew the fastest and during Dunlap's period that Scott Paper was merged with Kimberly-Clark (Collins 2001). According to Collins' analysis, Darwin was a typical example of a "fifth-level leader", a person that Collins' study found from all the companies that grew from good to great (Collins 2001).

Secondly, the companies reacted differently to direct competition. When facing competition from Procter and Gamble, Scott Paper pulled back, and started to seek for other business areas to work in (Forbes 1.8.1972). Simultaneously Kimberly-Clark considered tough competition as an advantage. The employees decided to beat Procter and Gamble at their own game, the atmosphere was competitive and not one of losing (Collins 2001). The company even focused the businesses on the more competitive business area of consumer goods in order to be able to achieve the victory (Collins 2001).

Thirdly, Kimberly-Clark did their best to encourage the best talents in the company to stay within the parent company. When Kimberly-Clark decided to move from paper manufacturing into paper-based consumer goods the company took with them the best experts they had in the businesses to be sold (Collins 2001). This enabled the company to increase its number of talented people even though the number of business areas became more and more focused.

If we look at these two companies from the point of view of organizational competence, it seems that there were certain attributes that Kimberly-Clark had been able to use better than Scott Paper. The first one is evidently the CEO and his working style, i.e. an individual that was able to develop the company's managerial culture. The other difference is that Kimberly-Clark really put effort into keeping the best people in the company. If the company was able to take the best employees from the sold businesses, it should (and based on the results could) have been able to increase the overall level of competence of its employees. The third presented major difference was the company culture and the atmosphere. It is difficult to succeed in competition by hiding from the competition as Scott Paper tried to do. Kimberly-Clark was able to focus its competence according to the situation's requirements, and that is why it was the acquirer and not the acquired in the merger in 1995. The company did a core competence analysis, pretty much as defined by Hamel and Prahalad (1994) two decades later.

4.2.3 Case Sonera

In 1998 Sonera was considered to be one of the leading mobile communication operators in the world (Relander 1998, Vennamo 1998). The mobile communications development in Finland (Makkonen 1998) had given Sonera a laboratory in which to build good competence (Relander 1998). The Financial Times (8.7.1998) defined Finland as being in a "cellular class of its own", and Sonera to be the biggest operator in this market area. A share in 10 other national mobile phone operators had given Sonera valuable experience in the mobile communications business of other countries as well (Relander 1998). In addition, other new business areas were considered to be at a high level of competence. The Financial Times (6.10.1988) defined Sonera as being one of the leading providers to IP-telephony services.

The company grew quickly in value after its initial public offering. Even though the business developed at a reasonable rate, the stock price grew extremely rapidly, and during the second public offering in October 1998 for institutional investors Sonera was already the second largest public company in Finland; the company was valued higher than for instance British Airways (Financial Times 2.11.1999). Simultaneously the company was considered to be at the peak of its development. When the Financial Times looked for a company to benchmark the services of Japanese NTT DoCoMo's, the world's largest mobile operator, Sonera was chosen (Financial Times 29.11.1999). The Financial Times (8.10.1999) stated Sonera as being the most advanced telecommunications provider in the Nordic markets – one of the most dynamic markets according to the Financial Times – in mobile communications and new services to telecommunications customers. Sonera was mentioned as one of the "four leading information technology companies" as it was forming a new alliance for e-commerce systems (Financial Times 28.9.1999).

In the year 2000 Sonera participated in the European UMTS-auctions (3rd generation mobile phone system), and acquired national licenses either individually or as a part of a consortia in 5 different countries. The cost of the licenses was over 3.6 billion euros. (Marttila 2002, Sonera 2001). As the UMTS-auctions started at about the time the millennia changed, Sonera was still considered to be top of its class (Financial Times 13.1.2000, 15.3.2000). The investment in the UMTS-licenses was thought to be partially financed by the sales of Deutche Telekom shares (Sonera 2000). During the following 6 months Sonera was not allowed to sell its shares - and the price of Deutche Telekom sunk with the rest of the global telecom sector (e.g. Financial Times 2.12.2000, 17.1.2001). Suddenly Sonera faced a situation where it did not have the tangible assets available to cover its liabilities. Sonera's share price sunk dramatically in the year 2000, from 80€ per share in March 2000 to under 10€ per share in one year (Sonera 2001, p. 75). After a long financial struggle it was announced in March 26th 2002 that Sonera and the Swedish telecommunications company Telia would merge into a new company, TeliaSonera (TeliaSonera 2003).

In just a few months' time period the company took an enormous risk in trusting that the surrounding world would not change its course too quickly. The

company trusted that the shares in the portfolio could be used to pay off the debt that had been taken to finance the auctions. The timing proved to be wrong, as the bubble of IT-hype burst in just a few months (Financial Times 2.12.2000). The external situation in which the company was in changed and Sonera was unable to adjust its competence configuration accordingly. The company simply had not enough tangible competence factors, i.e. cash or other financial instruments, to negate the effect of the gamble.

However, there were also other competence-related reasons for the fall of Sonera. One of them was that different stakeholders had different views about the goals of the company. The owner, the state of Finland, had both requirements for providing national telecommunication services (e.g. Liikenne- ja viestintäministeriö 2000) and the requirements for cashing in the company to pay off the national debts (Financial Times 15.10.1999). Peloton (2003) has claimed that several managers' main organizational goal was to increase the personal wealth. In any case the official goal of the executives and the board was to grow Sonera into a global communications operator and vendor of content services (Sonera 2001). Most likely the goal of some employees' was to build the company into a safe, long-term employer that would be able to offer a competitive salary and positive working environment.

Because organizational competence was defined as being the internal capability to reach defined goals, the competence of Sonera was different depending on the stakeholders' goals. Sonera had good competence in offering national telecommunications services based on long experience in a competitive business environment (Marttila 2002). Sonera had practically no experience in increasing the stock valuation of the company; the company had only been listed for a short time. And in any case the valuation is not a competence factor, but an environmental factor, because it is not decided by the organization itself.

Despite its claims, Sonera had very limited experience in international business management. The company had operated in several national markets, but it can not be claimed that they would have been the most competitive national markets in the world (e.g. the Baltic States, Hungary, Turkey, Russia, Lebanon, with USA being the big exception) or that they would have created any competence in working in a global business environment. The term "multi-local" was a closer definition to Sonera's international experience. In addition, Sonera was definitely not one focused company, but a portfolio of several fairly independent businesses working under the same brand name (see, for instance, the business division –structure in the annual reports (Sonera 2000, 2001)). Thus the subject-matter competence differed from business area to business area.

Because of these and other similar reasons it was very difficult to know what was spoken about when the competence of Sonera was spoken about. Was the competence referring to the technical competencies, and if so, the technical competence in which business area? Or was it referring to the competencies required in international business management, or national marketing competencies, or general knowledge of multi-local mobile phone markets, or the ways in which the stock valuation could be affected? The contents of the concept of organizational competence were defined differently for the different goals of the

stakeholders, and the use of similar terminology for discussing different contents of the concept created constant confusion. This was one of the reasons for the fall of Sonera – several studies (e.g. Joyce et al. 2003, Nijhof et al. 1998) have shown that the better common understanding of the guiding principles the better the chance for success.

There were probably other competence-related reasons for the fall of Sonera. It could be asked whether the organizational culture had a positive effect on the organizational competence. Did the employees really have as much individual-based competence as had been claimed? Did the company possess enough financial assets to reach the strategic goals in the first place – a question that the management was concerned about (Financial Times 2.11.1999, Relander 1998)? Was the company able to learn new business models quickly enough in a very dynamic business environment? However, since the goal is to understand the contents of the concept of organizational competence, and not the history of Sonera, the presented two problems give us enough new insights into the concept. The earlier discussed use-cases and the evidence presented in the attributes-section have already shown the importance of the other possible aspects.

The discussion of Sonera shows us how strongly the contents of the concept of organizational competence are tied to the external environment. Changes beyond an organization's capabilities affect the organization's chances of success. On the other hand, we can also see the differences in the understanding of the contents of the concept. The term was the same, but the contents of the concept that the term referred to differed, i.e., the concept was dynamic between the situations of different people. Each stakeholder truly discussed the competence of the organization, but still everyone discussed a somewhat different concept.

4.2.4   Smaller cases

The previous cases have provided us with an important understanding of the use-situations of the concept of organizational competence. Similar cases can be found in multitude in managerial and consultative literature. If the reader thinks of the presented situations in the context of organizational competence it is simple to see the dynamics of the situations. In the following some smaller case-examples are provided to illustrate the different possibilities.

The situation between war and peace changes the competence requirements of the military organizations enormously. In peacetime, the goal is to train people, run the bureaucracy and cut costs as much as possible. In wartime the goal is to win the war. Kendall (1982) has collected an illustrative discussion of problems created when the competence is mismatched in the military as the country enters a war. What is important in these cases is that the organization's competence is not configured according to the new situation. The reason for Luftwaffe's success on the Eastern Front in the 1941 was not only due to the individual capabilities of the pilots, but also because the Soviet air force was unable to change their peacetime manners (Franks 1999).

The long-term success of the Walt Disney Corporation is based on two key ideas. The first one is that the primary goal of any actions is "to get the kid to

smile" (Collins 2001, p. 270). The second one is to understand that kids smile at different things in different times and different cultures. Disney has always been able to move on to the next area; from cartoons to movies, from movies to TV, from TV to amusement parks, from parks into cruise ships, etc. (Collins 2001). In the context of organizational competence this means that Disney has been focusing its competence based on the situation at hand, in order to accomplish the defined task.

McKenzie (2001, pp. 157-158) presents the case of the best ranking Cadillac dealer in the USA. The businesses of "Cadillac Jack" have had the highest sales of all the Cadillac dealerships in the USA in 8 out of 10 years as well as the highest customer satisfaction readings. McKenzie tells that Cadillac Jack's companies do not so much sell cars as solve the customer's problems. Cadillac Jack even calls himself the transportation specialist instead of a car dealer. In the competence context his case is relatively simple. Cadillac Jack uses the competence factors available in his company (new and used cars, rental services, maintenance, spare parts, etc.) to find solutions to situational problems. Since he has not defined his company as being only a sales office, but a company that takes care of personal transportation needs, the customers know who to contact with their problems. (McKenzie 2001).

R. J. Reynolds was a major player in the global tobacco industry. However, the management of the company was not interested in the tobacco industry as such, but only as a means to make money (Collins 2001). The goal of the management changed from running the business into increasing their personal wealth through different option-schemes, *etc*. (Burrough and Helyar 1991). And because the goal was to increase personal wealth, the focus of the company started to wander, finally including practically anything to the business portfolio (Burrough and Helyar 1991, Business Week 13.11.1978, Forbes 1.12.1971). R. J. Reynolds was merged with another company in 1989 after performing far worse than the main competitor Philip Morris. If the situation is looked at from the organizational competence point of view it becomes clear that the organization tried to enter business areas where it did not have the competence attributes required. The business areas themselves could have been interesting (Burrough and Helyar 1991), but the management and the company that took over them was the wrong one. The company thus did not have the right competence configuration for the situation.

Similar use-situations could be presented in multitude. However, what they all come down to is that the organizations that have been successful have been able to use the right competences in the right situation; similarly the unsuccessful ones did not have or could not configure their competences according to the situation. In other words, the continuous interaction of the organization with its environment has created situations, in which the organization has had to find and implement the correct competence configuration.

4.3   The dynamics of organizational competence

The presented cases have presented us with several use-cases of the concept of organizational competence. The examples have at least one other thing in common in addition to situation dependency: the concept of organizational competence is dynamic. Today's organizations live in a continuously changing environment and must be able to change internally as well (Anttila and Vakkuri 1997, Borman et al. 1997, Childress and Senn 1999, Hamel 1998, Handy 1999, Kirjavainen and Laakso-Manninen 2000). These changes naturally reflect the concept of organizational competence as well.

To understand the contents of the concept of organizational competence requires us to understand the dynamic elements of the concept. The presented cases have contained several dynamic aspects, and not all of them are related to the dynamism of the concept. To improve the understanding of the studied concept these aspects have to be shown before advancing to the discussion on the real dynamism of the concept of organizational competence. Otherwise it would be easy to mix the dynamism of the concept with other dynamic elements related to the subject.

4.3.1   Dynamic aspects that are not dynamism of the concept

It is natural that competence, environment and competence requirements change over time. This is evident. It is also evident that these changes happen over place as well. A multi-national corporation has a different set of attributes in use in different parts of the world at the same time. For example, it is probable that not all the sales people share exactly the same individual-based competencies in the same corporation. Due to this the competence sets a corporation is able to use in two simultaneous situations but space-separated contexts are different. There may naturally be other similar physical or social drives as well and a detailed study about them could be an interesting research item.

However, discussing change drives is not most relevant when studying the concept of organizational competence. From the conceptual point of view what is more important than understanding the drives of change is understanding the possible dynamics of the concept. The drives may help to understand these, but they may also be understood by analyzing the already presented use-situations of the concept. Time and space are typical examples of the drives that belong to the natural environment. They definitely have an effect on competence, but they are not part of the concept of organizational competence. Time and space are potentially the same for every organization. Thus they should be considered only as external factors affecting the competence in the study of the contents of the concept of organizational competence.

There are several dynamical aspects in the attributes of the concept of organizational competence. These aspects may be combined to a very general notion: every attribute-related quality may change whenever. People may get sick; processes may get outdated; competition may toughen; factories may burn… The

list of examples is endless. Danneels (2002), and Eisenhardt and Martin (2000) have shown that the change is inevitable in product development. Floyd and Lane (2000), and Teece et al. (1997) have argued that organizations must both exploit existing competencies and constantly explore new ones in to be able to renew at a strategic level. Happonen (2002) has argued that practically any organizational attribute related to research and development is a possible subject of change.

However, changes in attributes and their relation are not within the scope of this study. It is an important subject, but it does not consider the dynamism of the concept itself. It is a natural fact that in a set of an unlimited number of attributes, changes take place constantly, but because the contents of the concept of organizational competence were not defined as being a certain set of attributes, these changes do not affect the concept itself. The dynamism of the attributes and their relations could be an interesting research item in the future, though.

Another aspect that could be considered to be dynamism of the concept of organizational competence is people's perception of competence, and the perception of the needed competence. An organization has attributes, which are in some state in relation to the existing situation; they are epistemologically true (Searle 1995). If we think of an individual stakeholder, she most likely has a personal view about the state of these attributes. The personal view may be based on some objective assessment or just personal opinions, but it nevertheless does exist. Lee-Kelley (2002) showed that even in a fairly controlled situation of an individual project the project manager's perception of the situation does not necessarily fit in with reality due to constant unexpected changes.

Is, then, the presented idea a dynamic aspect of the concept of organizational competence? No, it is not. As long as the perception-reality discussion is focused on attributes, their relations and their co-operation with the environment it is not a discussion on the dynamism of the concept of organizational competence. However, it offers an interesting area to study: what are the effects of the differences between the perception and reality of the competence attributes?

4.3.2 The dynamism of the concept of organizational competence

The presented use-situations have also presented the dynamism of the concept of organizational competence: the contents of the concept differ constantly, and are situation-dependent. Competence is only meaningful in relation to situation. The situation defines the use-contents of the concept of organizational competence. All of the presented use-situations support the understanding of the situation-dependency. Thus the earlier claim that the use-cases would have shown two separate factors of organizational competence, i.e., the situation-dependency and the dynamic nature, was actually wrong. The dynamism of the concept comes exactly from the situation-dependent nature of organizational competence.

Competence is always defined relatively – as a relation between the state of the competence attributes and the situation-specific requirements of the organization. In addition to the presented use-cases, several publications (e.g. Anttila and Vakkuri 1997, Etzioni 1964, Porter 1980, Teece et al. 1997) have noted that competence should always be considered in relation to the situation; in these

cases especially in relation to the situation created by the environment and the organization's goals. The state of organizational competence is thus similar to any similar concept: valuable in one context but of very little value in the next (Saariluoma 1997, p. 16).

The relative requirements of an organization's competence may rise from two backgrounds: either from inside or from outside of the organization. Naturally the competence requirements in the real-world cases may be a combination of these two aspects. For example, if one looks at the competence requirements of a commercial hospital, the management and the owners have a vision of the future of the hospital, and the regulators and other environmental aspects define the requirements and limitations of the possibilities.

The strategic process of the organization formulates the goal and the actions needed to reach the defined goal (e.g. Hamel and Prahalad 1994, Mintzberg et al. 1998, Porter 1980, 1985). The requirements may change quickly if the management sees that the strategy should be changed – and thus the state of organizational competence may change as quickly, because the goal has changed. However, Durand (1997) has noted that if a competent organization is defined as one that reaches the goals that it sets itself, each company that sets itself low goals would be competent. Thus the achieved results should always be compared to external requirements as well.

The environment constantly defines the use-needs of the concept. The environment sets the requirements for an organization both from the natural and the human aspects. The importance of the natural aspects may rise if there are sudden changes in the natural environment, as, for example, has lately been the case in electrical blackouts. Floods and hurricanes can have enormous effects on local organizations (e.g. Holland 1988). The effects can be positive or negative depending on the organization's capabilities to respond to the changes.

Human aspects of the environment may be considered to create more common changes in organizational competence requirements. The presented use-cases have shown what a tremendous effect a change in the business environment can do. Other examples can be found in multitude. If the competition changes because a new competitor enters the market area the requirements for organizational competence change. If fashion trends change, clothing manufacturers may have gaps in competence. If the economic situation changes, the customers may need different types of services, or value the old services based on different scale. For instance, there may be a cheap restaurant located in an area where a lot of young families live. As the families grow older, their requirements towards the restaurant services may change, and the traditional concept of the local restaurant needs to be revised.

As the use-case of Sonera has demonstrated, different stakeholders also have an effect on the contents of the concept of organizational competence. Because stakeholders may define the goal of an organization differently, the competence of the organization differs for different stakeholders. Politicians had a different understanding of the goal of Sonera when compared to the managers at Sonera, who again had a different understanding of the goals than the employees, and

even different employee groups had different goals. Thus when competence was evaluated and discussed it was difficult to know what was really being discussed.

The differences in the use-cases offer a reason for the existence of the large number of approaches related to organizational competence. Each one of the earlier presented competence-related approaches (intellectual capital management, individual competencies, core competence, learning organizations, strategic human resource management, and knowledge management) has certain use-situations in which they will flourish. Similarly these approaches have some situations for which they are not planned to be used, and this has created the confusion about the use of the concept. Each context in which these approaches have been used has created different contents for the concept of organizational competence. Because the approaches have been situation specific it has created difficulties in implementing them in different situations (Hoffman 1999).

As an example, we could use the individual-based core competency approach (Boyatzis 1982) in developing an organization. It could be very effective, but the other, non-people –related, organizational qualities would not be included in the development. And if the organization's key problem were immediate financing, the development of individuals would probably not be the most efficient method of operation. As another example we could use Hamel's and Prahalad's (1994) core competence approach in developing organizational competence as practically was done at Kimberly-Clark over 20 years prior to the famous book. But if core competence is something where an organization is already at a high level why should that be the only key area of development? How about the ones where an organization is desperately lagging behind the peer group?

The conclusion of the dynamism of the concept of organizational competence is easy to define: organizational competence is always situation-specific. The situation is set by internal and/or external requirements, and the definition of the goal of the situation is stakeholder-specific.

4.4   The full notion of dynamic organizational competence

The thesis of this study as presented in the first chapter was to deliver a holistic theoretical concept for organizational competence. The previous discussion has opened several points of view of this concept. This chapter will concentrate the presented ideas in a holistic definition. The key findings about the concept of organizational competence are found in the following list:

1.   The expression organizational competence refers to an organization's internal attributes that enable it to reach its targets.
2.   The number of attributes of organizational competence is large – theoretically the number is unlimited.
3.   All of the attributes of total organizational competence can be classified under three separate super-attributes: assets, individuals' competence and structural competence.

4. The organization's environment is not an attribute of organizational competence, but it has a constant effect on competence attributes and competence requirements.
5. Different stakeholders have different goals for organizations, and thus organizational competence is stakeholder-specific.
6. The use of the concept of organizational competence is context specific; thus the required set of competences depends dynamically on the situation.

By combining the list into one sentence we can define what the concept of organizational competence refers to:

When we speak about organizational competence, we speak about an organization's internal capability to reach stakeholder-specific situation-dependent goals, where the capability consists of the situation-specific combination of all the possible individual-based, structure-based and asset -based attributes directly manageable by the organization and available to the organization in the situation.

These findings can be claimed to be trivial and simple. However, they form a solid stance on which the concept can be studied further. The findings have been defined in such a way that they are true and meaningful in every type of organization, from businesses to third sector, from local public organizations to global multinationals. However, the reader should be aware that reading only these key findings will not give the reader a good understanding of the studied concept. All the earlier discussion has been aimed at increasing the reader's understanding about the concept.

There may be, and most likely are, some other facts that can be said about the contents of the concept of organizational competence. However, finding them would require some evidence-based research, making new hypotheses and testing them for their validity. Using the reconstructive technique has not created any new data *per se*; it has helped future researchers to base their research on something solid and less intuitive.

In the beginning of the study competence measurement and management were excluded from the scope of the study. However, now that the situation-specific nature of the contents of the concept have been found out, it is possible to discuss briefly its use by managers. Managers' responsibilities in managing organizational competence are simple to define. They need to:

- understand the situation which the organization is in, or have the "helicopter-view", the ability to rise above the situation and be able to analyze it, as Handy (1999) has defined,
- understand the organization's situation-specific competence configuration,
- understand how the competence configuration can be affected, and
- be able to take the advantage of organizational competence in the situation.

How these requirements will be answered is not, thankfully, in the scope of this research. Some answers can be found from the available managerial literature, both consultant-based and in the more scientific approaches.

5   EPILOGUE

This study started with a discussion of the problematic notion of organizational competence, and why it should be analyzed by using the cognitive science related method of foundational analysis (Saariluoma 1997). Some sub-sets of the concept of dynamic organizational competence have been studied under different disciplines, such as organizational science, business management science and people-related fields of science. Doesn't adding another scientific approach only blur the concept?

After using foundational analysis to study the contents of the concept of dynamic organizational competence it has become evident that foundational analysis has been the right tool to use. The work has increased the understanding of the concept; unfolded some "truths" behind it. The approach has provided the opportunity to study the concept from several angles, holistically over different fields of science. The previous approaches have been successful in answering the specific questions they have been designed to answer, but they have not focused on studying the whole contents of this gigantic concept. Foundational analysis has been able to lift the veil from the whole phenomenon, and create a solid stance for the concept to be studied in the future.

The main advantage of foundational analysis is that it stresses the importance of setting and studying the theoretical framework, and allows for the fact that it is often affected by some intuitive idea rising from the experience of the researcher, and making it possible to study this intuitive pre-theory to introduce it into scientific discussion. If dynamic organizational competence had been studied only by using the basic hypothesis-test –approach, the stance for the whole concept could not have been created, only a list of studies about some attributes of dynamic organizational competence. The width of the concept with its enormous number of possible attributes, the environmental effects and their dynamical elements would have made this approach impossible. Only a fraction of the whole

concept could have been studied at a time, and the "big picture" would have stayed in the dark, hidden by an infinite number of smaller elements.

Scholars can now use the presented concept, and fit more practical studies into the framework of the presented approach. Foundational analysis has supported the creation of a neutral and holistic concept that is appropriate to use in different scientific areas and in several practical cases.

It is now simpler to gather some new empirical evidence, and study it in the presented framework in order to increase the understanding of the ways of understanding the organizational situation, or the ways to assess the competence available in an organization, or the ways to increase and manage the overall competence portfolio. These and other similar questions should be answered based on empirical studies gathering new evidence about the behavior of organizations in different situations.

YHTEENVETO

Perusteanalyysi organisaation kompetenssin käsitteestä

Organisaation kompetenssi eli sen sisäinen kyvykkyys saavuttaa tavoitteita on laajalti käytetty käsite sekä tieteellisissä tutkimuksissa että käytännön elämässä. Koska käsitettä käytetään paljon, on ollut erikoista huomata, että sitä ei ole juurikaan tieteellisesti määritelty, ja vaikka käsite olisikin asiayhteydessä määritelty, niin sen sisältö vaihtelee huomattavasti. Keskustelun selkeyttämiseksi ja tämän monipuolisen käsitteen sisällön ymmärtämiseksi on käsitteelle tehty perusteanalyysi. Näin ollen kyseessä on perusteanalyyttinen tutkimus useassa eri tieteenalassa käytetylle käsitteelle, eikä johonkin yksittäiseen tieteenalaan, esimerkiksi liiketaloustieteeseen, perustuva tutkimus.

Perusteanalyysi on kognitiotieteeseen perustuva tutkimusmetodiikka, jonka ajatuksen Wittgenstein on esitellyt vuonna 1953 ja jota Saariluoma on kehittänyt edelleen konkreettisemmaksi toimintamalliksi. Perusteanalyysissä pyritään löytämään tutkitun käsitteen tieteelliset rajat, ts. selvittämään, mihin reaalimaailman ilmiöihin kyseinen käsite fundamentaalisesti perustuu. Tavoitteena on siis luoda käsitys siitä perustasta, jolla kaikki kyseistä käsitettä käyttävät lähestymistavat voivat seisoa.

Käytetyn metodiikan mukaisesti väitöskirjassa on pyritty löytämään aiemmasta tutkimuksesta sekä käytännön tilanteista riittävästi käsitteen keskeisiä attribuutteja, jotta niiden perusteella voidaan parantaa ymmärrystä käsitteen sisäisestä rakenteesta. Useiden käytännön esimerkkien lisäksi työssä käytetään lähtökohtina immateriaalisen pääoman hallitsemista, ydinosaamisten johtamista, tietämyksen hallintaa, oppivien organisaatioiden lähestymistapaa, yksittäisten henkilöiden kyvykkyysteoriaa, strategista henkilöstöjohtamista sekä suorituskyvyn johtamista.

Attribuuttien ja niiden sisäisen rakenteen avulla aikaansaatua käsitettä testataan käyttötilanteissa, jotta olisi mahdollista ymmärtää käsitteen dynaamisia ominaisuuksia. Attribuuttien, käsitteen sisäisen rakenteen ja dynamiikan perusteella esitellään väitöskirjassa laaja-alainen määritelmä käsitteelle "organisaation kompetenssi", ja sen lisäksi kuusi tutkimuksessa tehtyä perushavaintoa. Esitellyt perushavainnot organisaation kompetenssin käsitteestä ovat seuraavat:

1. Käsite "organisaation kompetenssi" viittaa organisaation sisäisiin attribuutteihin, joiden avulla se voi saavuttaa tavoitteensa.
2. Näiden organisaation sisäisten attribuuttien määrä on suuri – teoreettisesti niitä on rajattomasti.
3. Kaikki attribuutit voidaan luokitella kolmen superattribuutin alle: yksittäisiin henkilöihin, organisaation rakenteeseen ja omaisuuteen perustuviin attribuutteihin.
4. Organisaation ympäristö ei ole kompetenssiattribuutti, mutta on erittäin tärkeä tekijä, koska se on jatkuvassa kosketuksessa kompetenssiattribuutteihin.

5. Eri sidosryhmillä on erilaisia tavoitteita organisaatioille, joten organisaation kompetenssi riippuu sen arvioijan tavoitteista.

6. Organisaation kompetenssin käyttö on tilannesidonnaista, joten tarvittavat organisaation kompetenssiattribuutit riippuvat kulloisestakin tilanteesta.

Organisaation kompetenssin määritelmäksi tutkimuksessa löydettiin seuraava: *Organisaation kompetenssilla tarkoitetaan sen sisäistä kykyä saavuttaa tarkastelijasta riippuvaisia tilannesidonnaisia tavoitteita. Organisaation sisäinen kyvykkyys muodostuu tilannesidonnaisesta kombinaatiosta yksittäisiin henkilöihin, organisaation rakenteeseen ja omaisuuteen perustuvista organisaation hallitsemista attribuuteista, jotka ovat organisaation saatavilla tilanteessa.* On kuitenkin huomattava, että perusteanalyysin mukaisesti käsitteen määrittelee työssä esitetty attribuutti-pohjainen kokonaiskeskustelu eivätkä pelkästään edellä mainitut kaksi virkettä.

Työssä esitelty määritelmä ja sen perushavainnot ovat erittäin laajoja. Niitä ei kuitenkaan voi merkittävästi tarkentaa, koska tavoitteena on perusteanalyysin mukaisesti löytää sellainen tieteellisestä määritelty perusta, jonka päälle kaikki käytössä olevat lähestymistavat sopivat. Tutkimuksessa tehdyn käsitteenmäärittelyn avulla on helppo huomata lähdemateriaalina käytettyjen lähestymistapojen olevan sinänsä oikeita ja käyttökelpoisia, mutta tilannesidonnaisia, ja tästä johtuen vaikeita yleistää kaikkiin mahdollisiin tilanteisiin. Nyt selvennettyä käsitettä on jatkossa helppo käyttää käytännön tilanteiden tutkimuksessa.

Varsinaisen tavoitteensa eli "organisaation kompetenssi" -käsitteen selvittämisen lisäksi tutkimus on myös osoittanut perusteanalyysin käyttökelpoisuuden tieteessä käytetyn konseptin perusteiden määrittelyssä. Perusteanalyyttinen lähestymistapa ongelmaan mahdollisti käsitteen holistisen tutkimuksen useista eri tieteenaloista ja käytännön tilanteista kerätyn aineiston pohjalta.

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