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KNOWLEDGE MANAGEMENT AND ORGANIZATIONAL
LEARNING, AS THE SUCCESS FACTOR OF SMALL AND
MEDIUM-SIZE ENTERPRISES

Doctoral Thesis

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1. Aims of the Dissertation

A new society seems to be forming at the beginning of the 21st century. Scientists use different names for it. Toffler calls it the third wave; Masuda refers to it as the information-society; Drucker as the post capitalist era; Savage says knowledge age, and Naisbitt calls it “the knowledge society,” (Sveiby 2001, 81.) Although all these expressions from famous experts were born before the year 2000, they already anticipated the change in our world and society. Further we will call this new type of society like Naisbitt **knowledge society**. It will characterize the developed western societies in the 21st century in the long run. The knowledge-centered world is taking over instead of the industry centered world. This fact is proved by the increasing number of “knowledge workers” compared to the number employed by industry. This economy does not always behave according to the rules of classical economics and business. Knowledge became a very important competition factor, a critical resource. Knowledge capital is becoming important in many fields than other material capital factors. Our enterprises have to face great challenges nowadays to compete with all participants in the world market.

According to Robert Fogel, a Nobel Prize winning American economist, today intellectual production is taking over, while the significant part of economics is mainly about manufacturing and physical production. Since the criticism of Fogel, many new terms have become familiar in Hungary, showing a growing awareness of the importance of learning and knowledge in professional life.

Some of them are:

- **Knowledge intensive organizations**, as enterprises needing new kinds of management philosophy.
- **Organizational learning**, as the new approach of changing processes of organizations. Garvin¹ says a learning organization has abilities to change its behaviour, which is necessary for gaining and applying new knowledge and abilities, according to its needs. Anderson² thinks that the learning organization is very

¹ Garvin, D. A. : (1973) “Building a Learning Organization,” *Harvard Business Review*, July-August pp 78-91

² Anderson, C. “Values-Based Management,” *Academy of Management Executive*, No 4 pp. 25-46

important from the strategic point of view, because it makes possible the creative basis for the strategy of change. This concept contrasts totally with the hidebound organizational theory, which wants to keep the status quo at any price.³ Baldwin, Danielson and Wiggenhorn think that “in the dynamically changing, globalized and technical environment, the organizational reform depends on the learning ability.”⁴

- **knowledge based approach of organizations**, as a theoretical approach giving new answers to issues of organizational theory (aims, special features, market of organizations, relation between individual and organization, relation among organizations).

Nonaka and Takeuchi say “knowledge – in contrast to information – is about beliefs and opinions. The organizing, selecting, and judging power of knowledge comes at least so much from beliefs and values, as it results from information and logic.

Sveiby connects competence to the notion of human knowledge as well, which he divides into 5 interdependent factors:

- explicit knowledge, (the knowledge of facts, we acquire it mostly via information, often during education).
- skill, the art of knowing “how” which can be obtained during practice;
- experience, arising while thinking about past successes and failures;
- value judgments, helping to find the right way; they work as a conscious and unconscious filter in the individual learning process.
- social environment is built out of the relations of the individuals, in an environment and culture is transferred by tradition.

From the viewpoint of my research, the competences expected or lacked by employers had an important role.

³ Poór József: (2005) “Development Tendencies of Management Consulting,” *Akadémiai Kiadó*, Budapest 202- 203.oldal

⁴ Baldwin-Danielson-Wiggenhorn:[1997] “The Evolution of Learning Strategies in Organizations: From Employee Development to Business Redefinition,” *Academy of Management Executive*. 47-57

Knowledge is not static; it is always on the move, but there is a compulsory basic level. It is important for students to acquire a stable basis for the future. During the interviews, the knowledge usable in practice was mentioned as one of the most important factors.

We saw that the process of development of individual knowledge is not an easy process. We saw the importance tacit knowledge has in competitiveness, but we also realized that it is not easy to be formalized and communicated. That is why individual knowledge does not turn easily into social knowledge. According to the well known statement of James Brian Quinn quoted by the authors Nonaka-Takeuchi “those intellectual goods (technical know-how, planning of products, marketing, understanding of consumers expectations, individual creativity and innovation), which increase the value of the products and services, are all knowledge-based.

Citing Andrea Bencsik :“Learning organizations give the basic pillar, which is the most important condition of the competitive operation of knowledge-based organizations. Organizational learning is based on individual learning. The willingness to learn of an individual is strongly connected with the satisfaction of the employees. Applying the principles of knowledge management in company management means to improve all these factors.”

Organizational learning:

- a) increases the ability of the organization to achieve strategic aims (to achieve certain organizational aims),
- b) enhances the ability of the organization to adapt (the possibility of changing the strategic aims), and
- c) ensures the permanent strategic competitive advantage based on human resources as a strategic factor. (Bakacsi)

“Organizations will be forced to learn, change and recreate themselves permanently ..., the same is true for individuals.” (Kotter) All these mean learning for the whole life.

The research focused not only on individual learning, but also on organizational learning, and on the issue whether the culture in the organization supports or blocks the transfer of knowledge.

Spending several decades of my life as an active manager, I always had the efficient operation of the company in my mind and my actions. I might not have formulated it, but I believed that the collective knowledge of the individuals and of the community formed by the individuals, of the team is the determining factor of success. I am still proud that the management of the Gardénia lace curtain factory, (where I was the general manager), formed a very successful team. Later on many of them developed successfully as entrepreneurs, or managers using their former experiences and knowledge, as shown by case studies about them. As a university lecturer, I looked for a research topic connecting to successful management. One of the determining factors of this success is to identify and handle the organizational knowledge of the company, new knowledge input into the organization, internal and external learning, and developing a new way of utilization of the organization's knowledge. Joining the research at the Marketing and Management Department of Széchenyi University, I started to deal with knowledge management, and with issues of knowledge transfer and organizational learning.

In order to keep the competitiveness of their organization, senior managers have to be aware of the fact that they can only guarantee the success of their own company if they accept the attitude of "lifelong learning" for themselves, for their organization and for their human resources.⁵ They have to improve all 3 skills: professional, conception and human relations skills. To improve professional knowledge and the ability of creating concepts is easier than to change human behaviour and attitudes. ⁶

The resources of the knowledge centred world are inexhaustible in contrast to other resources. They grow by sharing and application. In our changing world, while struggling against the economic crisis, an organization must deal with knowledge management that organizes shares and applies knowledge efficiently. Ignoring it could lead to failure of a company. The first knowledge parks were formed in the 1980's in developed and wealthy countries. Their successful operation drew the attention to the great value creating potential of intellectual capital. The principles of reasonable management of knowledge came into prominence through the knowledge industry. According to the survey of the

⁵ Bencsik Andrea: [2007]:A jó pap és az üzleti stratégia Tudástőke Konferenciák 1. sz. hírlevél 2. cikk

⁶ Dr. Gyökér Irén: Menedzsment Kg oktatási segédanyag

Davos World Economic Forum, “*The Nations’ CEOs Look to the Future*” managers have become interested in improving knowledge management after the increase of globalization.

It is important to learn how our Hungarian economic organizations can meet the new requirements, whether the creating, sharing and managing of knowledge are parts of their every day life, and how companies can help individual and organizational learning. I examined the small and medium size enterprises as a target group, because for them it is of a special importance to improve their position using knowledge, and to increase their intellectual capital. In an announcement about the implementation of Lisbon Program of the European Union there is the following: “If Europe wishes to preserve its social model, then it needs a more intensive economic growth, more new companies, more investments in the field of innovation, and more small and medium size enterprises having a high growing potential.”

2. Antecedents of the research

There were three earlier research studies at the Department of Marketing and Management of Széchenyi István University before this research of my dissertation, partly in similar topics, but with a significantly different focus. The first research was the “*Success Research*” by Dr. Károly Rab and Dr. József Szabó. It analyzed the local successful small and medium size enterprises using deep interviews. The aim of the researchers was to reveal the factors influencing the chances for success of enterprises. The interviews proved that managers have a determining role in the company’s life, and the ability of learning has a strong connection with success. Ilona Papp focused on small and medium size enterprises in her research. The knowledge capital was her focus point as the most important source of success. The research proved that knowledge and knowledge capital have a strategic role in the life of small and medium size enterprises, and there are some Hungarian enterprises forming the Hungarian “Silicon Valley,” which mainly rely on their knowledge capital during their work. The third research was done by Vendel Lőre, who analyzed small and medium size enterprises not only from the aspect of their knowledge capital but from the aspect of knowledge management as well. The

existence of such small and medium size enterprises in Hungary was proved by this research, that those who manage their knowledge capital in an active way and are able to reach economic success this way. This research can also be considered as a continuation of these analyses, where the main focus is on knowledge management and on the organizational culture supporting this knowledge management.

3. Aims of the Research

Based on my management and past research experiences, I think the most important factor of knowledge management is the human aspect. Even sources of non-fiction literature confirm that knowledge management can be supported by technical conditions and informatics, but its success depends on the individual. Knowledge cannot be separated from the person, the organizational culture, the style of the management, competences and attitudes which significantly influence it. Several successful and unsuccessful company examples show that individuals build the organizations and systems and their efficiency is determined by the human side. This elemental experience turned my attention towards the differences in management style and culture of knowledge management.

Knowledge management is often mentioned only in connection with big organizations. It is really true that the most innovative big companies were the cradle of knowledge management. According to my experiences, small and medium size enterprises carried out knowledge management activities in the past few years without even being aware of it. Of course it does not mean that these companies would have knowledge strategy or knowledge managers. It means only that they instinctively - in their own interest – developed methods to handle and improve knowledge in order to be and stay competitive. These instinctive learning forms can contain special knowledge repositories, systems of internal knowledge sharing, organizational cultural factors, management attitudes, or any other factor. I gave some examples in my study based on the deep interviews with Hungarian companies.

These companies do not call these methods “knowledge management.” The factors do not form a united system, but the elements of knowledge management do significantly appear in their activity and approach.

The focus of the primary research as the background of the dissertation was laid on the analysis of the “soft” organizational factors, because according to the literature and also to the author’s opinion, these factors have the most important role in the small and medium size company sector. The “soft” elements among the other elements influencing knowledge management are the **cultural elements** and the **style of management**. I had the chance to compare these factors based on small and medium size company examples of two countries. I used cultural, managerial and strategic characteristics of Hungarian for-profit companies connected to knowledge and learning, and similar data of Slovakian companies in my research. The survey covering the two countries allowed deeper study of the cultural elements of organizations. The study emphasizes the comparative character of the survey. I show the results which have significant deviation between the two countries. (There is a justified need to make the comparison with companies of more developed countries like Austria, but there was not enough time or resources to do it.)

The questionnaire was created in order to analyze the cultural elements on three different levels. The first level is the **macroeconomic level**, where the focus was laid on the features of national cultural elements of the two neighbouring countries, Slovakia and Hungary. The research asked if there is a difference between the need for knowledge and the practice of knowledge management of the Hungarian and Slovakian small and medium size companies. I also examined the deviation of the organizational cultural factors supporting knowledge in both countries.

The second level is the **medium level**, which is to analyze the influencing role of the organizations’ characters. The literature of knowledge management strongly focuses on this field. It analyses the effects of the organizational characters. The third level is the **individual level**, containing the level of human resources. This level searched the connections between the competences of human resources and knowledge management.

In almost every case, the literature uses the connection system of only one level from the three levels I use. The model I featured can be considered as new, because it is able to integrate the macroeconomic and macro cultural factors of the countries and the effects on microeconomic level into only one research. On each level the cultural characteristics mean the starting point of the model, because they determine the knowledge management practices of small and medium size enterprises. It is not only about cultural elements influencing knowledge management, as most of the research emphasizes this fact, but about the fact that the strength of internal knowledge creation, knowledge transfer and knowledge integration characteristic of small and medium size companies is determined by cultural elements.

4. Methodology of the Research

I based my work on a wide methodological basis. I used both primary and secondary research techniques.

I discovered the theoretical background and its correlations by collecting and adapting the comprehensive international and national literature. Using a multidisciplinary approach, the following topics were discovered: microeconomics, management, (knowledge-friendly organizational cultures, organizational learning, teamwork and group work) human resource management, especially the techniques of knowledge promotion, approaches and methods of knowledge transfer. Sometimes the question of competences has sociological and psychological aspects as well. In some cases, the possibilities of storage of knowledge using information technology also came to the front, although this study does not aim to deal with it. I used the reports of different research institutes for my work. I wish to highlight the documents of KSH (Central Institute of Statistics), KPMG, EUROSTAT, the World Economic Forum and the European Committee.

The primary research includes comprehensive experiences and much data on hand before the beginning of the research. The basic methodology for the research was to use the method of questionnaires. There was no need to make the regular methodological steps. It means I could leave the earlier qualitative examinations.

Former experiences enabled an enormously concentrated way of asking for information. It was possible to narrow the questions and to reduce the size of the questionnaire, which is a very important point when using surveys that people fill in themselves. It can decrease the proportion of “no-answers,” and it can help to get consistent and true answers.

There was a cover letter enclosed with the questionnaire giving information about the aims of research helping in the subjects to answer the questions. The cover page of the questionnaire contained the basic data of the enterprise. This page was separated from the other pages during the processing in order to maintain the anonymity of the enterprises.

The inquiry had four parts:

- the first part had questions about organizational culture and management style;
- the second had questions about learning and knowledge management;
- the third part was about competences expected by the enterprise;
- the fourth part was about the relation between higher education and the company taking part in the survey.

Most of the questions were closed questions. I used the five-grade Likert – scale and semantic differential scales. Because of the variety of sizes of the tested enterprises, I formulated the questions as simply as possible, and I tried to structure them in order to help in filling out the questionnaire. I used a simple structure. For the subjective elements I chose a 5 grade Likert scale, or 4 and 5 grade ranking scale to have an easy overview.

I considered the variables “operationalized” with Likert scales and ranking scales as variables with statistical scales. It is accepted in behaviour management research to treat items as variables with a high measurement level. These analyses offer wider statistical possibilities to discover complex relationship systems. I also used open questions in connection with competencies in order to discover the most frequent shortcomings.

The questionnaire was prepared in the Hungarian and in Slovakian languages. A sample questionnaire is enclosed in the appendix; (see Attachment No. 1.)

Since the structure of the questionnaire was the same for both countries, I fixed the data in one single database, significantly increasing the margin for the analysis.

I used the 16.0 version of SPSS software for the statistical analysis. My methodology applied analyzing techniques with one or more variables.

4.1 Characteristics of the Questionnaire Sample

The analysis of the database of the questionnaire gave the backbone of the dissertation's hypothesis system. The method for the sampling was the disproportional stratification, where the scaling criterion was the branch of industry. I used the branches of KSH for the classification, but sometimes I merged statistical branches because of the small numbers inside the groups. There were a significant number of questionnaires returned without the expected basic data of the company such as the number of employees and the industry. These questionnaires were not included in the database, because they would have distorted the analysis.

Table No. 1 Distribution of the elements of the sample

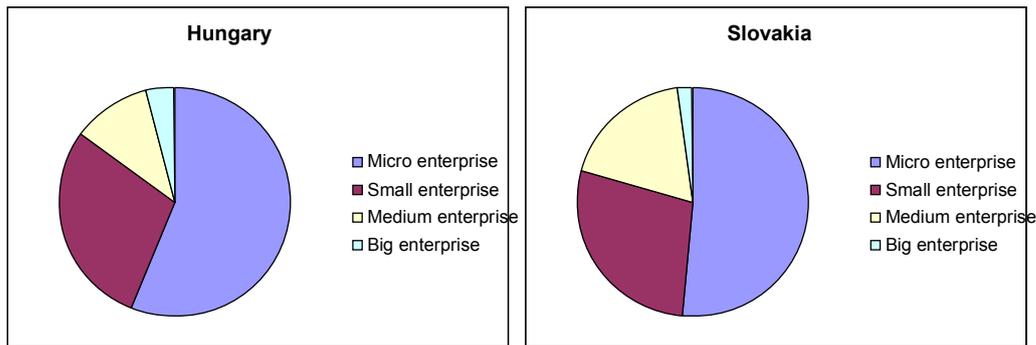
Hungary		Number of enterprises Branch of industry	Slovakia	
508			238	
Not weighted ratio(%)	Weighted ratio(%)		Not weighted ratio(%)	Weighted ratio(%)
4.5	3.4	Agriculture, fishing (A+B)	8.6	4.2
13.1	10.0	Construction industry (F)	10.4	7.0
11.2	8.8	Processing industry (C+D)	19.4	11.9
27.5	21.8	Trade (G)	27.5	35.2
8.6	4.6	Catering trade (H)	4.5	3.4
5.4	5.0	Transport, logistics (I)	7.2	6.9
7.9	31.7	Business consulting, real estate service (J+K)	8.6	26.0
2.2	3.6	Education (M)	0.5	0.6
1.1	3.6	Health and social services (N)	1.8	2.8
18.5	7.6	Other services(O)	11.7	2.0
Before 1990:	1990-'95:	Founding enterprises	Before 1990:	1990-'95:
12.9%	29.9%		4.0%	37.9%
1996-'05:	After 2005:		1996-'05:	After 2005:
47.6%	9.7%		47.0%	11.1%

Micro enterprise: 56.2%	Enterprise size category	Micro enterprise: 51.2%
Small enterprise: 28.9%		Small enterprise: 28.1%
Medium size enterprise: 11.0%		Medium size enterprise: 18.4%
Big enterprise: 3.9%		Big enterprise: 2%

Source: own design

After filtering the questionnaires filled in incorrectly, the data of 508 Hungarian and 238 Slovakian companies created the database. Although the element number of the sample is rather high, it was necessary to weight the sample based on industry because of the disproportional stratification. Table No.1 contains the most important basic characteristics of the sample and the extent of the weighting.

I used two kinds of factors to weight: in the starting position. I corrected the industry structure with the weights for both Slovakia and Hungary according to the real industrial structure.



In the second part of the analysis, I corrected the sample showing the distribution based on size categories as seen above so that the proportion of the Hungarian industry structure should appear for both countries (Hungary and Slovakia). Using this method, it is possible to filter the distortion from the results because of the different industry structures. The remaining differences can be traced back to two factors: differences in economics and business climate between the two countries, and the cultural, sociological, business management and other specialties of micro participants.

One focus was on the relationship between higher education and the small and medium size companies. I examined the demand side of the labour force of the small and medium size sector. In this part I analyzed the expectations towards professional employees of the companies. The content of the sample made it possible to compare the Hungarian and Slovakian answers, so I made this analysis with the help of the statistical methods

demonstrated earlier, and using the weights according to the Hungarian economic structure.

After closing the questionnaire analysis, to modulate the results I made follow up deep-interviews made with 10 Hungarian companies. (They are attached in the appendix of the dissertation). The conclusions from the interviews modulated the conclusions of the questionnaire-database, and complemented the result of the research with several follow-up recognitions.

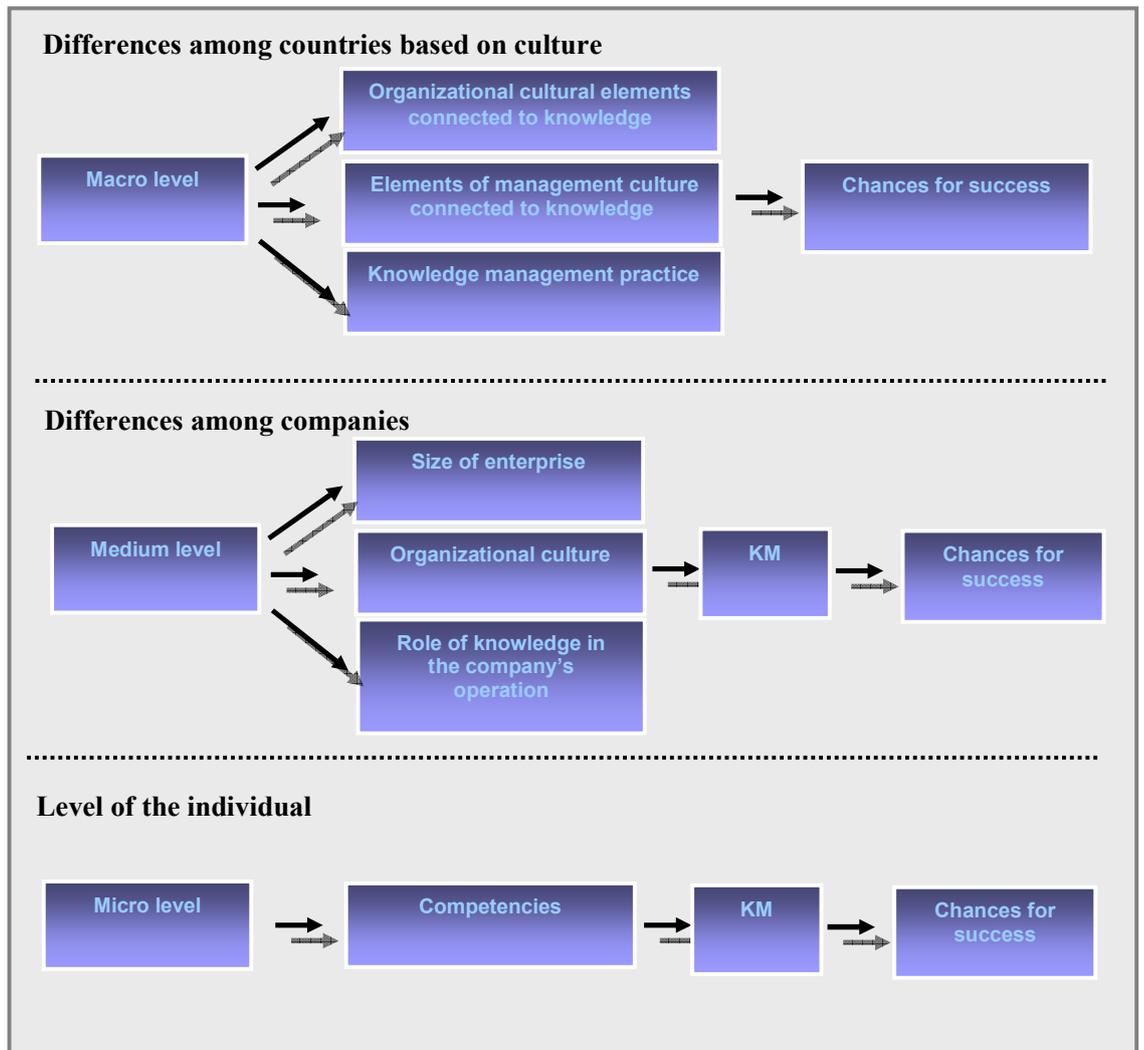
Because knowledge management, as a conscious practice is very young, there are only a few really successful Hungarian practical models. For the deep interviews I chose companies with only Hungarian owners, (with one exception), in Western-Transdanubia, which have already proved their success based on their economic results, on their growth, and they are recognized and valued by their communities. The selected companies belong to the category of small and medium size companies not to micro enterprises.

Connecting to the primary research, I surveyed the following about these companies:

- what they consider as knowledge,
- whether they have a declared knowledge management strategy,
- what is the atmosphere of the company like, how it helps to transfer the knowledge,
- what are the qualification of the managers and their fellow workers, what kind of abilities, competences are expected from the professional fellow workers and what are missing
- how much the atmosphere of the company helps or blocks learning
- which elements of knowledge management can be found there
- how they learn, (internal and external learning); I tried to detect what kind of a role knowledge handling, and knowledge management has in their success.

5. Basic Model of the Research

Diagram No. 1 Basic model of the research



Source: own design

Learning organizations are able to take up information quickly and selectively from outside and apply it appropriately to their own company. How it is done depends on the organizational culture. The correlation between the management, the staff and technique emerges. They cannot be considered independently from each other. The organizational culture and management style supporting learning have a determining role in connection to organizational learning. The most important questions of the questionnaire dealt with confidence, cooperation based on taking responsibility, about the open atmosphere and the constructive way of problem solving, and about learning supported by the

management. As a control, we also put in questions about hierarchical employer-employee relations, and about how regulated the scope of activities is. Confidence, open communication, and quick learning, are important factors facilitating the transfer of knowledge,. The support of the higher management, frequent teamwork, and the acceptance of learning at the company are management characteristics which support learning. The atmosphere at the company determines the motivation of the employees, and enables or blocks the formation of close personal connections, and the spontaneous cooperation among fellow workers.

We wished to know the internal and external elements of learning, its frequency, the applied individual or collective learning methods, and the employees' willingness to share knowledge. It has a great importance whether the company supports the learning intention of its employees with money or if there are organized internal or external training opportunities available at the company. Applying regular team-work and group creating techniques is the best way to transfer tacit knowledge among fellow workers.

The amount of time spent with learning can be important to judge the regularity of learning, , and also whether the efficiency of learning is measured.

On the individual level, we emphasized 16 attributes in the questionnaire among the essential determining features, competencies. During the selection I took into consideration that in the deep interviews each company, without exception, stressed the importance of the professional knowledge and experience of employees as the most important elements of human capital. In every former analysis the importance of language skills and computer technology received special attention as important knowledge elements. Out of individual competencies reliability, loyalty, and adaptability can help to create long lasting work relations. Teamwork can help knowledge transfer, so the talent for teamwork may have a significant role. Creativity, self-reliance and problem solving ability may have a great importance concerning new knowledge.

6. The System of Hypothesis

The focus of the hypothesis is on the variables of the organizational cultural and management style. The macro level examines the organizational cultural features of Slovakian and Hungarian companies concerning knowledge from several aspects. This approach shows how significantly knowledge management is embedded into national cultural characteristics.

The system of hypotheses of the basic model of the research is shown in Diagram No.2.

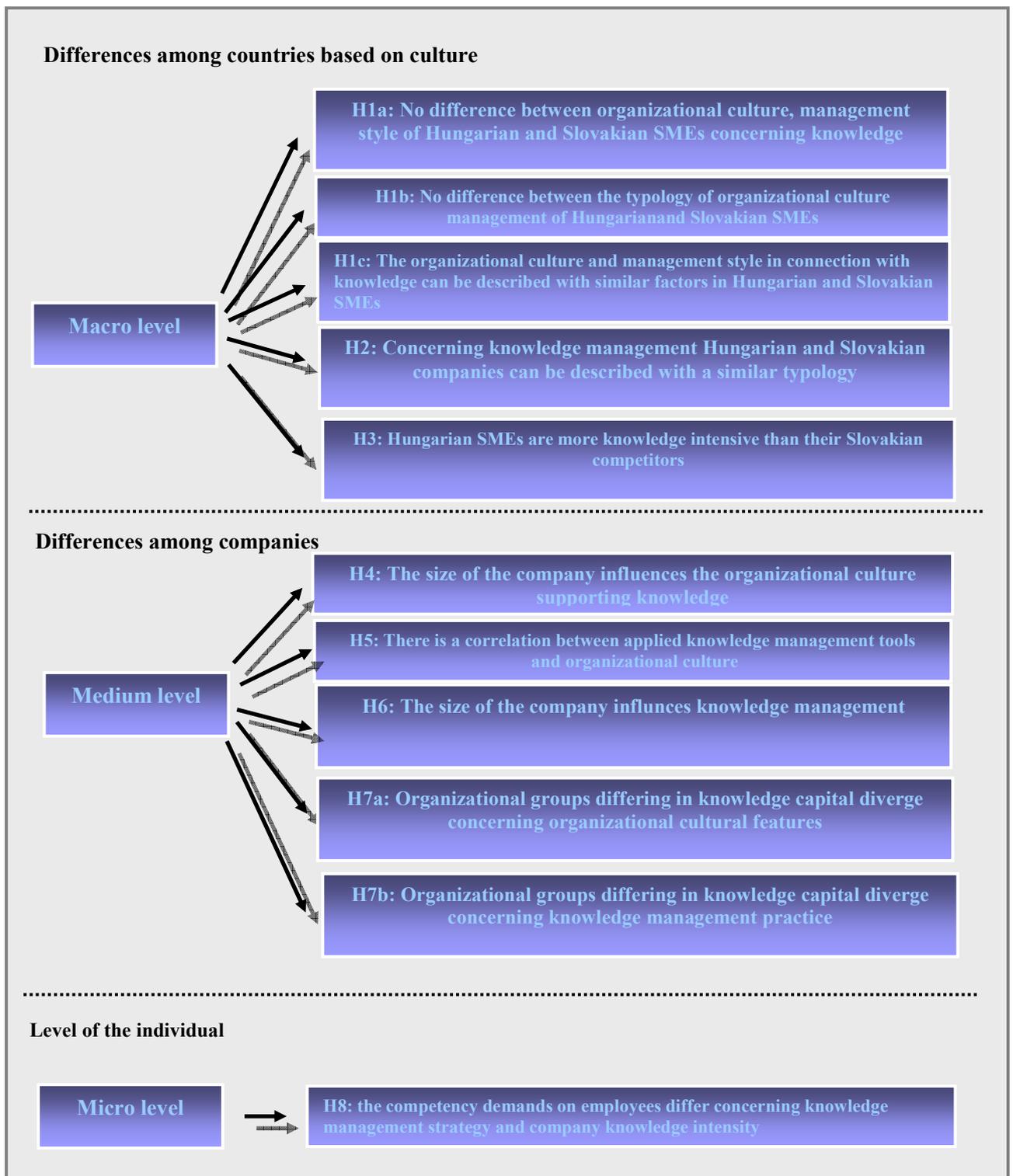
In my dissertation, I analyze the “soft” organizational factors out of the elements of knowledge management, because these factors have the most important role in the small and medium size companies according to my experiences. The “soft” factors contain cultural elements and factors of management style. I created the questionnaire test in order to examine the cultural elements on three different levels. The first level is the macroeconomic level, where I examined the features of the national cultural elements of the two neighbouring countries: Slovakia and Hungary. I looked for an answer whether there is a difference between the demand for knowledge and the practice of knowledge management of the Hungarian and Slovakian small and medium size companies. I also examined the deviation of the organizational cultural factors supporting knowledge in both countries.

The second level is the medium level which focuses on the organizations themselves. It has to analyze the role of the organizations’ features influencing company learning and knowledge management. The literature of knowledge management strongly focuses on this field. It analyses the effects of the organizational characters. The third level is the level of human resources. It concentrates on individual workers and their competency, and it examines whether there is a connection between the knowledge intensity of organizations and the competences of employees.

In almost every case, the literature uses only one level from the three levels which I use. My model can be considered as new, because I was able to integrate certain macroeconomic and macro cultural factors of the countries and the effects of company

features and the resultant impacts on microeconomic level into only one research. On each level the cultural characteristics mean the starting point of the model, because they mainly determine the knowledge management practices of small and medium size enterprises. It is not only about cultural elements influencing knowledge management, as most other research emphasizes, but about the fact that cultural elements determine the strength of internal knowledge creation, knowledge transfer and knowledge integration for small and medium size companies.

Diagram No. 2 - System of Hypothesis



Source: own design

6. The System of Hypothesis

H1a: The organizational cultural elements in connection with knowledge can be described with a similar structure in Hungarian and Slovakian companies.

H1b: There is no difference between the organizations of the two countries concerning organizational culture and management styles.

H1c: Companies form groups based on organizational culture, which can be manifested both in Hungary and Slovakia.

H2: The organizational culture and the management style of companies differ significantly based on company size.

H3: Concerning knowledge management, companies can be divided into types, and described with similar structures for both Slovakian and Hungarian companies.

H4: There is a correlation between the tools applied in knowledge management and the organizational culture.

H5: Hungarian companies are more knowledge intensive than their Slovakian competitors.

H6: The size of the company influences the formal and informal learning habits of the company. The smaller company size goes with a lower level of formal learning and with the intensifying of internal learning.

H7a: Groups formed on knowledge capital basis differ in organizational cultural features.

H7b: Groups formed on knowledge capital and physical capital basis differ in learning habits.

H8a: The competency demands on employees differ in applied knowledge management strategies (formal/informal organizations supporting learning).

H8b: The competency demands on employees differ in company knowledge intensity.

7. Evaluation of the Hypothesis, Results, Limits

Six factors could be separated in connection with organizational culture and management variables to Test the hypothesis H1a. The **first factor**, “**Problems**,” contains the variables which rationalize problems of human behaviour, (frequent conflicts inside the organization, management has a controlling character, low level of motivation, high turnover among employees.)

The **second factor**, the “**internal social network**” contains the variables describing the connection reliance and cooperation-network inside the organization. (Practice groups are common methods at the company; initiatives come often from below, close relations, the organization is built on confidence; the higher management supports initiatives).

The **third factor** is “**autonomy**,” with factors describing the independence of the employees. (Democratic and decentralized aim-designation, employees have a high independence).

The **fourth factor** describes the “**centralization of management**.” Centralized aim-designation, strong management, employees simply carry out tasks).

The **5th factor** is about the “**openness of the organizational culture to learning**,” where there is common team work, and learning is accepted in the company, in an open-minded atmosphere.

The last (**6th**) **factor** shows the “**hierarchy structure of the organization**” with a rigid scope of activities, and a hierarchical organizational.

In connection with the hypothesis “H1b,” I examined whether there is a significant difference between the organizations of the two countries if we consider the typical management and organizational cultural elements in the literature of knowledge management, (altogether 20 variables.)

In the examination of hypothesis “H1c” aimed to decide whether there are the same groups in Hungarian and Slovakian companies based on their organizational culture.

In connection with hypothesis “H2,” I examined whether there is a significant difference between the organizational culture and management style of micro, small, medium size and large enterprises in connection with knowledge, based on the factors demonstrated in the former hypothesis.

Concerning hypothesis “H3,” I took knowledge management in a “soft” form, so that is why I made it operational with the most characteristic practice which I observed. The first factor contains variables describing the traditional learning methods. Organized trainings, financial or other kind of supports of employees’ intention to learn and cooperation with external organizations belong to these variables. These factors can also be called **external learning**, since the aim is to get the knowledge from an external source. The second factor aims to improve the exploitation of internal knowledge sources inside the organization. This factor can be called **internal organizational learning**. Information gained from factor analysis shows that the knowledge management orientation of companies has two sides. They can emphasize formal learning, or they can pay attention to internal knowledge sharing, and knowledge transfer.

In hypothesis “H4,” I showed that the factors of organizational culture and management style have a significant correlation with formal and informal learning.

In hypothesis “H5,” I examined first how the company positions itself concerning resource intensity. I distinguished three factors as major resources: capital, labour, and knowledge intensity. The data of the survey show that the activity of small and medium size enterprises shifted towards labour and knowledge intensive industries. Comparing the national results, we see that a significant deviation between Slovakia and Hungary. The research examined the company’s support for learning, the attitude of managers, spontaneous cooperation among employees, team work, participation in professional events, communication with chambers of commerce and creative group techniques, (looking for the existence of differences between the countries).

The knowledge-intensity cannot only be seen in capital structure, or in knowledge management, but in also in human resources competencies. That is why I examined what kind of expectations the labour demand side of small and medium size company sector has towards labour. I measured the competencies required by the company with the help of 16 variables.

I examined the requirements of the employees to develop skills which they lack. I asked the participants to mark the features they are missing during their work.

Hypothesis “H6” examined the relationships between the size of a company and the formal and informal learning elements available at the company.

Hypothesis “H7” examined the relationship between groups based on organizational culture, management style and capital structure, (knowledge capital and physical capital). Hypothesis “H8” examined whether the three learning strategies, (informal, formal, or informal and formal strategy together) need different competencies out of the 16 competencies I formulated.

8. .Summary of the Results

T1a: The organizational cultural elements connecting to knowledge have similar structures for both Slovakian and Hungarian companies.

The features of organizational culture and management style of small and medium size enterprises analyzed from the aspect of knowledge capital can be described with 6 aspects: strength of the internal social network, autonomy of employees, centralization of management, attitude toward learning (openness), hierarchy of the organization, and organizational problems. **The hypothesis was proved.**

T1b: There is no difference between organizations in Slovakia and Hungary concerning their knowledge supporting organizational cultures and management styles.

The examinations of independent organizational, cultural and management variables showed significant differences in some cases even with the same economic structure weights, but the testing of organizational cultural and management factors did not. This pointed out a significant difference in the variables in the two countries. **The hypothesis H1b is partly justified.**

T1c: Small and medium size enterprises form groups based on organizational culture, but these groups are different for Hungary and Slovakia.

There are 4 groups characteristic of the Hungarian companies. The first group contains companies with little **employee autonomy**, but the organizational culture is quite open, and the hierarchy is not too strong. In the second group, the weakest link is the social net, which attracts the high proportion of conflicts. This type of organization is a type **having**

only few connections, because of the lack of internal connections. This weakness of the internal connection network does not characterize this group itself, but the stronger centralization of the management and a higher degree of hierarchy go along with it. The third group is the cluster of **human oriented** organizations. Its characteristics are very strong internal cohesion, autonomy, presence of a resolute leader, openness, and a rather weak hierarchy. The fourth type is a **laissez faire type** organization, with a not so dominant leadership, a rather strong autonomy and with an organization not too open.

In the typical Slovakian small and medium size enterprises, **there is a group, which does not have any dominant characteristics**, but are “drifting with the flood.” There is a good definable cluster, which has **a strong internal social net, high autonomy, a resolute management**, and is open and has a low hierarchy. The third group is composed of companies having **employees with little autonomy strongly connected to their leader** and these companies are rather closed toward learning.

Hungarian and Slovakian company groups can be described with other cluster-structures, which mean a different kind of standardization for companies in the two countries. **The hypothesis is rejected.**

T2: Based on company size the organizational culture and management style of companies differ significantly from each other.

The factors of **conflict, learning and hierarchy** correlate significantly with the company size. It was proved that **problems of human resource characteristics (conflict factor) increase parallel with company size**. The atmosphere supporting internal learning (learning/openness) is strongest in the small size company sector; micro enterprises lag just a bit behind. Big enterprises and especially medium-size companies lag far behind in creating an atmosphere supporting internal learning. The last significant factor, the hierarchy, is stronger in bigger organizations, while in micro enterprises it is the weakest. The company size has a significant effect on autonomy. When the number of employees grows, the autonomy also increases.

Hypothesis “H2” can be considered as proved. The statistical sample shows that a lower level of conflicts, HR problems and hierarchy, as well as an atmosphere encouraging learning favour the internal knowledge management of small and medium size enterprises, while big enterprises have advantages in autonomy.

T3: Knowledge management in companies can be typified, but the types differ between Slovakia and Hungary.

Hungarian and Slovakian companies have different kinds of learning strategies. In both countries there are groups in small and medium-size companies with formal learning and groups with informal learning. In Slovakia there is a group without any of these characteristic learning methods. The third group in Hungary consists of enterprises characterized by above average formal and informal learning. **These facts partially validate hypothesis “H3,”** because it has proved that companies can be standardized based on their knowledge management, but these groups differ between Hungary and Slovakia.

T4: The organizational culture and management style relate significantly to formal and informal learning. Formal and informal learning is probably on a higher level in companies having a knowledge supporting organizational culture and management style. The intensity of the connection is stronger with informal learning, and with classical knowledge management, than with external learning.

Hypothesis “H4.” is partly proved.

T5: Hungarian companies are more knowledge capital intensive than their Slovakian competitors.

Four of the five significantly different attributes have a direct relation to knowledge: **professional experience, professional knowledge and creativity,** (one of the most important work-competences in the EU), as well as **problem solving ability,** are key-competences. Hungarian small enterprises put more value on all four factors. The result is not really surprising. Enterprises requiring a higher level of knowledge and knowledge capital, esteem these abilities of human resource as more important.

Hungarian companies evaluate **willingness** to do extra work as significantly more important, while **adaptability/flexibility** was more highly valued at Slovakian companies. In both countries **reliability** got the highest average (4.62-4.63), followed by another key-competence, **problem solving ability.** (4.47-4.32)

Comparing the company size and the required competences, big enterprises appreciated motivation, creativity, and problem solving skills more than SMEs. SMEs had usually higher expectations for the other features, probably because of their smaller number of employees.

Each of the research methods demonstrated that Hungarian small and medium-size enterprises are more knowledge intensive than their Slovakian competitors. Even if we ignore the effect of the economic structure while examining knowledge intensity, the effect of knowledge intensity can be still significantly demonstrated. **Hypothesis “H5” is justified.**

T6: The size of the company does not influence formal and informal learning habits of the company.

Analyzing the averages, the following correlations appear. Informal learning is more characteristic for smaller companies, while exactly the opposite is true for formal learning. These correlations are not strong enough to verify a statistically significant connection. They can be observed as a tendency. **I rejected hypothesis “H6”**, because I could not demonstrate a significant connection between the size and the learning patterns of a company. However, the tendency is remarkable. Informal learning is typical of smaller companies while formal learning occurs in bigger enterprises.

T7a: Groups formed on the basis of knowledge capital differ in organizational cultural features.

The statistical analysis showed that there is an SME group based on knowledge capital, whose organizational culture differs significantly from companies based traditionally on physical capital. Even where the difference is not significant, a tendency can be seen in the sample. Companies based on human capital need the existence of the organizational culture supporting knowledge management most of all. **Hypothesis “H7a” is justified.**

T7b: Groups formed on knowledge capital differ in knowledge management from those based on physical capital.

Small and medium-size enterprises have different leaning habits, as do groups based on knowledge capital compared with physical capital. There are significantly different

formal learning habits in the group of companies, which follow business strategies based on human capital. **Hypothesis “H7b” is justified.**

T8a: Competency demands on employees differ concerning applied knowledge management strategies (organizations supporting formal/informal learning).

Those companies which consider human competencies important build their strategies on formal and informal learning. Those companies consider all competencies of human resources important, and emphasize both internal and external learning. I regard the **Hypothesis “H8a” as proved.**

T8b: Competency demands on employees differ according to the knowledge intensity of the company.

Professional experience was considered as the most important competency by companies which highly appreciated human capital in their strategy. Self-reliance and problem solving ability was rated as the most important by companies relying on clientele and human capital. The importance of knowledge in information technology was esteemed the most in companies based on human capital.

The **hypothesis H8b is partly proved.** Companies which rely on human capital and their clientele, have higher expectations from their employees concerning professional experience, independence of employees, problem-solving ability and knowledge of informatics.

Conclusions, Limits, Future Directions of Studies

The main aim of my thesis was to examine the effectiveness of the soft factors of knowledge management and to show how these factors succeed in the selected circle of SMEs. I wanted to measure the organisational, cultural, managerial and strategic characteristics of the Hungarian small and medium size enterprises connected to intellectual capital. Furthermore, I wanted to compare this basis with the results of other countries. The first step of comparison was conducted in relation to Hungary and Slovakia. In my thesis I primarily emphasized the comparative nature of the survey and I presented those results that show significant differences between the enterprises of the two countries.

The results could be applied in establishing the further practice of knowledge management of the SMEs, or they can be utilized by external counsellors to apply the elements of knowledge management, or they would be useful for educational purposes concerning competences required by employers and for developing close connections between the SMEs and higher education.

Limits of the Research

- The research does not cover all the elements of knowledge management. It primarily investigated certain soft factors (organisational culture, managerial style, atmosphere that supports learning, individual competences) of enterprises concerning knowledge, application of knowledge, organisational learning. The rest of the elements of knowledge management can be further investigated in a future survey.

- The number of samples can also be considered a limit. (The research processed data from 508 Hungarian and 238 Slovakian enterprises). Although significant there were differences, increasing the number of samples could have showed even more convincing results.

- The questionnaires were filled out mainly in Central and North Hungary and parts of Slovakia that are inhabited by Hungarians, so this fact can be considered a geographical limit. It would be interesting to get the questionnaire filled out on the whole territory of Hungary and Slovakia.

It was not possible to compare the data with the applied practice of the SME sector of Austria which is better developed because of time and financial restraints.

At the same time, it is strength of the thesis that it made international comparisons.

- It was also a limit that some of the questions were not answered by the enterprises. These questions were about the income that makes the performance of the enterprise measurable. It is strange because in theory this kind of data is public.

I have reached the following general conclusions during the interviews with the selected successful Hungarian SMEs:

- They interpret the definition of knowledge on the level of the individual but practical applicability is emphasized.

- Every one of the questioned enterprises finds it very important to deal with knowledge, but they do not have a definite, written knowledge management strategy.
- Management in each successfully operating enterprise consistently apply certain management principles,
 - Aims of the enterprises are clearly stated and known among the employees
 - The enterprises represent a high quality level without exception; some of them are in the leading position; others are unique in their field
 - The enterprises are all managed by competent leaders who lead the way with personal modelling (persistence, self-education, diligence, receptivity for new things.)
 - The majority of the managers/owners have gained professional experience, and knowledge in big companies and they can utilize in their present enterprise.

The observations of the interviews reinforced me that knowledge, (especially practical knowledge,) plays a central role in the circle of SMEs. These enterprises find learning very important and their internal and external training and education is very strong. There are attempts to make tacit knowledge explicit. There are places which established knowledge deposits, but the application of the elements of knowledge management is rather spontaneous; none of the enterprises has a declared knowledge management strategy. We could surely take great steps forward if we exploited the opportunity to develop close connections with higher education.

Further Research Possibilities:

- Interviews were only conducted among Hungarian enterprises because of a shortage of time and finances. The research could be expanded in Slovakia.
- Research could be spread to all Hungarian of SMEs that meet the conditions: profitable, exclusive Hungarian ownership, existing for some years, not a micro enterprise, possibly giving limits of value.
- It would be very exciting to conduct this research among the Hungarian gazelle enterprises that constitute the determining proportion of the GDP growth. Those enterprises would meet the conditions would be those that had an income of at least 10

million HUF in 2002; their income rose by 20% for at least 3 years between 2002 and 2007, remained in Hungarian majority ownership in 2007; they are profitable; they did not get into an advantageous position because of privatisation.

- Some questions emerged during the interviews from which new research topics could be generated:

- the role of knowledge of the former SME manager/owner in the successes of the present day SME.
- another interesting research topic could be the question of why the SMEs believe that there is no need or time for external education, especially for maintaining a close connection with the higher education.

In my opinion, individual knowledge, and higher level knowledge organised from a school guarantees, without exception, that time spent on learning and effective application of the elements of knowledge management will be refunded in the measurable performance of the enterprise.

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