

Strategies of Education and Training Practice of Small and Medium Sized Enterprises

A. Bencsik¹, - A. Sólyom²

Abstract—The role of knowledge is a determinative factor in the life of economy and society. To determine knowledge is not an easy task yet the real task is to determine the right knowledge. From this view knowledge is a sum of experience, ideas and cognitions which can help companies to remain in markets and to realize a maximum profit. At the same time changes of circumstances project in advance that contents and demands of the right knowledge are changing. In this paper we will analyse a special segment on the basis of an empirical survey. We investigated the behaviour and strategies of small and medium sized enterprises (SMEs) in the area of knowledge-handling. This survey was realized by questionnaires and wide range statistical methods were used during processing. As a result we will show how these companies are prepared to operate in a knowledge-based economy and in which areas they have prominent deficiencies.

Keywords—education, knowledge, knowledge management, strategy, SME

I. INTRODUCTION

REALIZATION of the importance and the extreme handling of knowledge are the same age as the history of humanity (for example: respect for shamans, magicians, priests, teachers, curatives, later scientists, etc.). Endeavour to share, integrate, produce knowledge are very old (council of the elderly, relationship between masters – students, etc.). New notions which are different from earlier ones are methods of knowledge sharing, knowledge integration. They become complete by the support of information technology. The latter one is not so old, it origins from the second part of the 1990s. In the background the strengthening globalization and requirements of the globalized economy can be found.

Knowledge management has become a tool of increasing organizational competitiveness by the conscious and system level handling of knowledge. Its

- aim is the development of business,
- prerequisite is to operate all the value chains of HR (recruitment, selection, performance management, teaching/learning, knowledge sharing, knowledge integration, motivation, reduction),

- natural structure is a network,
- basis of their existence is partnership,
- technical background of their operation is information technology.

Why do we have to manage knowledge? Due to the fact that intellectual capital has been in the foreground of organizational statements in the last period. However, it is clear that knowledge can be difficult to account for, its importance is indisputable. The more companies can keep and exploit their employees' knowledge, the more they will be able to reach a business success. Their knowledge can be found in a lot of divisions (departments, workshops, industrial units, etc.). It is dissipated and this knowledge cannot be reached by every employee. Therefore companies have to discover their knowledge again and again, they have to find solutions which have already been born in another unit.

The XXI. century is the period of a knowledge-based society. Knowledge management was born in the middle of 1980 but it became common knowledge when Fortune Magazine wrote about it in the year of 1994. A lot of authors declared it was not a new theory it had been present in the life of organizations and societies for a long time. This new form of knowledge management is only a natural development process.

Knowledge management is a possibility for the individual and teams, too to create collective knowledge in a system, to share and to use knowledge to reach their business aims.

Its primary purpose is to bring tacit knowledge to light. It can be declared that knowledge management is a management tool that handles the different types of knowledge to reach competitive advance and value in business life. This view is built on the basis of a conception that the most valuable resources are human resources with their knowledge and experience.

Knowledge can increase by sharing. If we sell or use knowledge, it is not amortized but becomes valuable. Success of knowledge sharing process depends on communication between participants and the quality of messages.

This era of knowledge offers unrestricted resources because people's ability to create new knowledge is limitless.

The secret of successful companies has been debated for a long time. How can it be that one of them is more successful than the other but they compete with each other at the same market, they work with similar employees, they have the same organizational structure, they work in the same division of labour, etc.

¹ Dr.Andrea Bencsik, Széchenyi István University Győr Hungary 9026. Győr Egyetem tér 1. e-mail: bencsik.andrea@yahoo.com

² Andrea Sólyom, Széchenyi István University Győr Hungary 9026. Győr Egyetem tér 1. e-mail: solyoma@sze.hu

Researches have verified that these facts do not have a serious role in this difference. And what is more even, the volume of the invested capital does not play an absolutely qualifying part.

But we cannot estimate companies without their environment. They work in given social and cultural conditions and with employees who are chosen by themselves. Their success at the market is determined by these two facts. We talk a lot about the changes of our environment that require organizations to change continuously. This willingness to change, flexibility, skill of reaction, skill of renewal are determined by the creativity of employees and colleagues, their willingness to study, the leaders' style and by the organization culture.

Managers have to prepare for management in a new style, to comply with the requirements of becoming a learning organization, keeping knowledge and at the same time for the adaptation of recent methods of knowledge management not only mentally, but also consciously.

In our opinion groups as the basic pillars of an organization have a remarkable role in the successful realization of the above mentioned factors. Collective learning, effective teamwork contribute to the realization of successful knowledge management work and the development of learning organization, which are the conditions of successful operation at the market.

In the past more than 10 years studying, education and human resource (HR) development have become determinative factors in the area of HR management. It means much more than earlier from the view of companies. It has become a strategic question and simultaneously it is a dominant source of competitiveness.

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II. KNOWLEDGE AS A STRATEGIC FACTOR

It is a big problem of companies how to have their employees work to achieve a better business result. Should employees work alone or together in groups? Some new management theories and practices have appeared that demand teamwork. One of them is knowledge management - the most popular theory nowadays - that forces to apply this method. This demand and some other factors together lead there that human resources become more and more important in the life of companies at the competitive market. This important role can be felt in the forming of operation of learning organization and in the forming of organizational structures. Forming of a learning organization is an

elementary prerequisite for the operation of knowledge management systems in companies. This functional method has some significant features and one of them is teamwork.

Possibilities of individuals, their knowledge at a higher level, their performance is a sample of organization. People are not the same, they have different skills, different willingness to study, different abilities and ways of thinking that companies should take into consideration at a higher level to achieve a better business result. It is the principle of the best practice. In each organization there are some people who are at the top of these areas. They are either the first to know something much better than the other or they can do something in a different way. It means that companies use the labour of these excellent people on a group level, after it on organizational level. This initiative from inside the organization is called knowledge sharing. This can support the success of companies at the market.

What can we do to realize these principles in practice?

- best practice has to start from individuals or from groups or from organizational level
- management and the members of the organization have to be extrovert to this new way of thinking
- we have to reward people who use the best practice
- we have to disregard "lilac fog effect"
- we have to allow spontaneous self – teaching groups to operate
- remove obstacles form the way of generalizing best practice

If we can enforce these demands on the individual level, it is only one step to reach the group level. It means the following in case of organizations: if they can realize the continuous education of organization members in the form of a learning organization and as a result of this fact the continuous study, renewal of the organization and updating the organizational memory are carried out they have to care about losing knowledge as well, so that it should be smaller and smaller if the employees are enticed away to other workplaces. During the continuous operation of the organization, they have to reach that people should not study only for themselves but dates, information and knowledge should be built into the organization memory.

Teams that can realize these demands in organizations are not under any circumstance formal groups operating with serious rules. These teams can be professional groups that can be formed spontaneously or among rules. They support possibilities of knowledge sharing and study and they help the view of knowledge management to get spread.

But what gives studying a strategic role? It is a very simple context. Most knowledge – especially not formalized (tacit) knowledge – can be acquired and accumulated over a long time inside an organization. This type of knowledge can be copied and adapted with more difficulties than any other types of sources [4] [8]. On the basis of the above mentioned features, knowledge becomes a source of a competitive advantage in the long run from the point of view of strategy. With the accumulation of this input, companies can build a well-protected competitive factor for a long time as

competitors can copy knowledge but only with difficulty and, furthermore, it can take a long time.

This way of thinking is available not only at an organizational level, but also at a macroeconomic level. The difference can be made in two directions. One of them is the conventional relative product cost strategy which aims to reduce the costs of products and services [3]. The second is aimed at by the European Union (EU) which is an economic growth strategy on the basis of knowledge. This strategy says that added knowledge-value is also a resource which can be maintained for a long time. International researchers agree that knowledge, innovation and creativity are needed for sustainable development. However, the economy can become too vulnerable by the cost reduction strategy.

1.1. Research purposes

We asked the question: do Hungarian SMEs possess any knowledge-based strategies and if so then what kind of HR policy supports these features? To answer this question a special segment of the Hungarian economy was investigated, that of SMEs. This area is not popular among Hungarian researchers but it is known from international literature that these enterprises play a main role in knowledge-based sectors [8]. According to the above mentioned questions in this paper we will show the results of our survey which was conducted by questionnaires in 2009 and in the focus of this survey education and training supported by HR management and leadership was highlighted. This survey is one in a row of earlier surveys, but it differs as in this case soft factors (which are difficult to measure) are in the focus, such as quality of leadership or personal features expected from employees.

The survey focused on the following areas:

- Knowledge transfer, knowledge creation and organizational culture which supports studying and leadership. These were investigated by a group of variables with 22 items which are dominant in organizations.
- We measured different types of studying in organizations which are typical at the investigated companies.
- We investigated which competencies and personal features are important in the process of employee selection.
- We analysed in which area there are the biggest problems in connection with HR.
- We wanted to know if enterprises have a connection with higher education and if so what types of connections exist. If not, we wanted to know what kind of obstructive factors can be found.

II. STRATEGIC BACKGROUND

It was mentioned earlier that at the level of national economy there are two basic strategies. But how do these two strategies appear in companies?

To answer this question the well-known Porter's strategies model can be used. In this model there are three different strategies:

- Cost leadership: a company offers a widespread palette of products with which it can reach a big lot size. It can generate the decline of specific costs.
- Differentiation strategy: on the basis of some features of products or services (which are very different from competitors' products or services) companies can realize competitive advantages.
- Focus or strategic scope: companies can make a conquest of one or some segments. In consequence of this focus companies can use their competitive advantages.

In these strategies the above mentioned two strategic directions can be found. In the case of companies cost leadership, this is the same as the relative product cost strategy at the level of national economy. Differentiation strategy and focus or strategic scope often goes hand in hand with knowledge-based strategies. In this case the source of competitive advantages can be knowledge capital and, together with it, the role of education and training.

2.1. Types of studying in the SMEs sector

Education and training – as a function of HR management – have a key role in the realization of knowledge-based strategies. Education and training appear in companies as a necessity although they can be realized sometimes only in an implicit form.

During the process of modelling three classic types of knowledge capital were used:

- Customer capital is the sum of outside organizational relationships, connections with customers and distributors in the market and connections with investors and competitors. Altogether it also contains formal and informal business connections.
- Structural capital contains such elements of knowledge which are not in close connection with employees, but are in connection with a company. Its most important element is organizational culture and the others are the management's experience, internal processes, routines and systems.
- Intellectual capital is the third group of human capital. It contains explicit knowledge, experience, competencies, expertise, etc.

These three types of capital join each other hierarchically and form a value chain.

As a result of our earlier research a theoretical model has been formed. This model aims to show which factors are significant during SMEs training processes. Two different training types are typical. One of them is information and knowledge acquired from the external environment. Its typical form is to keep connections with higher education, professional organizations, chambers, etc. The other is very different and uses the internal sources of companies, both individual and team learning. This builds on knowledge transfer, knowledge sharing and knowledge multiplication. The well-known

methods are teamwork, a mentor system, spontaneous collaboration, professional teams, etc..

2.2. Hypotheses

H1: According to the conventional view, education and training practices of SMEs lag behind bigger companies. This means external knowledge acquisition causes competitive disadvantages.

H2: Organizational cultures and leadership which build on internal conditions and support informal knowledge are influenced by the measure of companies. The smaller measure improves the conditions of informal learning.

H3: There are typical strategies of knowledge development. Some organizations prefer formal learning, others prefer informal learning.

H4: Organizations in knowledge-intensive industries have different HR demands from companies that are not research-based

III. RESEARCH METHODOLOGY AND CHARACTERISTICS OF SAMPLE

This survey was realized by questionnaires. A simple structure was used in the questions. In case of subjective elements a Likert-scale was used with five grades due to perspicacity.

Wide range statistical methods were used during processing. First we used simple statistics by Microsoft Excel, after that the SPSS 15.0 programme was accommodated with multiplication analyses.

A random sample was taken from all over the country. More than 400 questionnaires were collected, but 365 were left in the database after data cleaning.

The sample can be characterized by three features:

- size of enterprise;
- questioned people's status; and
- areas of business.

3.1 Size of enterprises

More than 50% of the sample were micro-enterprises, approximately 30% were small enterprises and 4.5% of big companies were left in the sample in order to compare their results.

3.2 Areas of business

TABLE I
DIVISION OF SAMPLES

Division of industry in the sample	Rate %
Agriculture and fishing	5
Building industry	14.8
Processing industry	13.1
Trade	23.7
Catering	8
Delivery and storage	4.5

Financial and economic	8.9
Education	2.1
Medical services	1.2
Repair work and other services	18.7

In this sample enterprises were in a well-diversified structure. Commercial businesses were at the highest rate then repair work and other services follow. This rate is a typical feature of Hungary.

3.3 Questioned people's status

On the basis of the above mentioned third feature, questioned people were classified in the following categories: leaders in a high position and owners (55.3%);

- functional leaders (26.6%);
- leaders in a lower position (18.1%).

IV. RESULTS

4.1. SME training from a conventional view

Hypothesis 1.

To confirm the first hypothesis the uses of training from external sources of SMEs were investigated. Connections with higher education and other conventional training and development elements of HR were focused on: participation in organized training or participation in professional programmes. (Tables 2).

TABLE II
CONVENTIONAL FORMS OF EDUCATION, TRAINING AND STUDY IN SME

	Absolutely not typical (%)	Not typical (%)	Meanly typical (%)	Typical (%)	Absolutely typical (%)
Enterprises support studying financially	11.9	31.6	25.8	23.8	6.9
There is organized education	14.6	35.5	20.8	22.5	6.5
Leaders' behaviour supports studying	7.3	24.3	33.8	26.8	7.8
Participating in professional programmes	6.7	13.7	31.6	32.1	15.9
Relationships with chambers	14.6	23.3	26.7	23.6	11.8

Tables 2 confirm hypothesis 1. Those answers which are particularly remarkable concern the connection with higher education. Independent from the type of answers "there is no connection and they do not want to have one" had a high percentage.

This result shows that SMEs operate in a very closed system often without enough information and knowledge. Our experience is that this attitude originates from distrust which was a problem during the completion of the questionnaires. In the cases of these enterprises, external learning is a category of exception rather than an accepted standard solution. These statements are confirmed by the following facts that enterprises do not keep connections with higher education but they are no obstructions at all. In our opinion it means that these enterprises are very distrustful and they do not feel this area is important.

4.2. Informal learning

Hypothesis 2.

It is well-known that a lot of features of organizational culture, HR and leadership support informal knowledge transfer and knowledge creation.

An open atmosphere, a non-hierarchical relationship between leaders and employees, accepted learning and a motivational atmosphere have to be emphasized from organizational characteristics.

Higher independence of employees, support of initiations which come from the bottom, flexible jobs, support of collaboration are important in leaders' features.

These facts were operationalized by 22 variates. In our analysis the sample was divided into two different groups: enterprises with fewer than 20 employees and enterprises with more than 20 employees. In our experience this size of company is an important element from the view of a knowledge management system.

A t- test was used with an independent sample. Significant facts are:

- there are close connections among employees;
- they is frequent conflict in the organization;
- the organizational structure is hierarchical;
- activities are not flexible;
- higher leaders support employees' initiations;
- there are frequent initiations from the bottom to the top;
- organizations operate on the basis of trust;
- an open atmosphere is characteristic.

From these significant facts it can be clearly seen that the size of organization is dominant. In smaller organizations mutual trust, an open atmosphere and fewer conflicts are dominant. These features are very useful when sharing and creating knowledge. Organizational structures of these smaller companies support our establishment. In these organizations hierarchical relationships and strict control are at a lower level. These conditions are favourable for informal knowledge sharing. In these smaller companies initiations often come from the bottom and these initiations are supported by the CEO as well.

From this analysis it can be seen that smaller organizations offer very good conditions for a knowledge management system thanks to a soft organizational culture and principles of leadership. It is not an accident that knowledge-based organizations are over-represented among SMEs because in

their cases conditions of knowledge transfer and knowledge creation are optimal.

4.3. Learning strategies of SMEs

Hypothesis 3.

To investigate the third hypothesis cluster analysis was used. Ten variables were called in which contained external and internal elements of knowledge. These variables and the results of this investigation can be seen in the following table.

TABLE III
TYPES OF LEARNING IN ORGANIZATIONS

Types of learning	Cluster centres			
	1	2	3	4
Enterprises support studying financially	0.43	-0.42	0.97	-0.72
There are organized educations	0.47	-0.53	1.03	-0.65
Leaders' behaviour supports studying	0.20	-0.13	0.93	-0.73
Independent collaboration among employees	-0.31	0.60	0.77	-0.79
Teamwork	-0.25	0.52	0.74	-0.85
Mentor system	-0.07	0.01	0.77	-0.45
Participating in professional programmes	0.33	-0.29	1.05	-0.78
Relationships with chambers	0.46	-0.37	0.95	-0.71
Knowledge sharing	-0.28	0.47	0.65	-0.66
Theoretical methods in teams	-0.15	0.36	0.87	-0.83
Rate (%)	28.53	27.38	17.29	26.8

As a result of cluster analysis we have a stable structure which describes four different strategies.

The results show 28.5% of cases belong to a strategy which is based on conventional elements of learning. In this strategy internal knowledge creation is featured at a lower level, but external learning is featured (see values of cluster centres).

The second group can be featured by opposite values. In this case conditions of knowledge sharing and knowledge creation are given based on internal sources.

In the lowest rate (17.3%) there are companies in which both strategies are featured (cluster 3).

In the fourth group 26.8% of those companies do not feature in any of the strategies.

This cluster analysis verified our hypothesis. Companies have typical strategies such as conventional HR development and educational strategy or knowledge-based strategy. We have also found companies where both strategies are employed or companies where none of the strategies are employed at all.

4.4. HR requirements

Hypothesis 4.

During the investigation we looked for personality features in connection with young people with a degree. A list and scores of their importance can be seen in Figure 1.

Reliability is the first on this list, followed by problem solving and professional knowledge. It is surprising that

informatics and language knowledge are in the background but this can be explained by the aims and behaviour of SMEs. They work in local markets but do not produce exports. This can explain why language knowledge is in the last position. Infrastructural causes can explain why computer science remains in the background (remember there are more than 50% of micro-enterprises in the sample.)

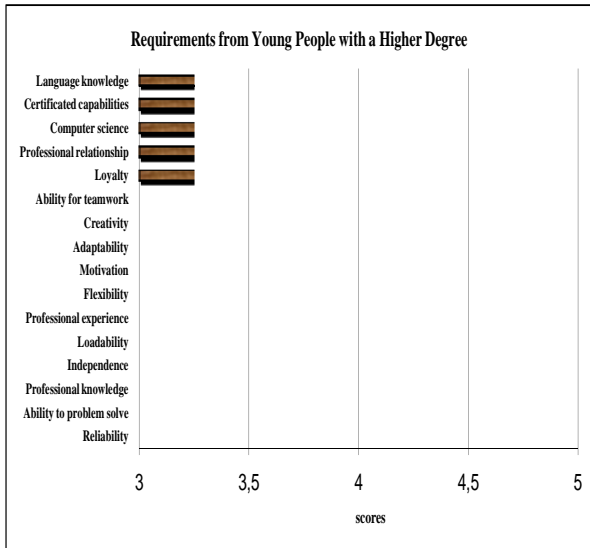


Fig. 1 Requirement from young people with a higher degree

According to hypothesis 4 the role of enterprise size was investigated from the view of their requirements towards young people with a higher degree. But there were no significant differences in any facts at all. Due to this result hypothesis 4 was rejected.

V. CONCLUSION

To operate a knowledge management system in organizations successfully depends on how a learning organizational culture can be formed. Conditions of these structures are open thinking, helpfulness, collaboration, trust in colleagues and in leaders beyond professional knowledge at a high level. The value of enterprises/companies at the markets are often much higher than their value in accounting. The difference between these two values is the intangible assets, (the intellectual capital or knowledge assets) which are about 70% according to macro economical public accountancy.

This capital has to be cared by organizations. A task is on the one hand to acquire and increase knowledge, and a task is on the other hand to minimize the loss of knowledge capital. (We can speak about loss of knowledge capital in case of fluctuation if a valuable employee becomes sick or dies, etc.)

In this research SMEs were investigated from the view of a knowledge-based economy. The question was how they can face future challenges.

Forms of education and training were investigated. Education and teaching in a conventional meaning are in the

background in the case of these SMEs which means that the only opportunity to acquire knowledge is externally.

According to the interpretation of knowledge in a wider frame – which means the view of knowledge management – SMEs are in a good position because their size allows them to form interpersonal connections and to use democratic leadership. They are favourable to knowledge sharing and knowledge creation which is a new paradigm of our modern economic life.

It was established that learning has four strategies in the case of SMEs.

There are organizations which cannot be featured by any strategy at all. There are organizations which have conventional and knowledge-based strategies, too. We could find organizations which have only conventional or only knowledge-based strategies.

This survey had a deeper insight into the investigation of how the size of companies influences demands from HR. In this case there were no significant differences among the facts.

Ultimately it can be established that SMEs have deficiencies from the view of conventional education and teaching but they have competitive advantages in the area of informal knowledge transfer, knowledge sharing and knowledge creation.

We know that knowledge and study are very important for companies, their role have become more and more determined. In spite of these facts they cannot keep abreast of financial things because the purpose of the companies is to reach the highest profit. Information has become very valuable, but flow channels stay in the background, because people distrust each other very much.

Small and medium-sized enterprises do not feel the importance of study and knowledge, the necessity to build organizational culture and atmosphere to operate these systems.

They know that they have to change their behaviour and thinking, they know that demand is increasing continuously, but they are not on the suitable level that they can compete with bigger or multinational companies.

What can we do at the universities so that we can prepare students - who will work at these small and medium-sized companies – that these enterprises can become really serious pillars of Hungarian economy and these companies should mean for us possibilities of development in future.

This research was very interesting and useful for us, for companies and for economic experts, too and we would like to continue our analysis within an international framework too.

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