

## PERCEPTION OF KNOWLEDGE MANAGEMENT BY MANAGERS AND EXPERTS WORKING AT IT ENTERPRISES IN POLAND

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### **Abstract:**

Along with increasing competitiveness of economy and enterprises, the value of knowledge has gained considerable importance. It has been perceived as an important source of building market attractiveness of an enterprise. Thus, many enterprises have decided to implement the concept of knowledge management. The paper presents results of a study on perception of the level of knowledge management by managers and IT experts working in Polish companies. Authors put forward a thesis that knowledge management perception may differ across individuals holding managerial and expert positions. Obtained study results will allow to conclude to what extent these opinions converge and what disparities there are between them.

Study participants expressed their opinions about the following aspects of knowledge management:

1. Enterprise advancement in knowledge management implementation
2. Elements of the knowledge management system.
3. Objectives of knowledge management implementation
4. Barriers to knowledge management implementation
5. Sources of knowledge in an enterprise
6. Knowledge management tools
7. Knowledge management process

The study included 416 participants employed in 101 IT enterprises across Poland. Among the participants, there were 254 managers and 162 experts. A purposive sample was used in the study, and survey-based quantitative research was used in order to obtain most objective results.

*Keywords: knowledge management, Polish IT sector, knowledge management perception, managers, experts*

## 1. INTRODUCTION

Knowledge management has many meanings. According to T. J. Beckman knowledge management has a different dimension: conceptual, procedural, technological, organizational, management and implementation<sup>1</sup>. This multidimensionality is reflected in the various definitions. According to T.A. Hurley, C.W. Green knowledge management is a "process in which an organization creates, captures, acquires and uses knowledge to support and improve the functioning of the organization"<sup>2</sup>. K. Mertins, P. Heisig, J. Vorbeck define knowledge management as "all methods, instruments and tools that support the holistic sense of key processes in the area of knowledge"<sup>3</sup>. According to promoters of knowledge management, this concept serves as:

- the basic tool for managing future of an enterprise,
- a chance for radical reorganisation of the manner of thinking,
- a tool for effective identification and bridging the competence gap,
- a tool for supervising knowledge resources, in order to provide easier access to and use of the knowledge,
- a platform for creating and capturing new experiences and information,
- a set of specific actions and initiatives taken by enterprises in order to increase the organisational knowledge.<sup>4</sup>

Knowledge management is based on the assumption that "just as human beings are not able to fully use their mental capabilities, organisations are not able to fully use knowledge they have at their disposal". Owing to knowledge management, organisations, through acquisition or creation, search for potentially usable knowledge and make it available to those who can use it at a time and place proper for the most effective use thereof, in order to positively affect operation of the organisation. It is generally believed that if an organisation can effectively improve its use of knowledge even to a minor extent, this will consequently translate into enormous advantages"<sup>5</sup>. These advantages include improvement of many operational indicators, in areas such as: management, information technology, productivity, development of best practices, leadership and decision-making, customer satisfaction, innovation, competitiveness, cooperation, science, social capital, human capital and structural capital.<sup>6</sup> Diversity and multiplicity of advantages resulting from knowledge management have made enterprises interested in this concept.

## 2. METHODS

The purpose of the study was to evaluate the level of knowledge management by managers and experts. 254 managers and 162 specialists were asked for their opinion about selected aspects of knowledge management. The study was conducted in 101 IT enterprises operating in Poland.

In order to fulfil the adopted purpose and obtain possibly most objective results, the following study methods were applied:

1. Literature studies which allowed to adopt specific aspects of knowledge management and develop a research tool.
2. Quantitative studies based on survey studies.

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<sup>1</sup> T.J. Beckman, The Current State of Knowledge Management, [in:] J. Liebowitz (Ed.), Knowledge Management. Handbook, CRC Press, Boca Raton-London-New York-Washington 1999, p. 1-1 – 1-19

<sup>2</sup> T. A. Hurley, C. W. Green, Knowledge Management and the Nonprofit Industry: A within and between Approach, „Journal of Knowledge Management Practice” 2005, vol. 6, <http://www.tlinc.com/articl79.htm>

<sup>3</sup> K. Mertins, P. Heisig, J. Vorbeck, Knowledge Management: Best Practices in Europe, Springer-Verlag, Berlin 2001, p. 3

<sup>4</sup> E. Skrzypek, Rola wiedzy we współczesnym zarządzaniu, [in:] A. Sitko – Lutek (Ed.), Polskie firmy wobec globalizacji. Luka kompetencyjna, Wydawnictwo Naukowe PWN, Warsaw 2007, p. 98

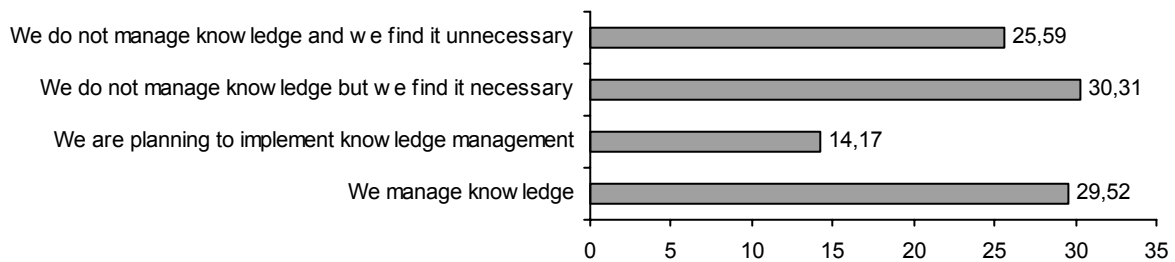
<sup>5</sup> W. R. King, Knowledge Management and Organizational Learning, [in:] W. R. King (Ed.), Knowledge Management and Organizational Learning, Springer, New York 2009, p. 3

<sup>6</sup> A. Bennet, R. Neilson, The Leaders of Knowledge Initiatives: Qualifications, Roles and Responsibilities, [in:] C.W. Holsapple (ed.), Handbook on Knowledge Management. Knowledge Matters, Sringler, Berlin-Heidelberg, New York 2004, vol.1, pp. 525-526

### 3. EVALUATION OF KNOWLEDGE MANAGEMENT BY MANAGERS – STUDY RESULTS

The starting point for analysing the level of knowledge management in the studied IT enterprises was learning about the level of interest and involvement of enterprises in using knowledge management, from responses of study participants to the question whether or not in their enterprises knowledge is managed (diagram 1). Of 254 managers participating in the study, 29.52% provided a positive answer. Very similar group of managers (30.31%) decided that knowledge is not managed in their enterprises, but they are interested in implementation of this concept. 25.59% of participants responded that knowledge is not managed in their enterprises.

**Diagram 1:** Distribution of manager responses regarding enterprise advancement in knowledge management implementation (%)

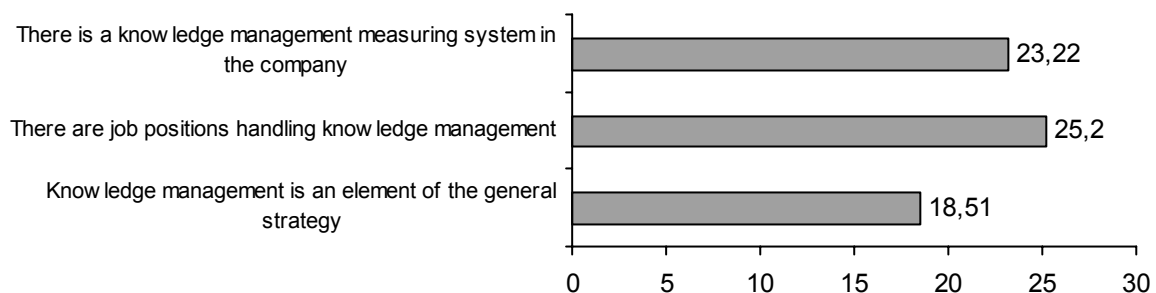


Source: author's own study based on obtained results.

Analysis of elements of the knowledge management system was connected to its interrelation with a company strategy, existence of job positions responsible for implementation of the concept and of the measuring system allowing to evaluate effectiveness of the knowledge management system.

According to managers claiming that knowledge is managed in their enterprises, none of the listed elements was present. Vast majority of study participants (81.49%) denied there was a connection of this concept with the general strategy. They also failed to observe establishment of positions dealing with knowledge management (74.80%). Only 23.22% of managers declared that a measuring system allowing to evaluate effectiveness of knowledge management was developed in their enterprises.

**Diagram 2:** Distribution of manager responses concerning elements of the knowledge management system (%)



Source: author's own study based on obtained results.

An analysis of causes for implementation or alternatively, interest in knowledge management revealed the need to improve a number of areas of enterprise operation. According to the managers, knowledge management implementation should contribute to more effective satisfaction of customer needs (63.38%), improved quality of rendered services (62.99%), management enhancement (55.11%) and increased competitiveness (55.11%). Apart from the listed areas, study participants believed that knowledge management will translate into higher work effectiveness (46.45%) and time savings (48.03%).

Apart from objectives, managers also expressed their views on the barriers hindering knowledge management implementation and enforcement. Participant responses focused around four limitations.

They included: inappropriate management style (53.54%), ineffective communication (50.39%), absence of a system for evaluation of measurable advantages from knowledge management implementation (48.81%) and limited financial resources (45.66%). In the managers' opinion, an incentive scheme not conducive to team work and knowledge sharing was the least significant problem (15.74%).

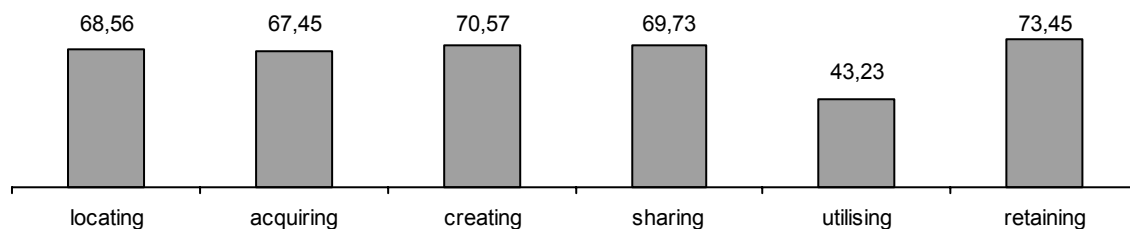
Another considered aspect of knowledge management were sources of knowledge. Sources enumerated by the managers most often included Internet (55.51%), external trainings (53.14%) and personal experience (50.0%). Also, they used databases (47.63%), literature and journals (43.30%) to acquire knowledge. An often mentioned source of knowledge (40.55%) were contacts with customers. On the other hand, recruitment of highly-qualified specialists (17.32%), interpersonal contacts with scientists, research and development centres (16.14%) and participation in trade fairs and conferences (15.74%) was a rare practice.

The managers referred to two tools supporting knowledge management only. In their opinion, the basic tool for finding and transmitting knowledge is the Internet (99.21%) and electronic mail (82.67%). Databases (60.62%) and video conferences (48.81%) are also used relatively often. Extranet, on the other hand, is used to an insignificant extent (5.51%).

Results of a study on the knowledge management process showed that in studied organisations, specific process phases have been carried out with various intensity. However, in case of a number of phases, the differences are quite minor (diagram 3). Placing managers' responses concerning prevalence and intensity of knowledge management practices in an order, they are as follows:

1. Knowledge maintenance – 73.45%
2. Knowledge creation - 70.57%
3. Knowledge sharing – 69.73%
4. Knowledge localisation – 68.56%
5. Knowledge acquisition - 67.45%
6. Use of knowledge – 43.23%.

**Diagram 3:** Distribution of manager responses concerning the knowledge management process (%)



Source: author's own study based on obtained results.

While evaluating phases of the knowledge management process, the managers also indicated the best and the worst practices within the studied process. Particularly well-perceived ones included:

- Acquisition of knowledge during cooperation with other enterprises – 73.77%
- Use of legitimate R&D developments of other companies – 73.47%
- Systematic database updates – 72.87%
- Adjustment of databases to key processes carried out in the company – 72.07%
- Use of reasonable data protection measures – 71.74%
- Having corporate research and development resources – 60.24%
- Recording and filing knowledge of key employees – 60.16%.

At the same time, they were aware of the low effectiveness of:

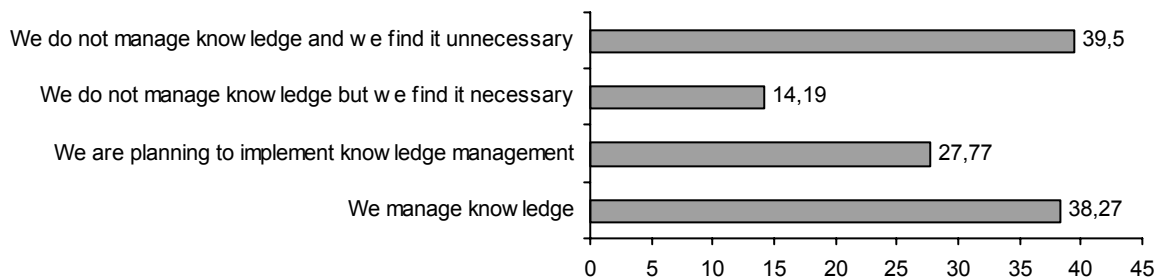
- Applying “new” knowledge to existing solutions – 61.45%
- Using new working methods – 60.95%
- Localisation of some databases – 55.24%

In view of knowledge management, the fact of keeping information to themselves by company employees is an alarming tendency (43.68%)

#### 4. EVALUATION OF KNOWLEDGE MANAGEMENT BY EXPERTS – STUDY RESULTS

While discussing the issue of interest in knowledge management implementation by the enterprises, the group of specialists mainly expressed two contradictory opinions. According to some specialists (38.27%), knowledge is managed in their enterprises. At the same time, 50% of experts believed that knowledge is not managed in their enterprises and that no need to apply this concept is noticeable. This approach was partially supported by 14.19% of studied individuals, as they claimed that in their companies knowledge is not managed, although a need to do so is observed. Planned implementation was reported by 27.77%.

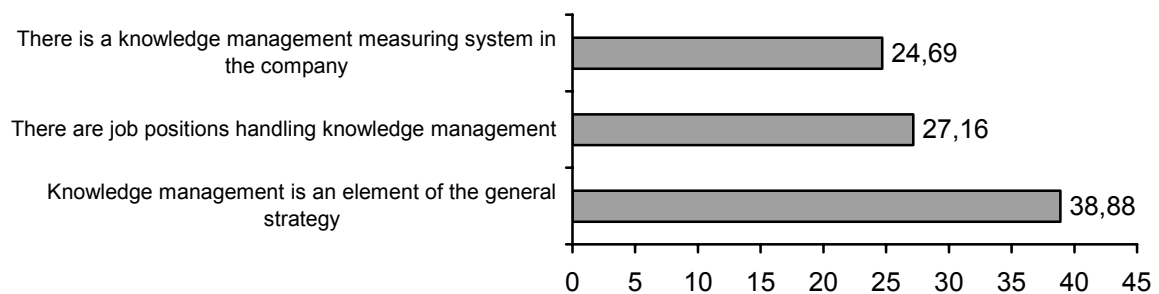
**Diagram 4:** Distribution of expert responses regarding enterprise progress in knowledge management implementation (%)



Source: author's own study based on obtained results.

Experts expressed negative opinion about selected elements of the knowledge management system (diagram 5). Only 38.88% of them believed that knowledge management is a tool for implementation of the general company strategy. Even fewer of them (27.16%) claimed that in their enterprises, there were job positions established intended to implement and enforce knowledge management. 24.69% of study participants were aware of existence of a system of indicators allowing to measure knowledge management effectiveness.

**Diagram 5:** Distribution of expert responses concerning elements of the knowledge management system (%)



Source: author's own study based on obtained results.

The study of reasons for interest in and implementation of knowledge management brought diversified results. Increased work effectiveness (76.54%), time savings (68.51%), improved quality of rendered services (66.09%) and management enhancement (63.58%) were regarded by the specialists as the most significant impulses. Knowledge management enforcement is believed to bring possibly higher satisfaction of customer needs (54.93%) and cost reduction (54.93%). It should be stressed, that only apart from the possibility to acquire qualified staff (14.19%), other causes were evaluated by the specialists as average.

According to the experts, enforcement of the knowledge management concept encounters a number of obstacles. One of them, which is the most significant, is ineffective communication (65.45%). What is more, studied individuals concluded that inappropriate management style (49.38%) is another important barrier. Negative impact on enforcement of knowledge management is also exerted by the

lack of measurable advantages (36.41%), staff fluctuation (35.80%) and absence of the incentive scheme supporting team work (32.09%).

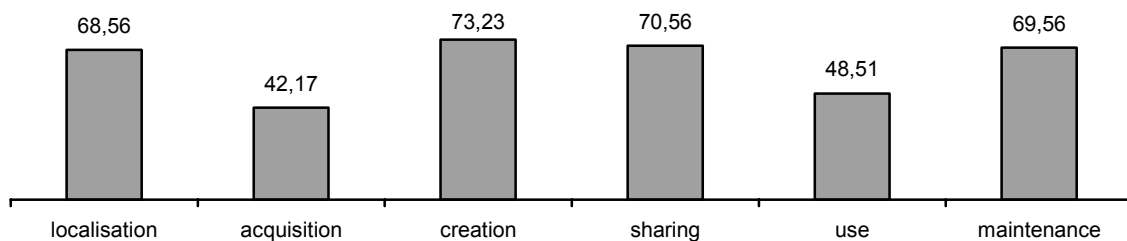
While analysing sources of knowledge used in studied enterprises, the experts discovered a large number of such sources. The major ones included external trainings (69.75%), learning through personal experience (67.90%), Internet browsing (67.90%) and corporate databases (61.72%). In their opinion, employees working for the company for a long time, having extensive experience, unique knowledge and skills (53.08%), also serve as the source of knowledge. In search for knowledge, they refer to the literature (52.46%) and external experts (49.38%). They also rely on contacts with customers (48.76%) and meetings with managers (47.53%) in order to get information. However, they rarely make use of external recruitment of highly-qualified individuals (14.19%) and rationalization ideas developed by employees as the source of knowledge.

According to experts, mainly two tools support knowledge management in enterprises. They are the Internet (95.67%) and electronic mail (85.15%). Databases (76.54%) and intranet (69.13%) are frequently used in localisation and maintenance of knowledge. Video conferences constitute another tool used to support knowledge management (42.59%).

Study results related to the knowledge management process allow to conclude that all phases thereof have been carried out, however their intensity was different (diagram 6). According to the experts, knowledge creation is perceived in the most transparent manner, in contrast to its acquisition. Placing experts' responses concerning prevalence and intensity of knowledge management practices in an order, they are as follows:

1. Creation – 73.23%
2. Knowledge sharing – 70.56%
3. Knowledge maintenance – 69.56%
4. Knowledge localisation – 68.45%
5. Use of knowledge – 48.51%
6. Knowledge acquisition – 42.17%

**Diagram 6:** Distribution of expert responses concerning the knowledge management process (%)



Source: author's own study based on obtained results.

While analysing the above phases, experts have pointed out the best and the worst practices enforced in the course of knowledge management process. Good practices included:

- Use of legitimate R&D developments of other companies – 70.41%
- Existence of corporate conditions encouraging employees to experiment, present their own suggestions – 69.73%
- Provision of conditions for sharing knowledge – 68.76%
- Adjustment of databases to key processes carried out in the company – 68.34%
- Employee familiarity with in-house experts – 60.39%.

While evaluating specific phases of the knowledge management process, experts expressed unfavourable opinions about:

- Preferring previous working methods by employees – 67.34%
- Failure to use services of consultancy companies to acquire knowledge – 65.31%
- Disregarding external recruitment in knowledge acquisition – 63.44%
- No practice of evaluating usability of information held by employees – 60.23%.



## 5. CONCLUSION

Obtained study results allowed the authors to learn how knowledge management concept is perceived by managers and experts. Analysis of these results to a certain extent confirms the thesis that evaluation of knowledge management will be different across these two groups of employees. Summary of research questions and responses thereto is presented in table 1.

Difference in perception of knowledge management may be noticed during determination of the level of interest in implementation of this concept. Position of the managers is highly equivocal. Approximately the same numbers of managers confirmed and denied knowledge management practices. Within the group of managers denying knowledge management practices, a number of participants claimed that enterprises are not interested in implementation of this concept, which approximated the number of managers observing the need for implementation. However, after summing up of responses expressing enforcement and potential enforcement of knowledge management, interest in the concept would prevail.

In their opinions concerning interest in knowledge management implementation, experts were also divided into two groups. In their case, however, two utterly different opinions prevailed. Two groups of specialists of comparable size both confirmed and denied knowledge management in enterprises. However, considering the fact that a significant group of experts claimed that knowledge management has been or is planned to be implemented in enterprises, positive image of this concept is obtained.

According to managers and experts, knowledge management bears insignificant features of a system. Both groups participating in the study failed to perceive knowledge management as a tool for implementing a general company strategy. Knowledge management practices in a majority of instances (60%) were not related to the strategy of an organisation. Absence of a systemic approach is also determined, according to managers and specialists, by the lack of job positions specialized in knowledge management. Even if some companies dealt with knowledge management, this did not mean that it is incorporated in the organisational structure of job positions handling knowledge management.

**Table 1:** Summary of research questions

Research question	Managers	Experts
To what extent enterprises are interested in knowledge management?	There is no knowledge management, but such need is observed/knowledge is managed	Knowledge is managed/there is no knowledge management and no such need is observed
Is knowledge management an element of organisation strategy?	No	No
Was there a job position established in the enterprise dealing with knowledge management?	No	No
Is there a knowledge management measuring system in place?	No	No
What are the objectives of knowledge management implementation?	<ul style="list-style-type: none"> <li>– higher satisfaction of customer needs</li> <li>– improved quality of rendered services</li> <li>– management enhancement</li> <li>– increased competitiveness</li> </ul>	<ul style="list-style-type: none"> <li>– increased work efficacy</li> <li>– time savings</li> <li>– improved quality of rendered services</li> <li>– management enhancement</li> <li>– higher satisfaction of customer needs</li> <li>– cost reduction</li> </ul>
What are the barriers to knowledge management implementation?	<ul style="list-style-type: none"> <li>– inappropriate management style</li> <li>– ineffective communication</li> </ul>	<ul style="list-style-type: none"> <li>– ineffective communication</li> <li>– inappropriate management style</li> </ul>
What sources of knowledge have been used by enterprises?	<ul style="list-style-type: none"> <li>– Internet</li> <li>– external trainings</li> <li>– personal experience</li> </ul>	<ul style="list-style-type: none"> <li>– external trainings</li> <li>– learning from personal experiences</li> <li>– Internet browsing</li> <li>– corporate databases</li> <li>– employees working for a company for many years, having extensive experience, unique knowledge and skills</li> <li>– literature</li> </ul>
What tools they have used in knowledge management?	<ul style="list-style-type: none"> <li>– Internet</li> <li>– electronic mail</li> <li>– databases</li> </ul>	<ul style="list-style-type: none"> <li>– Internet</li> <li>– electronic mail</li> <li>– databases</li> <li>– intranet</li> </ul>
What phases of the knowledge management process have been carried out in enterprises?	<ul style="list-style-type: none"> <li>Maintaining knowledge</li> <li>Knowledge creation</li> <li>Sharing knowledge</li> <li>Knowledge localisation</li> <li>Knowledge acquisition</li> <li>Use of knowledge</li> </ul>	<ul style="list-style-type: none"> <li>Creation</li> <li>Sharing knowledge</li> <li>Maintaining knowledge</li> <li>Knowledge localisation</li> <li>Use of knowledge</li> <li>Knowledge acquisition</li> </ul>

Source: author's own study based on obtained results.

What is more, managers and experts displayed similar approaches in perceiving another negative indicator of systemic approach to knowledge management, which was the absence and lack of application of knowledge management measuring systems.

Low opinion about knowledge management as a system may be accounted for by the generally small interest of enterprises in this concept, according to managers and experts.

As far as evaluation of the sources of knowledge is concerned, responses were diversified across both groups. Managers revealed poorly diversified use of the sources of knowledge when compared to experts. Among potential sources of knowledge listed above, in the studied organisations some sources have been used to a considerable extent (Internet, external trainings, personal experience)



and some to an average extent (literature studies, contacts with customers, acquiring knowledge from external consultants, meetings of the management with employees). According to the managers, the remaining dozen of sources are used seldom or very seldom. Experts on the other hand, provided a more extensive list of the sources of knowledge used most often (external trainings, learning from personal experiences, Internet tracking, databases, employees working for the company for many years having extensive experience, literature, external experts). Apart from the already listed ones, experts concluded that besides cooperation with the strategic investor, all other sources of knowledge have been used in their enterprises. As regards tools supporting knowledge management on the other hand, positions of both groups of participants were similar. In the studied enterprises, Internet, electronic mail and databases included the predominantly used sources of knowledge. Other sources were used less often or to an insignificant extent, when compared with the major ones.

Knowledge management is associated with fulfilment of specific objectives. In case of this particular aspect, both groups of study participants expressed diversified opinion. The managers mainly believed in improvement of the market position of an enterprise. Experts on the other hand, apart from the market-related goal, perceived more areas of enterprise operation enhancement of which could result from knowledge management. Both groups of study participants associated the vision of management enhancement with implementation of this concept.

In the studied enterprises, knowledge management obviously encountered obstacles limiting effectiveness of this concept. Poor interpersonal communication and inappropriate management style were regarded by both managers and experts as the most significant hindrance. It should be noticed, that both obstacles reflect interpersonal relations which are hard to establish. Jointly perceived problem is also the absence of a measuring system allowing to evaluate measurable effects of knowledge management. On the other hand, according to managers, knowledge management is supported by the existing incentive scheme promoting team work, which in the experts' opinion does not exist.

While analysing the obtained results related to the knowledge management system, both managers and experts concluded that in the studied enterprises all phases of knowledge management system are carried out, however with a diversified intensity. According to the managers, knowledge maintenance has been practiced most intensely, compared with poor use of knowledge. According to experts participating in the study, knowledge creation activities were the most prevailing, whereas use of knowledge was the poorest. Divergence in perception of the analysed process between managers and experts is also related to knowledge management practices in particular phases listed in the foregoing sections of the paper. Both groups of study participants concluded that the use of knowledge is poor.

Description of knowledge management obtained on the basis of study results provided by managers and experts contains many similar observations, but differs in some aspects as well. It appears that experts have observed more aspects of knowledge management than did the managers. It is difficult to conclude however, which group of participants perceives knowledge management in a more positive light.

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