Abstract: Researchers in the area of the knowledge management are oriented on different aspects and represents different approaches. The article introduces knowledge management maturity research results from the industrial enterprises in Slovak Republic. Objectives of the research were to identify key knowledge management dimensions that could influence maturity of the knowledge processes. The research methodology was based on the modified Capability Maturity Model.

Key words: Knowledge Management, Maturity Models, Knowledge culture, ICT

1. INTRODUCTION

In the 21st century, successful organizations are competitive, fast-paced, first-to-market, and global in nature. Creating strategic advantage requires a new type of organization that has the capability to create knowledge to maximize organizational competitiveness and strategic success [1].

Knowledge management covers a broad spectrum of activities and operates at many levels, from the individual to the enterprise, between enterprises (as in virtual organizations). Much of the focus of a knowledge management programmes is at enterprise level, i.e. knowledge management across an organization. However, many of the approaches and techniques of organizational knowledge management are equally applicable at several levels. The table below shows a hierarchy of levels and gives examples of factors addressed at each level [2].

<table>
<thead>
<tr>
<th>Level</th>
<th>Typical Programme</th>
<th>Examples of Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>International</td>
<td>Various</td>
<td>Accounting standards (intangible assets), WIPO</td>
</tr>
<tr>
<td>Governments</td>
<td>Knowledge economy</td>
<td>Stimulating innovation, setting public sector KM standards, innovation scorecards</td>
</tr>
<tr>
<td>Intra-Organization</td>
<td>Collaborative alliances</td>
<td>Pooling knowledge, new product development, market access</td>
</tr>
<tr>
<td>Enterprise</td>
<td>Organization-wide KM programme</td>
<td>Sharing best practice, intranet portal, CoPs</td>
</tr>
<tr>
<td>Team or Department</td>
<td>KM Project (localized)</td>
<td>Business improvement, specialist knowledge base, virtual working</td>
</tr>
<tr>
<td>Individual</td>
<td>PKM (Personal Knowledge Management)</td>
<td>Skills development, time management, IM, PC and networks use</td>
</tr>
</tbody>
</table>

Table 1. Knowledge management levels
Source: [2]
2. KNOWLEDGE MANAGEMENT MATURITY

To recognize the potential gains from systematically and professionally developed knowledge management at all levels, requires application of evaluation methods. One of those methods is the application of maturity models. Maturity models have the following properties [4]:

- The development of a single entity is simplified and described with a limited number of maturity levels (4 to 6).
- Levels are characterized by certain requirements which the entity has to achieve on that level.
- Levels are sequentially ordered, from an initial level to an ending level of perfection.
- During development, the entity progresses forward from one level to the next. No levels can be skipped.

Most of the knowledge management maturity models (Siemens’ KMMM, Paulzen and Perc’s Knowledge Process Quality Model (KPQM), Infosys’ KMMM, Kulkarni and Freeze’s Knowledge Management Capability Assessment Model (KMCA)) are based on the Capability Maturity Model Integration (CMMI) that supports both - a staged representation and a continuous representation. Maturity level 1 (Initial) is characterized by ad hoc and chaotic processes. Maturity level 2 (Managed) is characterized by processes that are planned and executed as per the policy. Maturity level 3 (Defined) is characterized by standardized processes that are used to establish consistency across the organization. Maturity level 4: (Quantitatively Managed) is characterized by managing the process performance through quantitative objectives. Maturity level 5 (Optimizing) is characterized by continual improvement of process performance through continual and innovative process and technological improvements [5].

The difference between KMM models is not only in the definition of the maturity levels, but also in the selection of the key process areas (KPA) that are taken into the consideration. Majority of KMM models uses as a KPA: Culture, Technology, People, Infrastructure, Processes and Content.

3. KNOWLEDGE MANAGEMENT MATURITY RESEARCH RESULTS

The main goal of the research was to analyse the level of the knowledge management implementation in industrial enterprises and to identify KPAs for the knowledge maturity model application. The research was realized in Slovak industrial enterprises in the form of the questionnaire. The questionnaire was distributed into the 350 industrial enterprises, where 86 questionnaires have included for the final analysis. In the analysis we have used descriptive and relational questions. Most of the questions where multiple choice, close – ended questions with the list of predetermined choices and the possibility to add a not listed category. For the identification of the level of the confidence with different statements we have also used nominal scaled questions. This type of the questions was applied for example for the evaluation of the organizational culture. The analysis areas where: knowledge management strategy, knowledge management tools, type of the organizational culture, key enterprise knowledge areas, impulses for the knowledge management implementation, areas where the asset of knowledge management has been recognized, accessibility of enterprise information and others.

In one of the questions we have analysed the attitude of the enterprises to the knowledge management (Fig. 1.). About 19% of enterprises does not apply knowledge management, nearly 23% of enterprises consider knowledge management as an individual activity, same percentage of enterprises have knowledge
Management projects, 24.5% of enterprises have knowledge strategy and about 10.84% of enterprises stated that their business activities are based on the knowledge management. Although more than 50% of enterprises have knowledge management activities (for example existence of knowledge strategy, knowledge policy, knowledge culture or knowledge management tools like knowledge maps, databases for best practices or lessons learned), only about 38% of enterprises stated that they have recognized positive influence of the knowledge management on the business performance (Fig. 2.).

Fig. 1. Knowledge management in Slovak industrial enterprises

Differences have been also in the level of the knowledge accessibility where about 57% of respondents stated that in their companies they have good and very good access to the enterprise knowledge (Fig. 3.) and nearly 15% have poor or very poor access to the enterprise knowledge.

Fig. 2. Knowledge management influence on business performance

In many researches from the knowledge management area was identified clear relationship between the organizational culture and knowledge management [5, 6]. In our research we have analysed information culture orientation (Fig. 4.). About 30% of enterprises have culture oriented on information sharing and information-functional culture.

Fig. 3. Access to the enterprise knowledge

Fig. 4 Information culture orientation

Crucial for the knowledge management implementation is the support of the top management. This support is materialized not only in the knowledge management strategy, but also in the financial support for different knowledge management initiatives and projects. In the Slovak enterprises the level of the knowledge management support from the top management side is deficient: in about 43% enterprises top management does not support knowledge management strategy and in only 4.3% it is the CKO who is responsible for the knowledge management strategy implementation (Fig. 5.).
4. CONCLUSION

Results of the KMM in Slovak industrial enterprises have shown disproportions in knowledge management implementation. On one side there are enterprises that have clear knowledge management strategy and also support of the top management, on the other side there are still enterprises where knowledge management was not recognised as a competitive advantage. Approximately same percentage of the companies that have stated that knowledge management has positive influence on the business performance have knowledge sharing culture orientation.

As a result of the researches on the knowledge management and multicultural management in industrial enterprises [7] at the Institute of Industrial Engineering, Management and Quality we came to the conclusion that it is necessary to analyse KMM in broader context in the areas of the innovations and knowledge management interfaces.

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