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# FOCUS ON INNOVATION AND EDUCATION AS A PREREQUISITE FOR SUSTAINABLE DEVELOPMENT

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**Summary:**

*Basic precondition for organisations wanting to ensure sustainable development is constant development of their human potential, which represents the ability of organisations to generate new ideas, subsequently put into innovations, while they are also able to ensure the key part which is the implementation of these innovations itself. Deliberate creation and usage of human potential is a precondition of building and development of strengths and competitive advantages of organisations. If organisations want to be “innovative” they should have several characteristic features. In our contribution, we focused on two of them – binding engagement of company management in innovations and creation of so called learning organisation environment. In the questionnaire survey conducted at the School of Economics and Management in Public Administration in Bratislava, we focused on finding out whether and in what extent the given characteristics are dealt with by organisations operating in Slovakia. Analysis of 340 organisations implies that organisations realize direct impact of intensity of innovation and education of employees on their sustainable development at the theoretical level, however, their practical focus on individual characteristics is insufficient. Due to the given reason, we recommended a set of questions with a variety of closed answers on the basis of which organisations are able to find out, using summary tables, where their bottlenecks are.*

**Keywords:**

*innovative organisation, learning organisation, present state analysis, human resources management*

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## 1. Introduction

Priority source of effective operation and prosperity of each organisation is human potential. However, this statement cannot be understood in general, its validity lies in how it is



ready for organisation tasks, what its education and culture, ability to cooperate, perception of social and ecological factors of environment etc. are. Systematic creation and usage of human potential is a precondition of building and development of strengths and competitive advantages of organisations. To make it reality, systemically framed management of human resources is necessary, orientating employees to achieve strategic goals and objectives of organisation. (Hitka & Aláč, 2006)

The need of organisations to engage in innovation and education and development of their employees is currently supported also by the European Commission, which issued economic strategy named “*Europe 2020*” on March 3<sup>rd</sup>, 2010 whose declared objective is to recover from the crisis and prepare the European union economy for the following decade. The Commission defined *three key factors of growth* in this strategy (EU Commission, 2010):

- intelligent growth (support of knowledge, innovations, education and digital society),
- sustainable growth (enhancing efficiency of our production concerning sources, with parallel competitiveness increase),
- inclusive growth (increase of labour market participation, gaining of skills, and struggle against poverty).

Individual growth factors fulfilment is directly influenced by educational level of inhabitants which is, apart from state impact, directly influenced also by education and development provided in individual organisations.

Trends in education of employees are directed toward development and education of employees leading to performance increase and quality efficiency measurement under the influence of increasing pressure on constant change of environment. That results in the need of a change from random, respectively unplanned education (i.e. education when necessary courses and trainings are performed only on the basis of an impulse of a need to gain the given knowledge, respectively experience) to general approach to education, to so called learning organisation. The aim of learning organisation is to reach permanent education of employees focused on performance increase immediately but also within

a longer time horizon on the basis of continuously provided feedback. (Stachová & Stacho, 2012)

Process of positive changes requires a mixture of creativity, clear thinking and ability to finalize issues successfully. It requires a close cooperation of people who think with people who can implement an idea in practice. Management of organisation has to create environment with room for development of thoughts, new ideas, and offer means necessary for their implementation. (Čimo & Mariaš, 2006)

If organisation wants to be “innovative” it should have several characteristic features like binding engagement of organisation management in innovations, creative managers, innovative organisational culture, orientation towards customers, open and broad communication in all directions, learning organisation, flexible organisational structure, significant engagement in innovations, implemented talent management, and it should support team work. (Stacho, 2012)

In our contribution, we focused on the following two:

- binding engagement of organisation management in innovations,
- establishment of the environment of so called learning organisation.

Justification and level reached by medium and big organisations operating in Slovakia within the two given characteristics of innovative organisation will be presented in this article.

## **2. Justification of binding engagement of company management in innovations**

Innovation can be defined as practical realisation of a new idea for the purpose of present state improvement. Engagement of management in innovations predominantly lies in the fact that company top management has to clearly demonstrate that it supports innovations and tries to implement positive innovations. Participation of management in innovation implementation is important, as each change in company requires significant expert and power background and support. It practically means a well-elaborated approach towards overall solution as well as individual steps, where one can hardly manage without experts. However, it also means, as with each consulting, having an opportunity to rely on

strong powerful authority inside the company which is able to enforce individual steps even against aversion which can arise. On the basis of experience, compliance between expert and powerful promoter of the project is an essential precondition of success in implementation and sustaining of innovative industrial enterprise. (Stacho, 2011)

Conviction of the necessity to innovate, correctness of innovation procedures and implementation tools always has to be initiated by managing employees. They are decisive bearers and it is possible only through them to convince other employees of the necessity to innovate. However, if there are significant doubts and distrust in the upcoming difficult situations and if there is a revulsion from individual steps, it is impossible to expect acceptance by subordinates. It is a very sensitive part of the complex process which has to be rigidly required by top management in whole management hierarchy, and such approach has to be encouraged in all people inside the company in order to establish room for innovation implementation.

Actual innovation in almost each big company will be defeated by politics, procedures and rituals without real zeal of top management. Chairpersons or CEOs can no longer afford to wait for others to come up with creative changes and innovations. They have to risk and support positive proactive changes. Changing things means to have a leader who will manage the change but changing things before all the others means to innovate. (Adair, 2004)

### **3. Justification of establishment of learning organisation environment**

When considering investments in people, many managers worry that sooner or later they will lose these people. However, there is even a worse thing than investing in training and education of employees and losing them – not investing in their education and development and keeping them. Gaining and keeping top people in a company is currently one of the key roles of company managements focused on innovation. (Kachaňáková A. , 2010)

Learning at the company level is supposed to furnish the company with such preconditions

which help it fulfil tasks set by the company itself as well as those resulting from quickly changing external environment. (Urbancová & Königová, 2010)

Organisational learning predominantly includes learning in action, learning from own experience and searching new possibilities. In order for organisation to be able to learn, it needs to run as an open dynamic system. It needs to be open to external as well as internal impulses. It needs to establish environment without barriers, without boundaries of “us and them” type. (Hroník, 2007)

Learning organisation deliberately uses the learning process at individual, group and whole system levels in order to transform the organisation gradually towards the direction satisfying interest groups in an increased extent. (Tichá, 2005)

Learning is also nowadays perceived as a necessary evil in many organisations, representing costs which organisation has to exert for employee to be able to press the right button of a new machine. However, successful innovation in organisations depends on whether management is able to perceive learning as an investment in creating an organisation understanding why innovations are carried out and able to manage innovation-related processes.

### **4. Research characteristics**

Objective of the article is to present results of the research conducted in the period from February 2011 to May 2011, aimed predominantly at finding out whether and how human resources management is currently implemented in organisations operating in Slovakia. Regarding extent of the given issue, research was divided into ten partial objectives, while one of them was to identify whether organisations realise the importance of focusing on binding engagement of company management in innovations and on establishment of so called learning organisation environment. This article is going to deal with results of this partial objective.

Set of respondents comprised 340 organisations operating in Slovakia, while the main condition posed on the organisation was the size of at least 50 employees.

Overall size structure of interviewed organisations is given in Figure 1, implying that organisations with the number of employees between 50 and 300 were most represented in the research.

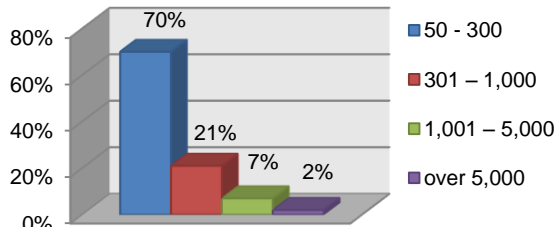


Fig. 1. Size structure of the analysed organisations

### 5. Binding engagement of managements of organisations operating in slovakia in innovations

For the purpose of finding out whether company managements support innovation implementation, we were primarily interested in whether they realize their importance, and therefore we asked: "Do you consider important that your organisation deals with innovations (in any sphere)?" Answers to this question sounded more than positive, as 93 % of executive employees gave positive answer to it. Remaining 7 % stated that it would be financially demanding for them to innovate in any sphere and they do not know if their company survives.

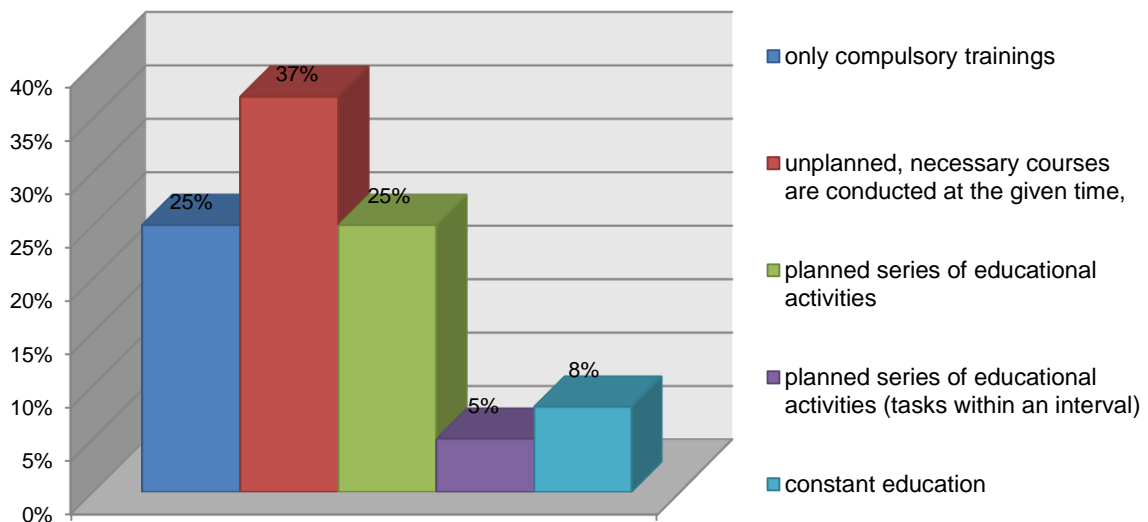


Fig. 2. Formal system of employee evaluation in interviewed organisations

As a result, they do not deal with the issue of innovations at all. From the aforementioned we assumed that even if not all 93 % of executive employees at least majority of them would tend to engage in innovation implementation. However, already second answer disconfirmed our assumption.

The second question: "Has your company elaborated documentation defining mission of organisation, corporate strategy and objectives in the sphere of innovations?" We focused on finding out existence, respectively absence of individual documents, because if management is engaged in the support of innovations this objective to innovate in the company has to be

necessarily defined in corporate strategy, and it is corporate strategy creation on which management has a direct impact. Research showed that corporate mission and corporate strategy are defined in writing, respectively in non-written form in approximately 85 % of analyzed companies, however, innovation objective itself is defined in writing in only 23 % of them (Figure 2). These 23 % represent only one fourth of companies which answered positively to the first question regarding importance of innovation, which is very few, since we do not consider innovation objective definition itself significantly financially demanding. Confidence, respectively realization of importance of

innovation need by company management is essential.

Table 1. Percentage of companies with elaborated corporate mission, strategy and innovation objective

|                      | Yes, document in written form | Yes, in non-written form | No  |
|----------------------|-------------------------------|--------------------------|-----|
| Corporate mission    | 71%                           | 13%                      | 16% |
| Corporate strategy   | 69%                           | 18%                      | 13% |
| Innovation objective | 23%                           | 27%                      | 50% |

### 6. Establishment of learning organisation environment in organisations operating in Slovakia

Within establishment of learning organisation environment, we were primarily focused on employee evaluation, since it is possible to perceive it as a basis of streamlining human resources in company. It serves to obtain information and specify present state of the level of employees and primarily to real determination of objectives for future human resources management. Appropriately elaborated system of employee evaluation results in correct specification of educational process of employees, which subsequently implies their enhanced working performance and increased motivation of employees regarding work quality. Last but not least, it is a well-established evaluation system which enhances justice, transparency and effectiveness in employee remuneration. Each of these features has a direct impact on attitude of employee towards innovations in their company. Answers to question: "Do you have a formal system of employee evaluation for the following employee categories? (management, experts and technicians, administrative employees, manual workers)" implied that almost 80 % of interviewed organisations have established a formal evaluation system (see Figure 2).

Within finding out whether evaluation system is focused on all employees or only on several of them, we asked organisations declaring to have

established a formal system of employee evaluation the following question: "Do you have a formal system of employee evaluation for the following employee categories?" Answers of interviewed organisations showed that employee evaluation is in the greatest extent carried out for the managerial position (see Table 2). More than 60 % of interviewed organisations declared that they have established a system of employee evaluation for all employee categories.

Table 2 Percentage of organisations with elaborated formal system of employee evaluation for individual employee categories.

| Do you have a formal evaluation system for: | % of organisations |
|---|--------------------|
| Managers                                    | 82%                |
| Experts                                     | 74%                |
| Administrative employees                    | 79%                |
| Manual workers                              | 76%                |

We subsequently focused on finding out the level of employee education and their will to share gained knowledge. It can be generally applied that effective education needs to be well-arranged, systematic and continuous within a repeating cycle. Answers of interviewed companies showed that 25 % of them use so called organized approach towards education of their employees, which can be marked as the third level of five-level scale, on whose end is so called learning organisation, currently denoted as the most appropriate and purposeful way of education. More than 60 % of companies indicated lower-level approaches towards education, particularly 37 % indicated so called random approach, and 25 % indicated so called zero alternative where education is restricted only to compulsory trainings stipulated by law or directives. Only 5 % of companies use the approach of structured education concept and 8 % indicated their approach towards education as learning organisation concept.

We were interested in answers to question: "To what extent is knowledge shared in the organisation?" not only to find out content and frequency of knowledge spreading in organisations but also to find out what value knowledge has for employees. The research

showed that almost 30 % of respondents stated that knowledge at individual departments is shared differently, and therefore they marked two options from the offered scale of answers, while the answers were significantly contradictory in all cases.

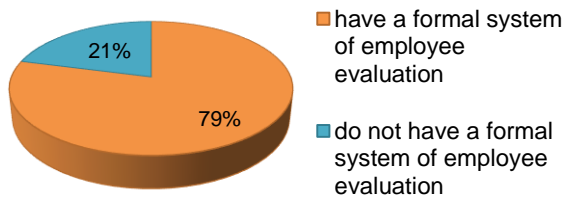


Fig. 3. Graph showing educational process in interviewed companies

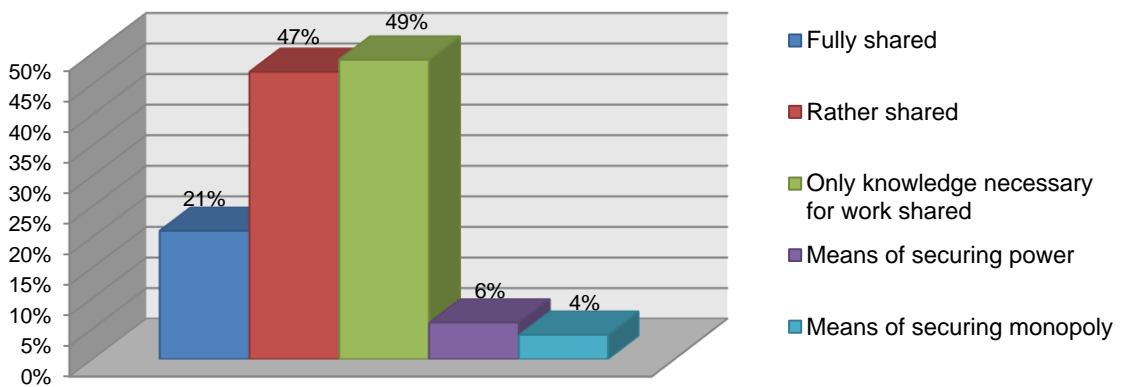


Fig. 4. Extent of knowledge sharing in interviewed organisations

### 7. Research evaluation and recommendations for present state improvement

Answers of interviewed organisations operating in Slovakia showed that more than 90 % of managing employees realize the importance and need of innovation in their organisation, however, their engagement in written definition of particular innovation objective was not so significant. Research showed that only 23% of medium and big companies had defined innovation objective, while its definition can be considered company's first step in innovation "initiation" and therefore if management engages in innovation implementation it should insist on this objective definition as necessity. This fact points out that companies usually do not deal with innovative

Findings resulting from this question sound significantly negative, since most often shared knowledge is knowledge necessary for work (Figure 4). This variant is followed by answer that knowledge is rather shared, and only 21 % of organisations marked that their knowledge is fully shared. In 10 % of organisations, knowledge even becomes a means of securing power and monopoly, for fear of working position loss.

organisation implementation, although they clearly realize the need to innovate.

The following characteristic feature of organisation's focus on advancement and innovation implementation is the need of change from random, respectively unplanned education towards holistic approach. It means organisation's focus on education at a higher, respectively more complex level, i.e. creation of learning organisation. Objective is to reach constant education focused on performance increase at the moment as well as in the long-term on the basis of continuous feedback focused on "modifying objectives", i.e. learning on the move. However, research showed that only 13 % of respondents are successfully approaching learning organisation.

In order to become learning organisation, it is also necessary to create atmosphere of permanent

Table 3 Questions analyzing the sphere of binding engagement of company management in innovations, with scoring evaluation

| QUESTIONS AND ANSWER VARIANTS   |
|---|
| <b>1. Does your company have an elaborated innovation strategy?</b>   |
| a) yes, in written form   |
| b) yes, in non-written form   |
| c) no   |
| <b>2. Company employees perceive changes (in production, services, in the sphere of working potential formation):</b>   |
| a) as a challenge   |
| b) sometimes as a challenge, sometimes as a threat  |
| c) as a threat  |
| <b>3. How does company management present its approach towards innovations?</b>   |
| a) management declares its intention to advance through innovations in every turn   |
| b) management approves of innovations, however it does not present the idea at all company levels   |
| c) management does not present any support of pro-innovative employee behaviour in any way  |
| <b>4. How does company management encourage employees to come up with innovative solutions?</b>   |
| a) management regularly organizes competitions in proposing innovative solutions in different spheres   |
| b) management does not organize any competitions in innovative proposals, however supports eventual innovative solutions  |
| c) management does not organize competitions in innovative proposals and does not support any eventual innovative solutions by employees                            |
| <b>5. What is the behaviour of company management in case of aversion of employees upon innovation implementation?</b>  |
| a) company management supports innovation implementation in whole management hierarchy, and is willing and able to support it even in case of aversion of employees |
| b) in case of aversion of employees upon innovation implementation, manager implementing the innovation is not supported by management                              |

Source: (Stacho, 2012)

educational development which is directly conditioned by team learning, and thus mainly by full knowledge sharing within the organisation, focusing on team. However, the research showed that knowledge is fully shared in only 21 % of respondents.

For the purpose of analysis of the level of binding engagement of organisation management in innovation, the organisation should answer 5 questions (Table 3) and subsequently record the answers in the Table 3. On the basis of the aforementioned, organisation can determine its level itself, and thus determine where its bottleneck is within the given characteristics.

Table 4. Table revealing bottlenecks in the sphere of engagement of company management in innovations

| No. of question / answer | 1 | 2 | 3 | 4 | 5 |
|--------------------------|---|---|---|---|---|
| very good                | a | a | a | a | a |
| standard                 | b | b | b | b |   |
| bad                      | c | c | c | c | b |

Source: (Stacho, 2012)

For the purpose of analysis of the level of establishing so called learning organisation environment, we also compiled a question summary for organisation to answer (Table 5) and subsequently record answers in the Table 6.

Table 5 Questions analyzing the sphere of learning organisation implementation, with scoring evaluation

| QUESTIONS AND ANSWER VARIANTS  |
|--|
| <b>1. Are company employees willing to learn?</b>                        |
| a) yes, they suggest courses themselves                                  |
| b) yes, but courses have to be suggested by company                      |
| c) no, they aren't, and they avoid courses                               |
| d) no, they aren't, and the company is not interested in their education |
| <b>2. Knowledge in company is:</b>                                       |
| a) fully shared  |
| b) rather shared   |
| c) only knowledge necessary for work is shared                           |

| QUESTIONS AND ANSWER VARIANTS  |
|--|
| d) a means of securing power, respectively it is not shared for fear of working position loss  |
| <b>3. Company uses mainly these educational methods:</b>   |
| a) self-education, e-learning, outdoor learning, internship in a foreign subsidiary, coaching, rotation at workplace, mentoring, lectures, work on projects, videoconferences, assessment centre |
| b) self-education, e-learning, outdoor learning, mentoring, rotation at workplace, lectures, work on projects  |
| c) self-education, e-learning, rotation at workplace, mentoring, lectures  |
| d) self-education, lectures  |
| <b>4. How is employee education interconnected with carrier growth strategy?</b>   |
| a) It is exactly specified which courses, certificates and trainings employee has to attend and complete in order to have an opportunity of carrier growth.                                      |
| b) It is only generally defined what type of courses, certificates and trainings employee should attend and complete in order to have an opportunity of carrier growth.                          |
| c) It is not defined which courses or certificates employee needs for carrier growth.  |
| <b>5. How is education carried out in your company?</b>  |
| a) permanent education   |
| b) organized educational activities planned over whole year  |
| c) trainings and courses in case they are needed   |
| d) only compulsory trainings   |
| <b>6. Does your company evaluate education effectiveness?</b>  |
| a) yes, education is systematically evaluated  |
| b) yes, but we do not have an elaborated evaluation system   |
| c) no  |

Source: (Stacho, 2012)

On the basis of the aforementioned, organisation can determine its level itself, and thus determine its bottlenecks within the given characteristics.

Table 6 Table revealing bottlenecks in the sphere of learning organisation implementation

| No. of question / answer | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------------|---|---|---|---|---|---|
| very well                | a | a | a | a | a |   |
| above standard           | b | b | b | b | b | a |
| below standard           | c | c | c | c | c | b |
| bad                      | d | d | d | d | d | c |

Source: (Stacho, 2012)

## 8. CONCLUSION

Organisations which want to be competitive need constant participation in innovative transformation process. This process can be successful only in case that organisation creates environment where employees will be able and willing to adapt to constantly changing conditions. Innovative environment in organisation can be created and subsequently retained only under constant active support by management who does not support this environment in organisation only formally but actively encourages and motivates employees by different directed activities to share information, and in their permanent development and education. (Kachaňáková & Stachová, 2010)

The research we conducted showed quite negative findings, particularly:

- only 23 % of medium and big companies operating in Slovakia had defined innovation objective,
- only 13 % of respondents is successfully heading towards learning organisation,
- knowledge is fully shared in only 21 % of respondents.

With regard to found facts, we proposed a set of questions with a variety of closed answers for the organisations regarding both analyzed characteristics of innovative organisation, i.e. for binding engagement of company management in innovations and establishment of so called learning organisation environment, based on which organisation can find its bottlenecks in combination with using the summary table.

We see justification of the given research part in practice particularly in revealing irresponsible behaviour of organisations operating in Slovakia in directing and advancing in the sphere of

education and innovation. On the basis of our presentation of obtained results, organisation managements can compare their own present state within the given spheres to state that interviewed organisations declared, and subsequently consider options of its enhancement. We also consider as contribution the compilation of a block of questions for both analyzed characteristics in combination with the

summary table, based on which organisations can find their bottlenecks in individual spheres. At the same time, we consider as necessary to continue in this research in order to improve, modify, enhance and develop individual approaches on the basis of new information obtained from interviewed organisations.

### Works Cited

- 114/EC, E. (2008). *On the Identification and Designation of European Critical Infrastructures and Assessment of the Need to Improve their Protection*. Brussels.
- Adair, J. (2004). *Effective Innovation*. Nový Zlíčov: Alfa Publishing.
- Čimo, J., & Mariaš, M. (2006). *Innovation Management*. Bratislava: GeoPARNAS.
- EU Commission, .. (2010, 03 03). *Europe 2020: Commission proposes new economic strategy in Europe*. Retrieved from Europa Press releases RAPID : [http://europa.eu/rapid/press-release\\_IP-10-225\\_en.htm](http://europa.eu/rapid/press-release_IP-10-225_en.htm)
- EU, C. o. (2011). *Interinstitutional document (working document)*. Brussels: EU.
- Grossi, P., & Kunrenther, U. e. (2005). *Catastrophe Modelling*. Berlin: Springer.
- Hitka, M., & Aláč, P. (2006). Combination of Evaluation Methods in Employee Evaluation From the Point of View of Manufacturing Company Management. *Management in Theory and Practice*, 1, 51-58.
- Hochrainer, S. (2006). *Macroeconomic Risk Management against Natural Disasters*. Wien: DUV.
- Hroník, F. (2007). *Development and Education of Employees*. Praha: Grada Publishing.
- Kachaňáková, A. (2010). *Organisational Culture* (1 ed.). Bratislava: Iura Edition.
- Kachaňáková, A., & Stachová, K. (2010). Present State of Employee Permanent Education in the Context of Individual Slovak Regions. In V. Cibáková, & I. Malý, *Dopady vybraných verejných politík na regionálny rozvoj v Slovenskej a v Českej republike* (pp. 21-28). Bratislava: crr.sk.
- Keeping the Country Running Natural Hazards and Infrastucture*. (2011). Retrieved 12 12, 2012, from [www.cabinetoffice.gov.uk](http://www.cabinetoffice.gov.uk)
- Nr. 45/2011 About Critical Infrsastructure. (2011). *List of Bills*, 436-450.
- Rinaldi, S., & all., a. (2001). *Identifying, Understanding and Analyzing \*Critical Infrastructure Dependencies*. Retrieved 12 10, 2012, from [www.ce.cmu.edu](http://www.ce.cmu.edu)
- Stacho, Z. (2011). Innovations and Innovation Culture, or How to Survive. *International Masaryk Conference for Doctoral Students and Young Scientists 2011 (MMK 2011): Textbook of Contributions*. Hradec Králové, Czech Republic: Masaryk University.
- Stacho, Z. (2012). *Proposal of Complex Evaluation Methodology of Innovative Industrial Enterprise Characteristics Level. [Doctoral Thesis]*. Trnava: Slovak Technical University in Bratislava. Faculty of Materials Science and Technology; Institute of Industrial Engineering, Management and Quality.
- Stachová, K., & Stacho, Z. (2012). Condition of effective implementation of innovation is employee education In: . *Menadžment 2012 : Zbornik radova Proceedings* (pp. 644-647). Beograd-Mladenovac: ICIM+.
- Tichá, I. (2005). *Learning organisation*. Praha: AlfaPublishing.

Urbancová, H., & Königová, M. (2010). Control and Its Role in the Process of Ensuring Knowledge Continuity. *Journal of Modern Accounting and Auditing*, 6(7), 38-45+57. Retrieved from [http://www.davidpublishing.com/journals\\_info.asp?jld=1020](http://www.davidpublishing.com/journals_info.asp?jld=1020)

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