

## **Effective Exploitation of Human Resources Potential in Innovation Aimed at Ensuring Production Sustainability**

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### **Abstract**

Effective exploitation of the human resources potential in innovation efforts of organisations in an environment characterised by a high degree of turbulence is becoming fundamental in terms of maintaining competitiveness. Different levels of employee engagement in innovation are characterised in the paper. The present situation in organisations operating in Slovakia is subsequently analysed and a simplified analytical instrument for the needs of organisations is proposed, offering a possibility to identify bottlenecks preventing them from developing their innovation potential.

**Key words:** innovation, competitiveness, engagement of employees in innovation, potential of human resources, innovation model with high engagement level

### **1. Introduction**

Competitive advantage is an actual capability which is not only reflected in an ability of a company to design and develop a product but also to produce and sell it for more advantageous prices and (or) in greater amounts or quality than competitors. It is not provided spontaneously by external environment but is also dependent on an ability of internal environment of a company to identify and response flexibly to changes of external conditions (Slávik 2013). Tidd (2007) and Franková (2011) deal with factors affecting the quality of internal environment with regard to exploitation of human potential of an organisation in innovation, highlighting permanent education and development of employees, i.e. their preparation for changes, which are significant in terms of a speed of implementing changes, while pointing to a necessity to create organisational culture encouraging creativity and

creation of innovation. Employees in such an environment are positively encouraged to creative behaviour on the one hand (Kim, Lee, 2011) and they feel safe in terms of their willingness to undergo a certain risk without worrying about sanctions in an event of failure on the other (Sanner, Bunderson 2015; Franková 2003).

Organisations go through several stages with different engagement levels upon engaging their employees in innovation. Tidd (2007) defined *five stages of building an innovation model with a high engagement level*, the **first stage** being so called *unconscious engagement*, in which people occasionally participate in innovation (e.g. in cases of defective new products), however without a formal process encouraging such behaviour. Managers frequently apply authoritative methods of management (Kampf, et al 2014), which results in the fact that when employees submit innovative proposals they are reviewed by management before even starting considering their implementation (Stachová, Stacho 2013). If employees participate in innovation, it is typically only because they are at the right time on the right place, however frequently without even realising that they are participating in a form of innovation. In the **second stage**, processes focused on troubleshooting are developed. Proposed ideas are implemented in the greatest possible extent and employees are subsequently remunerated or otherwise motivated (e.g. creation of creative environment (Collins, Amabile 2008), encouragement of open communication with effective share of information (Franková 2011), application of instruments confirming the competence of employees (Collins and Amabile 2008)), thus *creating a habit of engagement of employees* in innovation. The **third stage aims** at *interconnecting the habit with corporate strategic objectives*, which practically means that corporate strategy is communicated within the whole company from management downwards and is divided into particular goals in the context of engagement in innovation-related activities. Strengthening the powers of individuals and groups upon experimenting and their own initiatives, so called *empowerment*, are the priorities of the **fourth stage**. Maximum encouragement of effective freedom of individuals and teams in decision-making (Stachová, Stacho 2014). In the **fifth stage**, *everybody is fully engaged* in experimenting and improvements, in sharing information

and creating an actively learning organisation. In this stage, values connecting people and enabling their participation in development of their organisation are created and shared, i.e. organisational culture encouraging creativity and innovation is created. As long as corporate management succeeds in creating pro-innovative environment it is capable of taking innovative decisions quickly (Pettrakis et al. 2015) which is considered a significant competitiveness factor in the present-day turbulent environment (Cantwell 2009; Clark, Guy, 1998).

Effective exploitation of the human resources potential in innovation is based on the fact that although individual employees might be capable of generating only restricted innovations, the summary of such activities might have far-reaching consequences (Bessant 2003). It is therefore obvious that the priority task of management is to create an environment encouraging creativity of employees and to create an atmosphere where dialogue among managers and other team members is of importance, and where interests of employees in the issues related to decision-making and management are respected. Such a motivating approach creates room for innovative proposals of employees (Çekmececioglu, Günsel, 2011), for work of innovative teams (LaRoche, 2005), or suggestions for improvement (Clark, Guy, 1998).

## **2. Materials and methods**

The research necessary for elaboration of this paper was conducted from 2010 to 2014 at School of Economics and Management in Public Administration in Bratislava in collaboration with Faculty of Materials Science and Technology in Trnava STU in Bratislava. Organisations participating in the research were questioned in a form of questionnaires personally delivered to a person responsible for human resource management in the given organisation. The questionnaire survey contained approximately 90 questions, and the results obtained from answers to the questions focused on analysing the present focus of organisations on engagement of employees in innovation were used for the needs of this paper.

Two stratification criteria were determined to identify a suitable research sample; the first criterion was a minimum number of employees of an organisation, which was determined to 50 employees. The second

stratification criterion was a region of operation of a company, while the structure of the research sample was based on the data provided by the Statistical Office of the Slovak Republic.

According to the Statistical Office of the Slovak Republic, the number of organisations with 50 and more employees was between 3,261 and 3,359 over 2010 - 2014. The regional structure of organisations with over 50 employees in the given years is shown in Table 1.

**1. Regional structure of organisations with more than 50 employees**

<b>Region</b>	<b>Whole Slovakia</b>	<b>Western Slovakia</b>	<b>Central Slovakia</b>	<b>Eastern Slovakia</b>
<b>Districts</b>	All districts	BA, TT, TN, NR	BB, ZA	KE, PO
<b>Number of organisations 2010</b>	3,308	2,031	655	622
<b>Number of organisations 2011</b>	3,359	2,061	666	632
<b>Number of organisations 2012</b>	3,295	2,025	652	618
<b>Number of organisations 2013</b>	3,268	2,017	645	606
<b>Number of organisations 2014</b>	3,261	2,005	644	612

*Source: elaborated based on data of the Statistical Office of the Slovak Republic*

Identifying an optimum research sample from the given base set of organisations, Confidence Level was determined at 95 % and Confidence Interval of the results was determined at  $H = \pm 0.10$ . On the basis of the aforementioned criteria a relevant research sample for individual regions of Slovakia was determined in the analysed years, which are provided in Table 2.

**2. Size of research sample for individual regions of Slovakia**

<b>Region</b>	<b>Western Slovakia</b>	<b>Central Slovakia</b>	<b>Eastern Slovakia</b>
<b>Districts</b>	BA, TT, TN, NR	BB, ZA	KE, PO

<b>Number of organisations 2010-2014</b>	2,005-2,061	644-666	606-632
<b>Size of research sample</b>	92	84	83

*Source: Own elaboration*

Approximately 500 organisations participated in the research every year, however only approximately 65 % of the questionnaires were received comprehensively completed due to a great extent and form of data collection. Subsequently, 259 organisations were selected as the optimum research sample determined on the basis of the stratification criteria.

### **3. Results**

Our research was focused on analysing the attributes of motivation and level of engagement of employees in innovation processes. With regard to the fact that one of the underlying assumptions of an innovative organisation is an ability of their managers to enthuse their subordinates about changes, one of the questions was dealing with whether their organisations create room for their engagement in innovation, primarily from the viewpoint of a purposeful regulation of their innovative behaviour towards an organisational strategy by both remuneration and encouragement of knowledge share.

In relation to the level of employee engagement in innovation, the questionnaire was also dealing with whether employees are perceived as a preferred source of innovation initiative, or whether all employee categories are engaged in innovation.

Focus of organisations on motivation and engagement of employees in innovation	Share of organisations in %				
	2010	2011	2012	2013	2014
Employees are regularly engaged in coordination with a focus on strategic objectives	19	21	25	29	36
Knowledge of employees is monitored, evaluated and remunerated	42	33	33	37	36
Employees are encouraged to fully share their knowledge	13	6	11	7	14
Preferred sources of innovation initiatives are employees	61	61	62	63	70
All employee categories are engaged in innovation	32	33	31	48	41

***Motivation and engagement of employees in innovation***

*Source: Own research*

The research indicated that the level of employee coordination, i.e. their engagement in innovation activities aimed at achieving corporate strategic objectives in the monitored period was gradually growing from 19 % in 2010 to 36 % in 2014, however most of the organisations only engage their employees in innovation processes occasionally, upon occurrence of failures in new processes, or employees are engaged in innovation regularly however without a common strategy-based coordination. In this relation, remuneration for knowledge of employees, reaching approximately 40 %, or share of all information encouraged by management, were among the monitored attributes. The research showed that employees are motivated to share information in only a minimum number of organisations without any significant improvements recorded in the monitored period.

Positive findings of the research included the fact that organisations most frequently obtain innovation initiatives from their employees (in 61 % - 70 %), however the result was not as positive upon finding out whether all employee categories are used for this purpose.

**4. Recommendation**

Based on findings, the participating organisations are recommended to apply a simplified analytical instrument created by us, helping them identify their bottlenecks in motivating employees to creativity and levels of their engagement in innovation. Revealed bottlenecks can be an incentive for organisations to adopt remedial measures helping them boost their innovation potential and competitiveness.

The following table provides the proposed instrument, dealing with the motivation of employees to creativity and levels of their engagement in innovations.

**4. Questions analysing motivation of employees to creativity and levels of their engagement in innovation with scores**

<b>Questions and response options</b>
<b>1. Does the management show support of engagement of employees in innovative proposals?</b>
a) Yes, constantly
b) Yes, occasionally
c) No
<b>2. Does the company use its employees in search for innovations?</b>
a) Yes, it uses all employees by inviting them to participate in different competitions or establishing a bonus remuneration in relation to successful innovations
b) Yes, but only some employees are used (specialised departments, project teams)
c) Yes, there is a possibility to submit a proposal to a superior or through an anonymous box, however mostly without implementing any of such suggestions
<b>3. How and when are employees engaged in innovation?</b>
a) At every occasion (creation of ideas, planning of implementation, implementation itself) with common coordination based on corporate innovation strategy
b) Regularly, however without common coordination based on corporate innovation strategy
c) They are only engaged unconsciously (upon occurrence of failures in implementing new processes)
<b>4. Are innovative proposals of employees checked and approved by the management of the organisation?</b>

a) No, employees have full confidence of the management
b) Yes, they are approved, however employees have full confidence of the management upon their implementation
c) Yes, they are thoroughly checked and approved by the management
<b>5. How does the management proceed in an event of a failure upon implementing innovations?</b>
a) The organisation tries to remove such failures and prevent their repetition, and employees revealing such failures are remunerated in some cases
b) The organisation tries to remove such failures and prevent their repetition, and employees responsible for such failures are not sanctioned
c) The organisation tries to remove such failures and prevent their repetition, and employees responsible for such failures are sanctioned

Source: Author

Table 5 aims at revealing bottlenecks, as it enables to recognise a particular part of the area of engagement in innovation which needs to be focus on in order to achieve a higher level.

#### 5. *Revealing bottlenecks in employee engagement in innovation*

Question number/answer	1	2	3	4	5
excellent	a	a	a	a	a
average	b	b	b	b	b
insufficient	c	c	c	c	c

Source: Author

The proposed method results from an analysis and enables, in a short time interval, to carry out a self-assessment of an actual level of an organisation as well as identify bottlenecks preventing them from developing their innovation potential.

### 5. Conclusion

The submitted paper underlines a need of organisations to comprehensively focus on motivation of their employees to creativity and on the level of their engagement in innovation. It analyses the focus of organisations operating in Slovakia on the given issue and provides an instrument which is recommended in this relation. Theoretical contributions of the paper include a set of questions aimed at analysing the fo-

cus of organisations on motivation of their employees to creativity and levels of their engagement in innovation. The main practical contribution of the paper is a proposed method evaluating the focus of organisations on motivation of their employees to creativity and levels of their engagement in innovation, and a possibility of its immediate application in organisations in a form of identification of bottlenecks preventing them from developing their innovation potential, and the levels of both their focus on motivation of their employees to creativity and their engagement in innovation.

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