



## ASSESSMENT OF EMPLOYEE'S KNOWLEDGE POTENTIAL IN TRANSPORT SECTOR

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**Abstract.** Although plenty of scientists have researched the theoretical and practical problems of assessing knowledge potential for a few decades, the unified and single methodology of assessment has not been accepted. Discussions on the factors having the strongest impact on the knowledge potential of employees have been processed. The method stated in this article is adopted to transport sector. An evaluation of specifications for the factors making a real impact helped with building a model including such factors as educational level, occupational experience, occupation level, dutifulness, decision making and responsibility level, self-support at work, work culture, difficulty level at work, motivation, employee's influence on achieving organization's aim and the level of using technology at work. The specifications of the above introduced factors have been prepared. Practical acceptance of the model has been researched by an experiment conducted in a transport company.

**Keywords:** knowledge potential, employee, transport sector, assessment, method, factors.

### 1. Introduction

A quantity of freight flows is rapidly growing worldwide. This occurrence is naturally influenced by the growth of economy. Besides, such situation causes various problems. According to the calculations of the Directorate-General for Energy and Transport (DG-TREN), the expansion of the European Union in 2004, will increase the growth of the freight flows in the next ten years in 60%. These calculations were made considering the natural growth of economy. The growing amounts of freight transportation influence higher emissions of CO<sub>2</sub> into environment made by transport means. On the other hand, the EU uses 98% of energy obtained from natural resources 90% of which is imported from the non – EU countries. By taking into account the prognosis that the demand of oil will increase in about 80% by the year 2030, the EU may face lack of energetic resources since the biggest sources are found in the politically unstable Near East region. Irrational transportation demands more expenses. Consequently, this factor makes the EU goods less marketable. A part of transport means travel with unfulfilled capacity, without taking freight to the back journey. Moreover, the most economical and eco-

logical mean of transport is seldom chosen. Taking into account the above mentioned cases, we will obviously find out that the consumption of energetic resources exceeds the most effective possible option of transporting the same quantity of freight by using more economical and ecological means. Need to decrease CO<sub>2</sub> emissions and to become less dependent on the energetic resources supplied by the unstable world regions in general forces to work out the new solutions to efficiency in transports and logistics. A part of organizations introduced the latest technologies into their own activities and gained benefit against rivals. Wider and more intensive usage of innovations basically depends on human resources. Human resource potential in Europe is divided into quite unequal proportions. Employee's knowledge potential became the most important factor in reaching higher marketability in comparison to rivals, especially in such sectors as transports (Fannon, 2006; Palšaitis, Bazaras, 2007). The European Commission has declared Benchmarking Logistics as one of the subjects in the EU Seventh Framework Programme (FP7) in the year 2007. Logistic operations included in this programme will be regulated by a complex of quality standards where human resources are taken as an essential factor.

First, in order to purposefully develop employee’s knowledge potential in transport and logistics sectors, the situation has to be completely objective assessed. The carried out research proves the possibility of such action as we adopted our method of assessing knowledge potential (Bivainis 2006; Morkvėnas *et al.* 2006) to transport sector. This article discusses the main aspects of research.

**2. Methodical preconditions for assessing employee’s knowledge potential**

The expansion of transport is oriented to the systems based on knowledge and the latest technologies. Some published works assessed knowledge of organizations and employees and researched the use of knowledge potential by the organization. However, the exact adaptation of theory and practice to transport sector has not been developed. According to Bell (1973), Agyris (1993), Drucker (1993) and Bornemann, Sammer (2003) the need for such investigations is caused by changing social structure. The only way of keeping the balance of growing variety and levelling the differences between interests in an organization is a constant accumulation of knowledge potential (by communicating, working, studying). Such situation leads to coordinating different interests and improvements in work managing. Thus, this means that finding formal solutions is no longer enough. The need for having a method of managing knowledge potential appears. These methods are supposed to improve the realization of individualized and very specific needs for employees. Also, it is aimed at creating a collective medium where all employees are able to find the gaps that might be fulfilled with their knowledge potential. In this way, managing knowledge potential becomes vital in modern managing of an organization. There are two main trends towards organizing the management of knowledge potential (Fig. 1):

- 1) explicit knowledge managing – by fitting new technologies;
- 2) tacit knowledge managing – by improving the level of work organization.

To ensure the effective management of knowledge potential, we have to know the sort of knowledge potential the organization disposes. The ideas pushed forward in scientific work *Organizational competency management* (2006) by Tobias Ley agree with our position. The created model is based on various criteria summarised in the competency matrix. This scientific work has got a great practical value, although the model is barely adoptable to a different type of an organization since the essential data was obtained from a deputy of engineering in a big transport company. Wide range assessment has been conducted. The matrix way of evaluation is used and mostly oriented to specific skills and knowledge for task making.

The models of knowledge managing used for commercial purposes are getting more popular in practical usage. After an analysis of the organization elements using the exact model experts arrived at a solution how to improve the management of organization’s knowledge. The experts from the Knowledge Company, Inc. (2008) have developed a business plan called *oriented pack*. The model embraces the following essential parts: employees, strategy, organization and structure, culture, change management, studying and learning, business processes and possible technologies.

There are several private competency assessment centres in Lithuania, for instance, CV Market Employee’s competency assessment centre. However, the methods used by such centres feel lack of analytical evaluation and company’s inner and outer environment integration into assessment model is not taken into account. Consequently, such situation makes their methods imprecise. Various game form methods are adapted to amplify em-

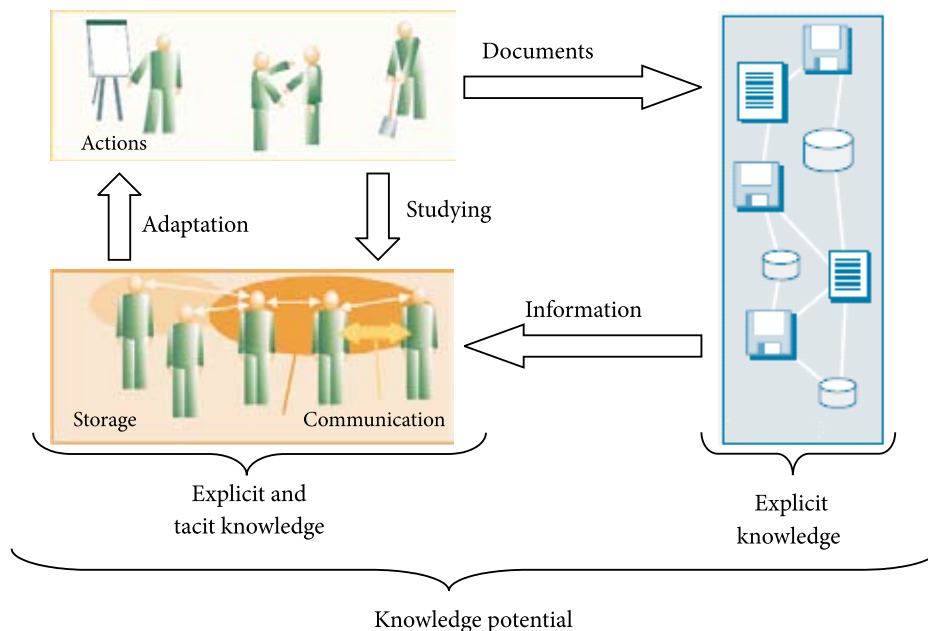


Fig. 1. Common scheme of forming knowledge potential

ployee's auditions. Some of those are group discussion, managing role modelling, role plays, presentations, creating proposals, solving working difficulties, case study, analysis, interview and tests. Characteristics taken into account are as follows: ability to lead, a general influence on people, planning and organizing efficiency, ability to delegate, employee training and development, negotiating skills, presentational skills, flexibility, communicational skills, self – confidence, client – orientation, conflict solving skills, creativity, analytical skills, aim – orientated, decision making, framework skills. Company heads, project managers, specialists, managers, administrators and other staff members are assessed in such competency centres. Individuals and groups are offered the possibility of personal evaluation.

Wissensmanagement Forum organization has published a knowledge management guide in its edition

*An Illustrated Guide to Knowledge Management* (2003) which describes the latest works of the scientists from all over the world. The guide includes various matrix tables describing organization's activity. These tables are dedicated to assessing a knowledge managing process. The main factors making impact on the management of organization's knowledge are person, communication, organization's inner background and synergy. The main amplifying indexes are described to each of the above mentioned factors (knowledge consuming, team work building etc.). As showed in the knowledge level assessment fragment (Table 1), the aims of target groups (owners, consumers) are also stated. Factors were analyzed at different levels (knowledge, process, data and aim levels). Testing is performed applying experimental assessment.

These methods are seriously imperfect, because an employee as the main factor in organization's activity is collated with diverse organization's processes, systems, technologies or even too much attention in assessment is paid to psychological games. We suppose that more exact methods are those evaluating the employee as the main factor and all surrounding factors (technologies, processes etc.) are taken into account only as a tool that amplifies

reaching organization's aims and has an effect on creating value added knowledge potential (synergy effect).

### 3. Factors influencing employee's knowledge potential

Factors influencing employee's knowledge potential presented in Table 2 are based on our investigations Bivainis 2006; Morkvėnas et al. 2006). In order to adapt these factors to transport sector, we have to consider that employees operate in a specific and unordinary difficult medium. Our suggested scale of factors provides the ability to evaluate employee's knowledge potential reached in transport sector. The essential differences between economy sectors are assessed by taking into account the different influences of separate factors.

### 4. The content of transport sector employee's knowledge potential

According to Stock, Lambert (2001) and Jahre, Hatteland (2004) the most important factors in choosing a transport company are the cost of transportation and certainty of service. Reliability, delivery time, transportation options, safety and reachability are the factors making a company more marketable. Therefore, the employees working in this sector must have a high knowledge potential. It ensures the client that the highest quality services will be provided. Besides a professional knowledge gained at work and university an employee has to know the varieties of IT practical use, maintain a high level of work order and be able to make fast and self-depended decisions. In addition, an acceptable salary based on successful work results is an important point.

A summary of Koehurst et al. (1999), Tasey (2000), Bredillet (2003) research discloses the following skills and knowledge requested from an employee of transport sector: to project technological freight transportation process, to project passenger transportation process, to implement IT in transportation technological process, to evaluate the project results of transportation process, to analyse and take into account business environment and capabilities,

**Table 1.** Assessment of organization's knowledge management process (meanings of influence between stimulating indicators and objective assessment; 0 – no influence; 1 – weak influence; 2 – strong influence)

Factors	Amplifying indexes	Aims						Σ	Place
		Consumers			The owners				
		Leading position in innovations	Minimum development time	..	High return of investment	Stock value growth	..		
Knowledge level									
Person	Knowledge consuming	1	1	...	1	1	...	4	2
Communication (synergy)	Team work building	2	2	...	1	1	...	6	1
Organizing	Communicational structure	0	1	...	0	1	...	2	4
Organizational medium	Usage of outer knowledge sources	1	1	...	0	1	...	3	3

Source: Wissensmanagement Forum Organisation (2003)

**Table 2.** The main factors influencing employee’s knowledge potential

Factors	Score
<b>1. Education</b>	<b>100</b>
1.1. No secondary school education	12
1.2. Secondary school education	24
1.3. Vocational school education	
1.3.1. Not conformable to current occupation	30
1.3.2. Conformable to current occupation	36
1.4. Higher education	
1.4.1. Not conformable to current occupation	42
1.4.2. Conformable to current occupation	48
1.5. Bachelor’s degree	
1.5.1. Not conformable to current occupation	54
1.5.2. Conformable to current occupation	60
1.6. Master’s degree	
1.6.1. Not conformable to current occupation	70
1.6.2. Conformable to current occupation	80
1.7. Doctorate	
1.7.1. Not conformable to current occupation	90
1.7.2. Conformable to current occupation	100
<b>2. Occupational experience</b>	<b>100</b>
2.1. No working experience	0
2.2. 5-12 months work experience	5
2.3. Trained by an employer in a work place	10
2.4. 1-3 years work experience	20
2.5. 5-12 months work experience conformable to current occupation	30
2.6. More than 3 years work experience	40
2.7. 1-2 years work experience conformable to current occupation	50
2.8. 2-3 years work experience conformable to current occupation	60
2.9. 3-4 years work experience conformable to current occupation	70
2.10. 4-5 years work experience conformable to current occupation	80
2.11. 5-8 years work experience conformable to current occupation	90
2.12. More than 8 years work experience conformable to current occupation	100
<b>3. Occupational level</b>	<b>100</b>
3.1. Labourers	5
3.2. Team managers	15
3.3. Specialists	20
3.4. Superior specialists and junior managers of a department	30
3.5. Medium level managers of a department	45
3.6. Medium level managers of central administration	60
3.7. Heads of territorial departments	75
3.8. Top level managers responsible for crucial organization activities	90
3.9. Top level managers responsible for all types of organization activities and work	100

Factors	Score
<b>4. Dutifulness</b>	
4.1. Constantly making unskilled work breaches causing loss to the organization (at least 1 breach per year)	0
4.2. Rarely making unskilled work breaches causing loss to the organization (no more than 2 breaches in 3 years time)	5
4.3. Constantly making small work breaches causing loss to the organization (at least 2 breaches per year)	10
4.4. Rarely making small work breaches causing loss to the organization (no more than 3 breaches in 2 years time)	15
4.5. At least a single rough work breach known in the history of the employee that caused a loss to the organization	30
4.6. At least a single small work breach known in the history the employee that caused a loss to the organization	50
4.7. Employee has not made any work breaches ever	100
<b>5. Decision making level and responsibility</b>	<b>100</b>
5.1. Making no decisions	0
5.2. Makes decisions on doing ordinary work	5
5.3. Makes decisions controlled by other employees	15
5.4. Makes personal decisions when problems are defined and results are controlled	30
5.5. Makes decisions having a direct effect on all working results of the staff when problems are defined and collective results are controlled.	50
5.6. Makes decisions when problems aren’t defined and decisions have a direct effect on the work results of the department	70
5.7. Makes decisions that need analytical evaluation. Decisions have an effect on all organization’s activities (tactics and policy).	85
5.8. The head manager of the collective board that solves problems dealing with the core questions of organization’s strategy.	100
<b>6. Self – dependency at work</b>	<b>100</b>
6.1. Strictly regulated work (casual works)	5
6.2. Average regulated work	15
6.3. Weakly regulated work	30
6.4. Activity based on constant communication with other departments	50
6.5. Tasks are clearly delegated although constantly updated information from the outer medium is needed	60
6.6. Tasks are mainly not delegated and self – dependent usage of information from the outer medium is a constant need.	70
6.7. Highly unregulated work under a demand for a broad knowledge including several types of professional information.	85
6.8. Creative wide-type work under a demand for intuition, innovativeness, high level of education and an exact evaluation of inner and outer medium connection	100

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Factors	Score
<b>7. Work culture</b>	<b>100</b>
7.1. Unwilling to accept different opinion, constantly causing inner conflicts	0
7.2. Willing to accept different opinion although does not admit personal mistakes	10
7.3. Constantly learning from personal mistakes although unwilling to share experience, data and information with colleagues.	30
7.4. Willing to share information, experience and knowledge	50
7.5. Constantly training other employees, advising how to solve various problems	65
7.6. Helps with creating a positive microclimate	85
7.7. Able to minimize cultural differences in the organization	100
<b>8. Using technology at work</b>	<b>100</b>
8.1. Does not use computer or other IT	0
8.2. Low level of using IT at work (amateur level)	10
8.3. Average level of using IT at work	30
8.4. High level of using IT at work	50
8.5. Employee perfectly runs computer and the Internet, widely uses different programs and adapts them in practice, promptly adjusts the latest software and successfully uses it.	80
8.6. Uses IT at work and helps with creating IT usage systems at work	100
<b>9. Difficulty level of work</b>	<b>100</b>
9.1. Work does not demand special skills, simple physical work	20
9.2. Difficult physical work	30
9.3. Work sometimes causes stress	40
9.4. Physical and mental work causing constant physical and mental tense.	60
9.5. Unregulated work hours, high mental tense.	80
9.6. Work constantly faces stress and mental tense due to responsibility for all activities stimulated by the organization.	100
<b>10. Motivation for working</b>	<b>100</b>
10.1. No motivation	0
10.2. Seldom motivated	20
10.3. Low level of motivation	40
10.4. Motivation on the average level	60
10.5. Strong motivation	80
10.6. Very strong motivation	100
<b>11. Employee's influence on achieving organization's aims</b>	<b>100</b>
11.1. No influence	0
11.2. Occasional influence	10
11.3. Weak influence	30
11.4. Average influence	50
11.5. Strong influence	70
11.6. Very strong influence	90
11.7. Organization's work is impossible without employee's influence	100

to stimulate activities in organization's department, to support plans with economic calculations, to plan and organize material support for transportation process, to run freight and passenger transportation technology, to organize and run the process of logistics in a company; to arrange activities in organization's department considering a type of activity, to run the staff, to analyze and evaluate the results of activity, to control financial and material organization resources, to archive, to systemize and provide the required information, to ensure the quality of freight and passengers' transportation.

Table 2 shows that a list of the factors influencing employee's knowledge potential is very wide. Despite common conformity, each of the factors has a different influence on company's potential depending on its specifics. Thus, when counting employee's knowledge potential, we have to weight not only the factor score of every individual but also the weight of factor influence in the context of the specifics of company's activity. In this case, the most suitable method (Zavadskas *et al.* 2003; Saaty 1980) is Simple Additive Weighting – SAW. According to this method employee's knowledge potential ( $D_i$ ) is counted as follows:

$$D_i = \sum_{j=1}^{11} \lambda_j V_{ij}, \quad (1)$$

where:  $\lambda_j$  – importance of factor  $j$ ;  $V_{ij}$  – score of factor  $j$  considering employee  $i$ .

To assess the score of each employee, the score of the first four factors (Table 2) is enough to have typical employee's accountance data. More problems are faced in assessing the last seven factors because no needed data exists in typical employee's accountance data. In spite of this, we have to take into account though more subjective but practically possible assessing methods.

## 5. Empirical assessment of employee's knowledge potential

The presented method of assessing knowledge potential was adapted to evaluate JSC *Transleka* employee's knowledge potential. At the moment of empirical research, 53 employees worked in the company. The below introduced employees were selected for research: director, head accountant, administrator, driver 1, driver 2, logistics manager, repairing department's manager, loader, turner, electrician. Research was carried out in the following order:

1. To state each of the first four factors assessed by an employee (educational level, occupational experience, occupational level and dutifulness) according to the company's accounting data.
2. An expert group of seven people including one employee from transport institute, two observed company's employees, two staff selection consultants and two PhD students from university was formed. The experts got familiar with assessment methods, research aims were discussed, prepared assessment forms were analyzed and the first four factors in the

score were determined. Two tasks were formed for the experts (each task had a form to fill):

- to assess personal employee’s knowledge potential according to the factors from 5 to 11 using points scale for evaluation (Table 2);
- to evaluate the weight of each factor according to the specificity of an organization. Importance was measured using AHP (Analytic Hierarchy Process) method (Saaty 1980) and a typical 9 point assessment scale of importance (Table 3).

During the assessment session, the experts were allowed to communicate with one another as well as with the initiator of research. Although assessment had to be done individually, each of them had to make an independent decision.

**Table 3.** The assessment scale of factor importance

Score	Content
1	Both factors are equally important
3	Very slight difference in influence compared to other factors
5	Slight difference in influence compared to other factors
7	Significant difference in influence compared to other factors
9	Very significant difference in influence compared to other factors
2, 4, 6, 8	Intermediate scores

3. A statistical analysis of employee’s knowledge potential evaluation (made by experts) was carried out in order to calculate the typical rating characteristics of employee’s knowledge potential (Table 4). Relatively slight standard deviation meanings show good conciliation between experts’ opinions. The average score of experts’ assessment was calculated (Table 5).
4. Consistency ratio ( $s_e$ ) was used to check the rate clarity of factor weights on individual basis of each of the experts calculating the index in the following way:

$$s_e = \frac{S_e}{S_a}, e = 1, 2, 3, 4, 5, 6, 7; \tag{2}$$

$$S_e = \frac{\delta_{\max} - m}{m - 1}, e = 1, 2, 3, 4, 5, 6, 7, \tag{3}$$

where:  $S_e - e$  consistency index of expert score;  $S_a -$  consistency index of random value matrix (table meaning);  $\delta_{\max} -$  the highest proper value of score matrix;  $m -$  the number of factors.

Verification by consistency ratio ( $s_e$ ) revealed that after first assessment ( $s_e$ ), the values of 2, 3, 5 and 6 expert were higher than the standard one (0,1) (Table 6). The matrixes made by the above mentioned experts also did not meet the condition of element transitivity. These factors were introduced to the experts and a discussion

**Table 4.** Score characteristics of employee’s knowledge potential (by 4–10 factors)

Occupation	Experts							Average	Dispersion	Standard deviation	Sample width	Sample centre
	1	2	3	4	5	6	7					
Director	92.1	82.1	90.0	91.4	95.0	85.7	89.3	89.4	15.66	4.83	12.86	88.57
Head accountant	55.0	56.4	56.4	47.9	57.1	49.3	56.4	54.1	12.64	3.83	9.29	52.50
Driver 1	30.7	41.4	35.7	32.9	35.7	35.7	40.0	36.0	11.93	4.03	10.71	36.07
Driver 2	32.9	39.3	38.6	31.4	37.1	39.3	42.1	37.2	12.45	3.51	10.71	36.79
Logistics manager	77.9	83.6	77.9	71.4	78.6	76.4	79.3	77.9	11.22	4.32	12.14	77.50
Repairing department’s manager	40.0	46.4	38.6	42.1	41.4	45.0	42.9	42.3	6.37	2.97	7.86	42.50
Loader	8.6	15.7	13.6	14.3	11.4	14.3	15.7	13.4	5.64	2.78	7.14	12.14
Turner	31.4	37.9	34.3	35.0	28.6	31.4	28.6	32.4	10.18	3.55	9.29	33.21
Electrician	44.3	42.1	39.3	36.4	31.4	41.4	41.4	39.5	15.99	5.04	12.86	37.86

**Table 5.** Expert’s score of employee’s knowledge potential by factors

Employee	Factors										
	Based on accountance data				Expert assessment’s average score						
	$V_1$	$V_2$	$V_3$	$V_4$	$V_5$	$V_6$	$V_7$	$V_8$	$V_9$	$V_{10}$	$V_{11}$
Director	60	100	100	100	93.6	97.9	68.6	75.7	100.0	94.3	95.7
Main accountant	48	60	30	100	78.6	78.6	44.3	15.7	71.4	51.4	38.6
Driver 1	36	60	5	50	41.4	25.7	52.1	8.6	57.1	31.4	35.7
Driver 2	48	100	5	30	41.4	25.7	60.7	2.9	57.1	28.6	44.3
Logistics manager	80	80	45	100	67.1	78.6	89.3	62.9	80.0	91.4	75.7
Repairing department’s manager	48	100	45	5	61.4	73.6	38.6	4.3	74.3	28.6	15.7
Loader	12	50	5	0	7.1	12.1	8.6	0.0	30.0	31.4	4.3
Turner	36	100	30	100	12.1	19.3	47.1	10.0	45.7	77.1	15.7
Electrician	48	90	30	50	23.6	25.7	41.4	24.3	54.3	85.7	21.4

**Table 6.** The characteristics of factor weights rated by the experts

Experts	S <sub>a</sub>	Index								
		Results of the third assessment			Results of the second assessment			Results of the first assessment		
		δ <sup>'''</sup> <sub>max</sub>	S <sup>'''</sup> <sub>e</sub>	s <sup>'''</sup> <sub>e</sub>	δ <sup>''</sup> <sub>max</sub>	S <sup>''</sup> <sub>e</sub>	s <sup>''</sup> <sub>e</sub>	δ <sup>'</sup> <sub>max</sub>	S <sup>'</sup> <sub>e</sub>	s <sup>'</sup> <sub>e</sub>
First	1.5	11.359	0.036	0.024	12.17	0.117	0.0775	12.306	0.131	0.086
Second		11.782	0.078	0.052	12.97	0.197	0.1303	13.290	0.229	0.152
Third		11.733	0.073	0.049	11.98	0.098	0.0651	12.683	0.168	0.111
Fourth		12.174	0.117	0.078	12.03	0.103	0.0685	12.437	0.144	0.095
Fifth (aborted)		12.706	0.171	0.113	12.89	0.189	0.1251	12.693	0.169	0.112
Sixth		12.355	0.136	0.090	12.54	0.154	0.1022	12.726	0.173	0.114
Seventh		11.907	0.091	0.060	12.80	0.180	0.1194	12.449	0.145	0.096
Average matrix of consistency		12.100	0.110	0.073	12.67	0.167	0.1108	12.935	0.193	0.128

**Table 7.** The expert-made average matrix of the comparative rates of factor weights and standardized meanings

Factors	V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	V <sub>5</sub>	V <sub>6</sub>	V <sub>7</sub>	V <sub>8</sub>	V <sub>9</sub>	V <sub>10</sub>	V <sub>11</sub>	λ <sub>i</sub>
V <sub>1</sub>	1.00	0.17	3.00	0.25	0.33	2.00	4.00	0.50	0.50	2.00	0.25	0.0579
V <sub>2</sub>	6.00	1.00	8.00	1.00	3.00	6.00	9.00	4.00	5.00	7.00	2.00	0.2150
V <sub>3</sub>	0.33	0.13	1.00	0.14	0.20	1.64	1.71	1.32	0.86	1.00	0.14	0.0351
V <sub>4</sub>	4.00	1.00	7.00	1.00	2.00	6.00	8.00	3.00	3.00	7.00	1.00	0.1777
V <sub>5</sub>	3.00	0.33	5.00	0.50	1.00	3.00	6.14	1.71	2.00	4.00	0.50	0.1124
V <sub>6</sub>	0.50	0.17	1.50	0.17	0.33	1.00	2.00	1.14	0.50	1.00	0.25	0.0354
V <sub>7</sub>	0.25	0.11	0.88	0.13	0.16	0.50	1.00	0.14	0.20	0.50	0.14	0.0166
V <sub>8</sub>	2.00	0.25	2.93	0.33	0.88	2.60	7.00	1.00	1.00	3.00	0.33	0.0882
V <sub>9</sub>	2.00	0.20	2.61	0.33	0.50	2.00	5.00	1.00	1.00	3.00	0.33	0.0743
V <sub>10</sub>	0.50	0.14	1.00	0.14	0.25	1.00	2.00	0.33	0.33	1.00	0.17	0.0284
V <sub>11</sub>	4.00	0.50	7.00	1.00	2.00	4.00	7.00	3.00	3.00	6.00	1.00	0.1591

**Table 8.** JSC Transleka employee's knowledge potential

Position taken by an employee	Knowledge potential in points
Director	84.9
Main accountant	55.3
Driver1	37.8
Driver2	43.8
Logistics manager	71.5
Repairing department's manager	42.0
Loader	15.1
Turner	49.0
Electrician	43.7

was held in order to re-evaluate factor's importance in Table 6. The discussion revealed that consistency index (s<sub>e</sub>) exceeded the limit and matrixes 2, 5, 6 and 7 did not meet the requirements for matrix element transitivity condition. To make the results more accurate, another discussion was generated and all the experts stated their opinion about the company and factors mostly influencing company's knowledge potential. The value matrixes of the third assessment met the requirements for consistency except the fifth expert's matrix. The results of the latter assessment were not used in further calculations.

5. According to expert's factor importance score (third assessment), the normalized values of importance were calculated (Table 7). The calculations were made as follows:

$$\lambda_j = \frac{\sum_{j=1}^m w_{jk}}{\sum_{j=1}^m \sum_{k=1}^m w_{jk}}, \tag{4}$$

where: w<sub>jk</sub> – score ratio of factor i and factor k.

6. According to formula (1) each employee's knowledge potential was calculated (Table 8). The maximum of the assessment scale is 100 points.

The calculation results were introduced to the owner, director and members of the expert group of the company. They suppose that this method is practically acceptable and its results are valuable to improving the management of working resources. A report on the research results was made and presented the recommendations and solutions of company's potential to improve its management. A few main fields are described below:

- Driver 1 is willing to make work breaches causing loss to the organization, his motivation for working is poor and knowledge potential is lower than that of other workers. The company should consider hiring a new employee instead of Driver 1.
- Repairing department manager's motivation for working and dutifulness have the lowest ratings in the whole company. We suggest motivating the above mentioned manager applying new

methods. In case the results still do not reach a satisfactory level, the company should bear in mind hiring a new employee instead. The company has got good employees (turner, electrician) whose knowledge potential is higher than that of the current manager.

- The average score of using IT in casual work was only 22.7 points. We recommend organizing training courses to the staff of the company.
- Staff dutifulness in the company is not very high (59.4 points) and that is why the preventing actions of breaches at work must be followed.

A work culture of the staff in the company does not cause any harm to work results (50 points) although lack of positive microclimate can be noticed. Motivation for work reaches an average level (57 points). Thus, we suggest paying more attention to getting in touch closer (company's parties, birthday honouring etc.)

## 6. Conclusions

1. Transport sector is developing very fast, and thus many companies face the problem of managing human resources. Therefore, the development of adapting knowledge management in the field of transport started. Our presented method evaluates the employee as the main factor. All surrounding factors including technologies, processes etc. are taken into account only as a tool that amplifies reaching organization's aims and has an effect on creating value added knowledge potential (synergy effect).
2. The method of assessing employee's knowledge potential for transport sector brings the ability to calculate a digital number of the level of knowledge potential in the before mentioned sector. The influencing factors of the level of the main knowledge potential were indicated and their importance was calculated considering the specificity of the sector. In view of importance, the factors can be presented as follows: occupational experience, dutifulness, employee's influence on achieving organization's aim, decision making and responsibility level, self-reliance at work, the level of using technology at work, difficulty level at work, educational level, occupation level, motivation for working and work culture.
3. To find out factor importance, an analysis of the structure of transport sector management was made (occupational and management levels were singled out). Moreover, the content of the employee's knowledge potential of transport sector and the factors of marketability were established.
4. The conducted experiment in the transport company has revealed that the assessment method of employee's knowledge potential was practically acceptable. The results of the carried out experiment allows company's owners and management to make wise decisions in human resource management and activity modernization processes.

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