

FACTORS OF HUMAN RESOURCE PLANNING IN METALLURGICAL COMPANY

Received – Prispjelo: 2014-04-01

Accepted – Prihvaćeno: 2014-08-20

Preliminary Note – Prethodno priopćenje

The objective of this article is to define the factors that have the most profound impact on the outputs of human resource (HR) plans and on the business plans they should be based on. The solution involved the Delphi and the Analytic Network Process (ANP) method and close cooperation with HR specialists from the Czech metallurgical branch.

Key words: human resource planning, metallurgical company, Analytic Network Process method, Delphi method, Czech Republic

INTRODUCTION

Long-term excess of supply over demand in the labour market, the increasing dynamics of the economic changes, the mutual linking of economies, the entry of foreign investors, and the overall increase in the number of factors affecting employment have deepened the aversion and distrust of Czech enterprises in the tools of medium and especially long-term human resource planning. Enterprises suppress systematic, long-term plans and forecasts and replace them with operational plans and tools such as agency employment. The main reason is a large number of external and internal factors that need to be incorporated into the plans and their increasing variability, which is associated with the above mentioned trends. The originally established plans correspond to the achieved reality only in case of constant monitoring of the factors and dynamic adaptation of the measures taken to achieving the plans.

Because HR plans in various companies include various areas of human resource management (e.g., assessment, adaptation, talent management, etc.), the authors have defined 3 common areas that all the surveyed enterprises included in their plans: recruitment (including the selection, arrangement and adaptation), training and employee motivation. These personal areas are most important in the formation of the human resources of the company and they are therefore most important for the defined objective of the project - company performance.

The selection of the right people should be at the beginning. But, after some time, even those people must receive further education and training according to the

specifics and current needs of the company and they must be motivated at the same time, because only motivated employees deliver high quality and maximum performance [1].

When the main factors of human resource planning are being defined and their importance is being compared, the authors collaborated with experienced human resources officers from 4 large metallurgical companies and 6 foundries in the Czech Republic. Thereinafter, they will be called respondents. The authors communicated with them via e-mail.

HUMAN RESOURCE PLANNING

Ensuring that a company has the required number of employees at the right time at reasonable costs, with the required knowledge, skills and experience is the scope of interest of human resource planning. It is a systematic, continuous search for consistency between the objectives, vision and strategy of the company and the reality of the labour market [2].

According to Armstrong [3], human resource planning combines three basic activities, namely recruiting the right number of people with satisfactory skills, their appropriate motivation to perform, and building links between the company goals and planning. Human resource planning is a process that is based on the identification (forecasting) and comparison of current and future human resource needs. Optimal deployment of the employees in the internal departments and in the individual work positions represents an integral part of human resource planning. Human resource planning traditionally involves the recruitment strategies, selection, retention, training and motivation of employees, as well as the tools of control and management of absenteeism and turnover of employees [4].

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METHODOLOGY

The authors used the method of questioning, the Delphi method and the ANP method to deal with the problem.

The Delphi method is an expert technique mainly used to predict future events. It is also used, however, as a method of expert theoretical research of the existing problems. The Delphi method is an iterative process focused on collecting and distilling the judgments of experts using a series of questionnaires interspersed with feedback. The questionnaires are designed to deal with problems, opportunities, solutions, or forecasts. Each subsequent questionnaire is developed on the basis of the results of the previous questionnaire. The process stops when the research question is answered: for example, when a consensus or a theoretical saturation is achieved, or when sufficient information has been exchanged [5].

The ANP method [1] is a multistage decomposition method dealing with the solution of decision-making problems involving more than one criterion of optimality. It is a general procedure, where the structure has the form of a network. The network may consist of any links among all the elements. The ANP does not limit human understanding and experience to force decision-making into a highly technical model that is unnatural and contrived. It is based on formalization of how people usually think, and it helps the decision-maker to monitor of the process characterized by increasing complexity of the problem and the diversity of its factors [6]. The fundamental idea is to create a decision-making network and the following evaluation of the importance of the individual links among the interconnected elements. These evaluations are represented by weights, which can be determined on the basis of Saaty method of pair comparison or by normalizing direct measurements.

The SuperDecisions software will be used to calculate the case study. The program was written by the ANP Team, working for the Creative Decisions Foundation. The software allows you to create any network characterizing the studied issue [7].

Questioning using the Delphi method and the ANP method was conducted in the form of e-mail communication with the respondents during the period of 1-4/2014.

EXPERIMENTAL PART AND RESULTS

The procedure determining the weights of the individual factors of human resource planning had the following phases:

1) Independent questioning of the respondents, with the aim of defining the maximum number of planning factors of the selected areas of HRM. The authors have obtained the total of 44 factors from the respondents.

2) Identification of 13 major planning factors of the selected areas of human resource management of the

company, which were reported by at least 8 out of 10 respondents:

I Recruitment of employees

- Competition in the surroundings of the company.
- Availability of the required qualification outside the company.
- Financial capabilities of the company.
- In-house or cooperating training facilities.
- Availability of the required qualification within the company.

II Training of employees

- Availability of training facilities outside the company.
- Systematic monitoring and evaluation of the knowledge and skills of the employees.
- Internal training activities.
- The efficiency of employee training up to now.

III Motivation of employees

- Legislation (Laws associated with income taxes, Labour Code).
- Feedback from the employees regarding the motivation measures and their needs.
- Financial capabilities of the company.
- System of employee evaluation.

3) Then, using the Delphi method, the respondents were asked to create mutual dependency links among all the other factors. There was a consensus as early as after the evaluation of the second round of questioning in this section.

4) A decision-making network was built among the individual factors on the basis of these results by means of SuperDecisions software (see Figure 1). The network contains 14 elements (13 factors and a target) with 37 links among the individual elements. These links are divided into three basic categories: hierarchical links, i.e. links of all factors to the target (13), internal links of the individual areas (10) and links among the elements of different areas (14).

5) The network with the links was sent to the respondents and they were asked again, using the Delphi method, to suggest and re-evaluate the dependency weights of the individual factors among each other in the first round and on the basis of the recounting of results after each round. The determination of the weights took advantage of the method of pair comparison of all the factors in the individual areas and among the areas, i.e., a definition of the weights using the values within the range of 1-9 (1-equally important factors, 9- more important factor to maximum extent). The questioning was completed after the 4th round, when the respondents were not willing to further customize their weight coefficients anymore according to the collectively processed weights after each round.

6) Evaluation of the outputs acquired through the SuperDecisions software.

7) Interpretation of ANP outputs.

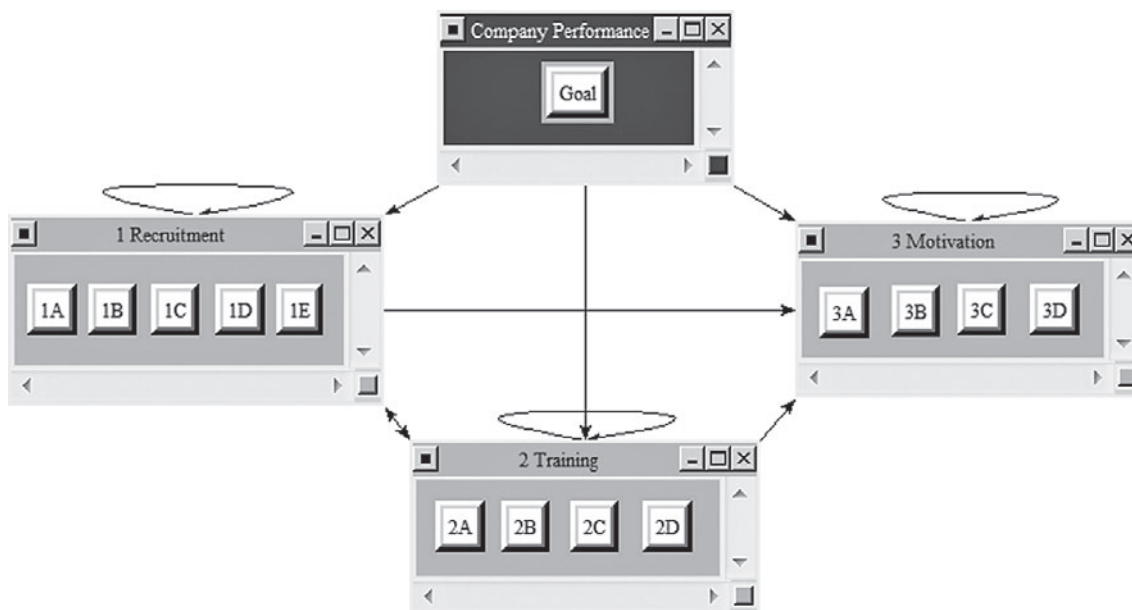


Figure 1 Network analysing the impact of HR management on company performance

DISCUSSION

A complete overview of the results can be found in the Table 1. The basic outputs of the application of the ANP method in the area of human resource planning in metallurgical industry include:

- The most important factors are those from the sphere of motivation - 3b and 3c, with a total value of importance above 43 % out of the importance of all 14 factors. The financial capabilities of the company are generally considered to be the most important factor in all areas of company management, including planning, but it is interesting that according to HR experts, feedback regarding employee incentives measures of the company is almost equally important from the perspective of the company performance factor.
- The results have shown that motivation of employees is the most important of the three monitored areas of human resource planning from the perspective of the impact on company performance.
- In compliance with the expectations, factor 3c – the financial capabilities of the company has reached the highest value. This factor is identical to 1c, because both of the planning areas have been chosen by the experts as fundamental. However, 1c has reached a lower value as a result of the fact that area 3, i.e. motivation, was evaluated as 3 times more important for company performance than recruiting human resources, which, together with the influence of the mutual links and dependencies of the factors, has significantly increased the value of 3c.
- The less important factors included the current availability of the required qualification (external and internal), which again reflects the lower importance of recruitment and the current approach of metallurgical enterprises [e]. With regard to the long-term shortage of the required labour force, the companies

have intensified their training activities - see the higher importance of factor 2b and 2d - monitoring of training needs and evaluation of company training effectiveness.

- Other factors are relatively balanced and it is therefore beneficial to monitor and evaluate them equally.

Table 1 Outcome of the weights of factors

Node	Priorities normalized by cluster	Limiting priorities
1A	0,18641	0,030632
1B	0,14268	0,023447
1C	0,46229	0,075969
1D	0,14971	0,024602
1E	0,05891	0,009680
2A	0,22588	0,052292
2B	0,26175	0,060595
2C	0,21543	0,049873
2D	0,29694	0,068741
3A	0,07223	0,043642
3B	0,35319	0,213386
3C	0,36113	0,218183
3D	0,21345	0,128958

CONCLUSION

Human resources represent, and probably will represent for a long time in the future, the greatest potential competitive advantage of companies. The condition of the materialization of this prerequisite is an effective management of human resources, i.e. careful planning, organizing, leading and controlling. Planning is the starting point of other functions, and if due attention is not given to this area, other functions are performed randomly, often by the trial and error method. There is no other production factor in a company, where this

method can result in such negative consequences than in human resources, because, for example, the loss of key employees as a result of unprepared incentive plans will take the company a lot of time to deal with and it will be very difficult. The highest attention in the area of human resources must be paid in particular to three areas - recruitment, training and motivation of employees. The authors of this article therefore focused their attention on identifying those factors that have the most crucial impact on the planning, and hence on the company performance, of these areas, and their changes during the execution of the plan can cause the biggest obstacles to achieving the goals.

The motivation of employees has been evaluated as an area of management and human resource planning, which has the largest impact on the performance of the monitored metallurgical enterprises, was followed by training and recruitment. The fundamental factors of human resource planning, determined by means of questioning, the use of the Delphi method and the ANP method among the human resource specialists from metallurgical companies, were the financial capabilities of the company, which was not a surprising finding, and feedback from company employees, which is still underestimated by a number of companies. However, the survey of feedback is a relatively inexpensive tool in comparison with the other instruments of human resource management. The companies must also take into account that the actual funds do not guarantee motivated employees and planning rewards, benefits and other motivational tools cannot be effective without a regular evaluation of the employee satisfaction with these measures, as well as all the activities affecting their work.

Acknowledgement

The work was supported by the specific university research of Ministry of Education, Youth and Sports of the Czech Republic No. SP2014/67.

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Note: The responsible translator for English language is Petr Jaroš (English Language Tutor at the College of Tourism and Foreign Trade, Goodwill - VOŠ, Frýdek-Místek, CR)