

THE REQUIRED COMPETENCIES OF PROJECT MANAGERS IN METALLURGICAL COMPANIES IN THE CZECH REPUBLIC

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This paper is focussed on the problems of competencies of project managers in the corporate practice of metallurgical companies in the Czech Republic. The authors aim to assess the requirements imposed on the position of a project manager from the point of view of the corporate management. The authors identify the basic areas playing a significant role in assessment of project managers' competencies. They represent procedures applicable within selection of a project manager. Subsequently, the authors present outcomes of a survey, these outcomes show requirements of corporate management represented by human resource department managers of metallurgical companies in the Czech Republic when recruiting project managers in practice.

Key words: metallurgical companies, project management, project manager competencies, Czech Republic

INTRODUCTION

Successful implementation of changes in the corporate environment is one of the most important conditions of prosperity of business entities. Changes in the corporate environment of various characters are usually implemented in the form of projects. To make sure these projects are implemented successfully, it is suitable to apply project management methods and tools [1]. A positive impact of project management on increasing the success of project implementation has been validated by a number of studies, e.g. Lappe and Spang [2], or Joslin and Müller [3]. To assess the corporate project management maturity, it is possible to make use of a project management maturity model [4]. A number of these models have been built up on the concept of assessment of competencies and knowledge of project managers in the evaluated company, and one of the areas most of them assess when evaluating the project management maturity is the area of competencies of project managers in the area of project management and related areas.

LITERATURE REVIEW

The basic theoretical project management concepts can be found within international project management standards, i.e. mainly the standards of three largest international professional associations in the area of project management, the Project Management Institute (PMI), which specifies the project management standard in the publication titled A Guide to the Project Man-

agement Body of Knowledge (PMBOK) [5], and the Association for Project Management Group (APM), creating the standard of PProjects IN Controlled Environments 2 (PRINCE 2) [6]. And particularly, the International Project Management Association (IPMA), creating the international standard of IPMA Competence Baseline, designed as an overview of technical, behavioural and contextual competencies of project managers (PMs), competencies required for successful project implementation in practice [7]. Within these standards, it is possible to obtain a certificate of the level of the project manager's knowledge.

An important role within assessment of PMs' competencies is played by qualifications requirements, i.e. the achieved education and specialization, general skills, professional theoretical and practical skills, soft skills, certification within any of the international project management standards, and practical experience [8].

Apart from the international project management standards, a suitable scope of knowledge and skills of PMs or project team members can also be defined on the basis of some other available data. As a tool for enhanced human resource management, the Czech Republic (CZE) has created the database of the National System of Occupations, defining the scope of work of the project manager and the recommended qualification requirements in the field of professional skills, general skills and soft skills [9].

For the position of a PM, it is possible to use the current employees, or it is also possible to try to find employees among outsiders, or to make use of the services of experts in the area of project management. What is also flexible is the concept of the contract, i.e. whether it is possible to employ a PM on a temporary or a long-term basis and to make use of their experience in some

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future projects, to enter into a full-time or part-time employment contract, or to appropriate only a part of the employee's working time for project management [10]. The form of the contract is closely related to the corporate culture and the used form of the employment in company [11].

When selecting a PM, it is possible to make use of a number of HR tools to evaluate job applicants, e.g. solving case studies, the Big 5 Model (extroversion, neuroticism, tolerance, conscientiousness, openness towards experience), tests of intelligence, social intelligence, or emotional intelligence. It is possible to apply projective tests in the form of association, construction, completion, or expressive techniques, scaling, an integrity test, a set of Assessment Centre selection methods of the, camera tests, or verification of soft skills [12].

RESEARCH METHODOLOGY

The research was implemented on the basis of literature review, which included analysis of professional journals, books and conference papers, documents of the appropriate government institutions and professional associations in the area of project management and HR management.

The literature review was followed by a quantitative survey among metallurgical companies operating in CZE and associated in sectoral organizations - Steel Federation, Inc. [13] and Association of Foundries of the Czech Republic [14]. The survey aimed to identify requirements relating to appointment of workers to the positions of PMs in practice. In January and February 2017, we addressed 23 representatives of HR departments and obtained answers to 11 questions of a structured questionnaire through directed interviews with them. The respondents' attitudes to the importance of the PM applicants' skills were assessed using a seven-point scale 1-7 (1 = low importance, 7 = high importance). The acquired data were subsequently processed in the statistical software IBM SPSS Statistics and analyzed using descriptive analysis tools.

RESULTS AND DISCUSSION

The obtained answers can be divided into two groups. In the first group, the respondents commented on qualification requirements, requirements concerning the applicants' practice, and required general, professional theoretical and practical skills, and soft skills of PMs. The second group of questions assessed procedures applied within the process of selecting PMs and making an employment contract.

When choosing PMs, it is the candidate's education and job experience what is most often considered as assessment criteria. The vast majority of the addressed respondents (91 %) preferred these criteria to language skills and certification in the area of project management. In the area of education, the most respondents (48

%) required university education of the bachelor type. In view of the scope of activity of metallurgical industry, it is understandable that 71 % of the respondents preferred technical specialization of the university course. Low utilization of certification in the area of project management as a criterion for selecting applicants for the positions of PMs is closely related to the low level of knowledge of these certifications. 75 % of the respondents state that they have not encountered these certifications yet. The respondents who already have some experience with certifications in the area of project management are familiar with the certifications PRINCE 2 and PMI (always 33 % of the respondents), and the IPMA certificate is known by 17 % of the respondents only. In addition to the above mentioned international standards of project management, another mentioned possible standard for verification of the applicants' knowledge was the international standard ISO 10006 10006 Quality management - Guidelines to quality in project management and 21500 Guide on project management. For a half of the respondents (53 %), it is enough for the PM position, if an applicant has job experience of up to 3 years long, and 27 % of the respondents prefer applicants with practical experience from more areas of business.

The respondents assessed the importance of selected general, professional theoretical and practical skills when evaluating applicants. The list of assessed skills corresponded with the requirements specified in the database of the National System of Occupations for PMs [9], and it also took account of the list of technical, behavioural and contextual competencies of PMs, competencies defined by IPMA [7]. Table 1 shows the assessed skills in order from the most important ones to the least important ones in respective groups as seen by the respondent.

The respondents see the most important general skills in analytical thinking and language capability of the native language, and very important skills in conceptual thinking, computer skills in the area of project management, language competence in English and driving licence.

From the point of view of the respondents, the most important theoretical skill was knowledge of the area of quality and risk management in project management. This fact is connected with the area of business, metallurgical industry, and projects implemented in this area require intensive quality orientation, and also project implementation risks may have significant material impacts.

In the area of professional practical skills, the most important skills are seen in those in the area of time, risk, quality, and resource management, those relating to team management, and those relating to project information and document management, i.e. areas of the basic project specification (time, contents, and sources). The respondents also accentuate the skill of working with teams and knowledge and utilization of project

Table 1 **Assessment of importance of general, professional theoretical and practical skills, and soft skills of applicants for the position of a project manager**

General skills	Mean	Median
Analytical thinking	6,4	7
Language capability of the native language	6,2	7
Conceptual thinking	6,0	6
Computer capability in project management	6,0	6
English language capability	5,6	6
Driving licence	5,1	6
Knowledge of corporate economics	5,2	5
Knowledge of corporate management	5,2	5
Numerical capability – knowledge of practical mathematics	4,9	5
Basic legal knowledge in the extent civil and commercial law	4,4	4
Language capability in another foreign language	3,6	3
Professional (theoretical) skills		
Quality management in project management	5,6	6
Risk management in project management	5,5	6
Indicators of economic investment and project efficiency	5,5	5
Work motivation and efficiency evaluation in project management	5,4	5
Selection and deployment of workers in project teams	5,3	5
Financial planning and controlling	5,1	5
Legal skills	4,3	4
Professional (practical) skills		
Project time framework management	6,0	6
Project team management	5,8	6
Project risk management	5,8	6
Project quality management	5,6	6
Project information and documentation management	5,5	6
Project resource management	5,5	6
Project scope management	5,6	5
Change management	5,4	5
Project financial management	5,3	5
Project integration management	5,2	5
Soft skills		
Self-reliance	6,4	7
Cooperation (collaboration)	6,2	7
Active approach	6,3	6
Workload management, resistance	6,3	6
Effective communication	6,2	6
Problem solving	6,1	6
Flexibility	6,0	6
Leadership	6,0	6
Information management	5,8	6
Creativity	5,7	6
Self-education	5,7	6
Relationship-building	5,6	6
Affecting others	5,5	5
Self-presentation	5,5	5
Emotional intelligence	5,3	5
Social confidence	4,9	5

Used scale: 1-7 (1= low importance, 7= high importance)

Source: Authors

management information systems to support sharing information and communication within a project.

Self-reliance and capability of cooperation are considered the most important soft skills of PM applicants. However, in view of the high values, it is possible to state that also other soft skills are considered by the respondents as very important.

The second group of questions concerned areas relating to the process of selecting a PM. According to the respondents' opinions, PMs are recruited both internally (71 % of the respondents), and externally (43 % of the respondents prefer hiring a PM for an indefinite period of time, i.e. for more projects, 29 % of them prefer recruitment for a currently implemented project). The respondents expressed only a marginal interest in the possibility of covering a PM position through outsourcing to an advisory company or to an individual specialist. The answers to this question then also correspond with the preferred form of entering into contracts with PMs, i.e. full-time contracts.

Within the recruitment process, HR management specialists apply various methods to verify the applicants' competence. They most often apply procedures verifying soft skills (67 % of the respondents), projective tests in the form of association, construction, completion, or expressive techniques (50 % of the respondents), social intelligence tests (42 % of the respondents), emotional and intelligence tests (25 % of the respondents), sets of Assessment centre selection methods, or an integrity test (identically 17 % of the respondents). 8 % of the respondents make use of the Big 5 Model. They also take account of references and conduct standardized interviews.

CONCLUSION

The paper deals with the problems of project management and its authors aim to assess the PM position requirements from the point of view of corporate management in the practice of metallurgical companies in CZE. When selecting employees for the PM position in metallurgical companies in CZ, the respondents most often require workers with a university degree, at least a bachelor degree with technical specialization. They prefer workers with at least minimal experience from the area of project management of up to 3 years. When assessing the applicants' competence, they prefer the following skills: analytical thinking, good knowledge of the native language and the English language, general knowledge in the area of quality and risk management, professional practical skills in the area of project management (project time, risk, quality, and resource management), teamwork, and project information and documentation management. In the area of soft skills, they mainly prefer self-reliance and capability of cooperation. The conducted survey also implies that the PM recruitment process is mainly based on verification of soft skills, but also a number of other methods and procedures are applied. The most frequent form of industrial relations for project

management staffing is a long-term contract for the PM position, not only temporarily for a particular project, but also with a prospect of solving future projects. With respect to the low knowledge and utilization of certifications of any of the international project management standards, it is possible to recommend metallurgical companies closer familiarization with these standards and their application in the area of assessment of applicants' competencies not only when recruiting PMs, but also generally in the area of education of metallurgical company employees involved in project implementation.

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Note: The responsible translator for English language is Milos Orlicek, Pardubice, Czech Republic