

COMPETENCE BASED HUMAN RESOURCE DEVELOPMENT SOLUTION

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Abstract. Large organizations often encounter difficulties in human resource (HR) development and effective assignment since they lack unified criteria for evaluation of the employees. Evaluation of work results does not provide enough information for the employee development. Evaluation of a large number of employees is time-consuming and requires substantial resources, and it is not being used regularly. Personalized development is hard to provide, therefore organizations turn to less effective group development. Organizations do not use the knowledge of employees enough to achieve their strategic goals and gain competitive advantages. Use of e-learning is limited and is valid for a few selected goals only. Finding a solution for these problems may improve the HR management process in the organizations and allow achieving better business results. In order to deal with these problems, the authors propose competences as unified measurements for employees. The acquired employee competences are identified by using automated evaluation solutions. The competence gap is calculated and used for employee development by creating individual and group development plans. Development solutions could be classroom training, e-learning, mentoring etc. The competence management solution will be supported by an information technology (IT) system, which should be integrated with other IT systems. In the future development of a system prototype and its validation in business environment is planned.

Keywords: human resources development, competences, planning, e-learning, knowledge management.

Introduction

Large organizations often encounter difficulties in development and effective management of their human resources:

- There is shortage of unified criteria for evaluation of the employees. Evaluation of work results is not sufficient for the employee development planning.
- Personal evaluation of a large number of employees is too time consuming and requires substantial resources; therefore it is not being used.
- Personalized development is hard to provide for large groups of employees. Group development leading to ineffective training is being used instead.
- Companies do not use the knowledge of employees enough to achieve their strategic goals and gain competitive advantages.
- E-learning (EL) is being used in limited manner and for purely specific goals.

Finding a solution for these problems may improve the human resource management process in the organization and allow achieving better business results. Therefore, the goal of the article is to show the way for prevention of the aforementioned problems using the competence based human resource development solution. The following tasks were set to establish the necessary solution and the related IT support system:

- Establishment of unified criteria for evaluation of the employees.
- Establishment of solutions for individualized development for large groups of employees.
- Establishment of a solution for the provision of knowledge management (KM) with the help of EL.

Competences as unified criteria for evaluation of employees

Organizations compete in two different markets with different dynamics. The goods and service market tends to expand, meanwhile the labour market with the current and potential human resources tends to grow narrow. The ability of the organization to conquer the goods and service market depends on the ability to attract suitable employees [1]. This environment requires a method allowing description whether the employees will be able to cope with challenges, which they are facing in everyday work. Employees may be described using descriptions of professional duties, however, more likely they reflect actions the employee is obliged to perform within the organization, instead of a characterization the employee must comply with being able to perform these actions [2]. Competences serve as a suitable way for the description of employees and evaluation of their ability to cope with

their professional duties in various situations. Furthermore, competences help in telling of average employees from employees with high potential [3]. Competences may be linked with the strategic goals of the organization to help the employees to realize how their ability affects achievement of the organization's goals [2].

The methods applied for evaluation should be mentioned as one of the problems related to the use of competences for description of the employees. Frequently management of competences are assigned to an expert or a person with subjective opinion, therefore sometimes there are doubts regarding objectivity of evaluation of the competences. At the same time application of objective methods requires additional consumption of time [4].

In order to solve the problems related to inaccuracy and subjectivity in the evaluation process of competences, the authors propose establishment of a structure model of competences including division of competences in several parts, the evaluation of which is more unequivocal. On the basis of this idea we propose division of competences in separate skills (or knowledge and evaluation of attitude) and skill groups. Each skill can be evaluated by a skill level. In its turn the competence level can be formed from all the skill levels forming the competence. The difference between the desirable and actual competence level is the competence gap. Establishment of full lists with competences necessary to employee and identification of the competence gaps leads to creation of a tool helping in suitability evaluation of employees for the position and the necessary competence development aimed at improvement of the employee's ability to perform his/her direct professional duties.

Various representatives of industry use computerized tests recognized internationally by HR experts and managers of various companies for evaluation of technical competences and skills. These tests show that automated tools may be used for objective evaluation of competence and without overloading of human resource management specialists. In its turn, attribution of tests to clearly defined competences and skills provides an opportunity for development of the missing competences, which are identified during the testing, applying appropriate employee development solutions.

Personal development plans

In order to provide a more efficient human resource development process, universal development programmes and mass development measures should be replaced by personal employee development plans (PEDP) and adjusted development solutions [5]. However, the personal approach in the development process is resource-consuming and is inconceivable without automation of processes and support systems.

The human resource development planning process is traditionally hard to formalize, since it is affected by a number of "subjective human factors" and interacts with other human resource management processes. During the course of research the authors searched for an opportunity to create a configurable and scalable system for human resource development planning, which could be adjusted for the needs of particular organizations. Such a system must be able to describe the knowledge and skills necessary for the employees, to identify the actual level of skills and development needs of the employees, as well as to describe the possible development solutions in a unified manner. Establishment of such a system becomes possible by selecting a competence based approach [6].

Identification of personal shortages of the employees' competences leads to gaining of precise information on their personal development needs. PEDP are being created for satisfaction of these needs. Conditions and restrictions determined by the organization, as well as specific needs of the company and employee are taken into consideration during the establishment of PEDP. A human resource development management module (HRDMM) has been developed for automated establishment of PEDP. The model contains algorithm creating the most suitable development solution (DS) for prevention of differences in competences of the listed employees. Operation of the HRDMM is regulated by 12 factors affecting the choice of development solutions and establishment of PEDP [7].

Regulating factors in the model are being expressed using parameters, which allow reaching the point, when operational results of the model comply with the development policy of the company

employees and the needs of the employees. The number of factors is unlimited. Introduction of a new factor is related to introduction of a logic test in a certain phase of model operation algorithm.

The main phases of the HRDMM are depicted in Figure 1. They are:

1. Selection of all suitable DS – a list is being created with DS, which at least partially allow reduction of the gap of the employee's competences.
2. Test of the selected DS in relation to conditions – DS non-compliant with the conditions set for the development process are being removed from the list, for example, allowable learning intensity may not exceed 2 hours per day.
3. Combination of the development plan – all the possible PEDP are being combined using the remaining DS.
4. Selection of the most suitable PEDP– using the analytical hierarchy process [8] a PEDP most appropriate to the planning conditions expressed by 12 factors.
5. Test regarding fulfilment of group conditions – testing, whether the selected PEDP meet the group conditions, for example, for the overrun of the group budget.

Operation of the HRDMM results in personal employee development plans to be further implemented in the process of HR development.

Knowledge management and e-learning for employee development

Employee development in companies takes place in formal (trainings, seminars conducted by teachers, e-courses) and informal learning (learning from colleagues on the spot, practice communities, assistance service, mentoring). More and more frequently formal learning is inconceivable without EL elements and use of IT. Use of e-learning improves the learning efficiency, reduces the training costs and time. Wide availability of mobile devices provides an opportunity to provide mobile learning in the real place and time without distracting the employee from the work process.

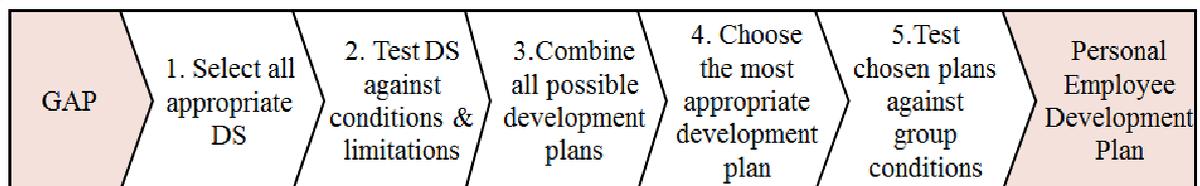


Fig. 1. HR development management model core phases

Knowledge sharing culture and free knowledge exchange among employees of the company depends on the KM policy selected by the company. KM programmes are being introduced, practice communities and expert groups are being supported and free movement of ideas and knowledge is being facilitated for successful knowledge accumulation, creation and development within the organization. IS of knowledge repositories, experts, assistance etc. are being used for technical support.

Both the KM and EL serve for the same goal – facilitate learning and competence development within the organization, however, they use two different perspectives. KM uses an organization level perspective to prevent insufficient knowledge sharing among the employees of the organization. Whereas EL highlights the perspective of the individual by focusing on acquirement of individual knowledge [9]. Interaction of both disciplines can be briefly characterized like this: KM facilitates EL increasing the efficiency of knowledge spread; EL and technologies used thereby stimulate important changes in knowledge change processes [10].

Despite the closeness of both disciplines separated practical implementation thereof is common. KM and EL may be located under supervision of various structural units of the company, use unrelated information systems and data structures. Furthermore, these structural units may apply different measurements for evaluation of the results and mutually compete for funding [11].

Joint researches of KM and EL show the significant opportunity thereof to improve the quality, convenience, diversity and efficiency. When jointly used, both disciplines are considered the learning catalysts of the organization improving the performance of the team members and serving as a base for

better results [12]. The authors propose the use of KM and EL integration approach for the provision of employee development.

Results and discussion

Establishment of an IT system is necessary for joint implementation and support of the abovementioned approaches. The authors propose IT architecture of a unified competence based development system with competence management, development management and EL management modules (see Figure 2). Opened architecture of the system would allow integration of other business systems of the company. The created solution contains three significant components:

- Competence as a unified evaluation criterion.
- Automated development planning on the basis of shortage of personal competences of the employees.
- Integration of KM and EL for the employee development.

Requirements for the employees of the organization are defined as competences. Actual competences are being identified by automated evaluation solutions. Identified shortage of competences serves as a base for development of organization by automated creation of individual and group development plans. Development solutions can be implemented as traditional training with presence, EL, experts' consultations etc.

The core of the competence management module consists of a competence catalogue. The selected solution provides creation of a universal competence catalogue to be potentially adjusted for the specificity of various organizations. This allows the system providers to offer the system as service for various clients. We propose creating a competence catalogue that may contain all of the competences necessary for the employees of a company including technical skills and professional competences and various soft skills. A similar idea is supported in attempts to standardise competences [13] and would address the fear of companies to lag behind with their human resource management by using narrow and outdated lists of competences [2; 14]. We suggest a hierarchical structure for our competence catalogue consisting of 5 hierarchical elements. Two highest of the elements would be reserved for grouping of competences. The next one would be reserved for the list of actual competences that are suggested as the building blocks of employee descriptions [1; 2; 14]. The last to hierarchy elements would be for parts of competences like skills or knowledge indicted by some authors as important indicators of the presence of a competence [2; 14; 15] and their respective groups which the authors believe may become a good link of the competence catalogue with personal development solutions for employees. This approach will allow us to potentially create a universal competence catalogue covering all necessary competences and will also make the competence catalogue bulky, a challenge we hope to solve by using an IT system.

Catalogue competences use the employee competence profiles indicating the competences and the level thereof necessary for groups of employees and separate employees. Automated (tests, 360 degrees, work performance data etc.) and manual (interviews, evaluations of colleagues etc.) evaluation solutions are used for the competence evaluation. Evaluation results are being registered in the personal employee competence profiles obtaining the competence gap. The shortage part of the competence gap is transferred to the development module for prevention of deficiencies, whereas the remainder is used for talent management.

The core of the development module is the HRDMM, which allows planning of employee personal development in automatic or automated mode. Operation requires a development solution catalogue, in which the organization registers all the available development solutions – courses, e-courses, learning objects, experts etc. Development solutions in the catalogue are being described by competences taken from the competence library. The criteria selected by the organization (price, speed, type of learning, location etc.) and weight thereof are being followed in the course of creation of the personal development plan. The employee receives his/her development plan and may commence implementation thereof.

The core of the EL module is the Learning management system (LMS) providing functionality of standard EL (tests, EL modules, communication etc.). The solution specificity provides that LMS will provide also the KM and sharing needs. Testing and evaluation tools within the system are being

adjusted for the competence evaluation needs. The EL objects published by LMS will form a significant part of the company's development solution catalogue.

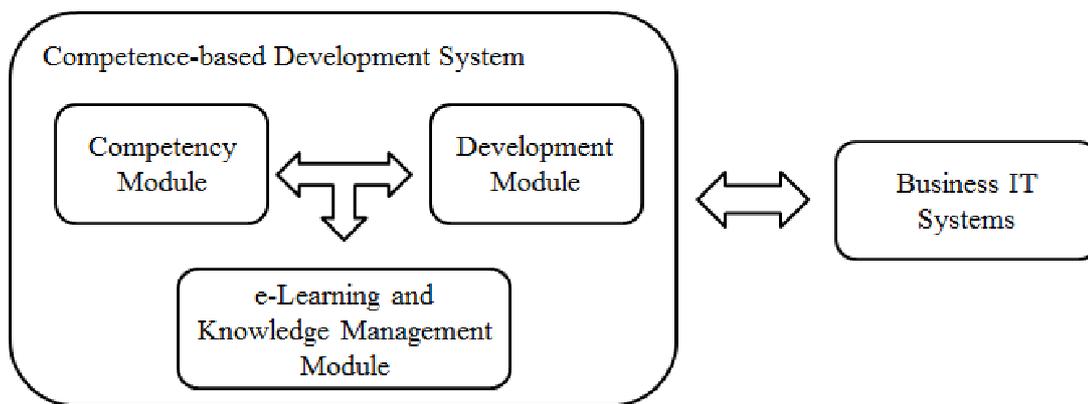


Fig. 2. Architecture of Competence Based Development System

Open architecture of the solution IS provides the integration opportunity for the company's current business IT systems (users' data base, human resource management and evaluation IS, key performance indicator (KPI) and work performance data etc.).

Conclusions

1. A well established and detailed competence catalogue is beneficial for the competence evaluation and planning of employee competence development.
2. A competence catalogue that is split in individual skills can be used as a basis for development of detailed computerized tests for employee evaluation.
3. Building computerized tests for competence evaluation with detail at the skill level allows linking of the test results to personal and group development plans.
4. Computerized tests for competence evaluation with detail at the skill level provide the companies with the opportunity to link the test results to individual EL modules and KM solution modules.

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