AUTOMATION OF THE PROCESS OF FORMING OF AN IT-PROJECT TEAM BASED ON COMPETENCY MODEL (USING LOGISTICS NETWORK PROJECT DEVELOPMENT AS AN EXAMPLE)

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Human resource management is one of the key concepts in IT project management, including such processes as forming of a team, ensuring its activities and development. The success of the IT project largely depends on the effectiveness of team formation. Therefore, the development of software for solving the problem of IT project team building is relevant.

Analysis and planning techniques of forming project teams are conducted in this work. The problem of software development is formulated.

At the initial stage of the project, a list of its major tasks is formed ($X = X_1, X_2, ..., X_n$). Then a list of competences which are required to perform each project activity is defined ($T = T_1, T_2, ..., T_m$).Each considered competence consists of a set of components that reflect the degree of formation of the required knowledge, skills and experience in candidates. Evaluation of the candidate's competences can be obtained by experts' estimates. It is required to form a team for an IT project from the set of candidates and assign them to the project activities in order to minimize the total difference between the competences required for performing j[th] activity and values of competence of i[th]performer and j[th]activity.

Competency model can be represented as an ontology that describes the relationship between the competences in a given domain. The following model is used for evaluation of the candidate's professional competence:

$$P = \sum_{i=1}^{m} k_i * p_i,$$

where$P$ – overall assessment of competences;

p_i –assessment of ith competence;

k_i – weight factor (importance) of ith competence;

m – the total number of competences.

Evaluation of each competence was carried out according to scales 1-4 "higher than necessary," "full compliance", "satisfactory" and "unsatisfactory".

Software for the formation of competences of the IT project was developed, method of "weighted sum" was the mathematical basis for this software.

Database and class, use case, activity, component and deployment diagrams have been developed during the design process. The following technologies were used for software development: WPF and MS SQL.

Test case was formed based on the IT project "Development of logistics network of mass consumption goods distribution" for performance check of the software. At the beginning, the following categories of skills were chosen: "technical", "management" (leadership), "interpersonal communication" and "strategic". Then competences for each category have been identified and the importance of each competency has been identified according to the expert assessment. 100 candidates were considered.