Chapter 2

Improving Managerial Training Services in Project–Oriented Organizations with an Ontology–Alignment–Based Recommendation Mechanism

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ABSTRACT

This chapter proposes a recommendation mechanism to enhance the managerial training in Project-Oriented Organizations (POOs). The mechanism is presented within the framework of an innovative system used to provide support to POOs during the acquisition and implementation of training services. The recommender engine has, as inputs, the knowledge gaps of the employees given by an assessment system and the alignment in RDF/XML format between two ontological representations: one for the management documents provided by POOs and one for the training curriculum offered to the POOs. The recommender engine makes suggestions for adapting the training curriculum to the POOs' needs, by translating the ontology alignment result into a user-friendly form and by identifying Web resources suitable to fill up the knowledge gaps. The outputs are smart recommendations meant to personalize the training curriculum to POOs and, thus, to increase the competitiveness of POOs.

INTRODUCTION

Recent studies reveal the increasing of project orientation in organizations, in different industries and countries. Adopting project orientation, the organization should innovate their organizational structure, for including project specific function, such as: project management office, and project portfolio group. A Project-Oriented Organization (POO) is mainly relying on its project management professionals. The individual should be assisted in dealing with the complexity and the dynamics of the project, in designing the project management process, implementing project management methods and solving conflicts. Several competence development activities can be considered for them, such as: training/further education, coaching and mentoring. These activities are often inter-related. For example, the coaching situations are increasingly organized for the transfer of the training content into projects. Project managers who graduate training courses are coached during the implementation of the training for the next suitable project. The personnel development actions can target only the POO employees or they are designed to encompass freelance project managers, who network with the POO. Target groups for the training in the POO are also project team members, project contributors, and members of project owner teams. Training can be organized "on the job" or "off the job". Training on the job can be performed in the form of internships, job rotation and by individual coaching measures. Training "off the job" means attending lectures, seminars and courses. The internal performance of training has the advantage that the content can be adapted specifically to the POO. The advantages of open trainings are the opportunities to learn the practices of other POOs and to network with project managers from other POOs. Despite the benefits brought by trainings, the training providers are often criticized for the ineffectiveness of their services. They bring few innovations, offering instead generic expensive solutions.

In the light of the above mentioned state of facts, the paper proposes an innovative and flexible framework, named POTOMAC, for improving managerial training and consultancy in project-oriented organizations. The framework consists in a set of interconnected software components, providing support to POOs during the acquisition and implementation of the training and consultancy services. The paper focuses on the recommendation mechanism used by the framework to formulate suggestions for adapting the training curriculum to the POO's needs and identifying, when possible, Web resources suitable to fill up the knowledge gaps of the employees. POTOMAC project exploits relevant ontology-based, semantic technologies: both the training curriculum and the POO managerial documents (reflecting the POO's needs) are semantically annotated documents combining traditional XML documents and ontologies. The alignment process of these two documents is the input for the recommender mechanism and includes the alignment of the both ontologies.

The chapter is structured as following: a section dedicated to the research context - recommender systems, especially the ones using ontologies, a section in which the proposed recommender mechanism is presented, a section in which an integration framework for the proposed mechanism is described, the future development part and the conclusions part, in which the originality and novelty of POTOMAC approach are highlighted.

THE RESEARCH CONTEXT

Recommender systems (or recommender engines) use a specific type of information filtering for trying to attempt recommending items (such as movies, books, music, news, Web pages, electronic commerce products etc.) that are likely of interest to a user. Typically, a recommender system compares the user's profile to some reference characteristics and attempts to recommend items that the user has not yet considered. These

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