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Chapter XVI

Applying Semantic Web in Competence Management

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Abstract

Efficient competence management is essential in knowledge-based companies. This chapter describes how the Semantic Web technologies can be used in managing employee competencies. Applying the Semantic Web technologies in competence management enables building systems that support highly dynamic environments, are extensible as well as interoperable between different application domains, and benefit from the use of machine-accessible semantics. Competence management systems should be available not only for managers but for all the employees of the company. As companies get larger, it becomes increasingly difficult to manage the knowledge and competencies that their employees have. Utilizing the Semantic Web opens many possibilities for building flexible systems for competence management.

Introduction

For companies with intellectual property, it is crucial to have an environment where the knowledge can be captured and shared efficiently within the company. Competence management is becoming increasingly important in today's competitive markets. Firstly, companies are constantly re-structuring their organization to better meet the challenges of the markets, which may result in employees with critical competencies being moved away from the company's core competence areas. Secondly, when downsizing the current personnel, it is crucial not to lose core competencies from the company. Similarly, when hiring new employees, it is also important to select the best candidates in terms of the core competencies of the company. Thirdly, new products and technologies are constantly entering the markets. This requires new skills and competencies from the employees in the company. Fourthly, successful project work requires that the project group be created from the best available candidates based on the competencies needed in the project.

A properly handled competence management builds a solid base for defining the business strategies for companies; the core competencies should be focused on the core business areas. Companies must decide how to arrange resources and employees to form core competencies, which then can be used to satisfy customer needs by implementing business strategies. The business strategy defines the position of a company in the industry and the relation to its competitors. A well-known model for helping to define business strategies is Porter's Five Forces Model, which outlines the primary forces that determine competitiveness within an industry: rivalry, new entrants, suppliers' power, substitute products, and buyers' power (Porter, 1998). In order to develop effective business strategies, managers must decide how to react to these external forces. A competence management system enables a company to place the most competent employees in the core competence areas, and, thus, have the best possible resources to meet the external forces.

Traditionally, competence management systems have been aimed at managers in the company (O'Leary, 1998). That is, the competencies are collected in one way or another from the employees by a human resource department, which uses a competence management system for refining and providing the information to the executives (Lindgren, Stenmark, & Ljungberg, 2003). However, an emerging trend is that the competence management systems are also designed for the entire company. In doing so, the employees of the company are able to publish and share their competencies not only for the managers but also between other employees.

One way of sharing knowledge—and maybe the most common one—is to first establish a network of contacts; that is, an employee knows what kind of competencies his/her co-workers have. After that, the knowledge can be shared by asking the person with a given competence directly. As companies get larger, it becomes increasingly difficult to manage the knowledge and competencies that their employees have. The knowledge sharing within small companies usually happens in a face-to-face fashion between the employees; everyone knows each other and the competencies of their co-workers. However, in large companies, which usually are geographically distributed between different countries and cultures, the contact network of an employee usually covers only a small fraction of the whole company. In such companies, efficient knowledge sharing is extremely challenging.