Modelling and presentation generation for ontology-based knowledge in experience management systems

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Abstract

In this article, an approach to modelling and presentation generation for ontology-based knowledge in an experience management system is presented. In public organizations, employees (users) are various: experienced or inexperienced, novice or moved from other positions. Senior users have experience in activities and in given working context. Experience may show the best approach to performing activities among the existing approaches … Such experience is collected from users during their work, accumulated and evaluated in a general storage subsystem called Organizational Memory. In the future, it is presented to novices in the public organization in order to help them to do their work. Then the public organization can keep all valuable experience of their employees for future reuse. Experience is collected in the form of an ontology background that specifies structure and relation of the data to the working context. Experience also needs to be generated and presented to other users. The ontology background makes the presentation generation run smoothly. The research in this area was initially developed and evaluated in the EU 5FP IST Pellucid project and it is further improved in the Slovak national SPVV project NAZOU and VEGA No. 2/3132/23 as well as towards to the Grid environment in the EU 6FP IST K-Wf Grid project.

1. Introduction

Important background of each experience management system [11] [12] is its ontology, which defines structure and relationships among experience entities. The ontology is the main mechanism used for the representation of information and knowledge, definition of the meaning of the terms used in the content language and the relation among these terms. Components of the system communicate using ontology structure, store and retrieve data organized and described by ontology to/from the system memory. The analysis and design of the ontology have to be in fluency with the CommonKADS methodology [9]. The OWL (Web Ontology Language) [3] [5] is usually used to describe hierarchical relationships, property relationships, equivalent/disjoint concepts, cardinality constraints, etc. OWL is involved through HTML, XML, RDF and DAML+OIL …

Facilities to put machine-understandable data on the Web are becoming a high priority for many communities. The Web can reach its full potential only if it becomes a place where data can be shared and processed by automated tools as well as by people. For the Web to scale, tomorrow's programs must be able to share and process data even when these programs have been designed totally independently. The Semantic Web [6] is a vision: the idea of having data on the web defined and linked in a way that it can be used by machines not just for display purposes, but for automation, integration and reuse of data across various applications.

2. Ontology-based and experience