Ontology-based Communication Forum

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1 Introduction

The aim of the system Webocrat is to empower users with communication system supporting information sharing. It provides one-way and two-way communication modes, including information publication, contributing to discussions, opinion polling on questions of interest, intelligent retrieval, alerting users on new relevant information, calculation of summary statistics, and convenient access to information based on individual needs.

In order to organize and access information available within the system, it uses knowledge modeling and document annotation techniques.

2 Webocrat system overview

The system consists of several modules. The central position is occupied by a Knowledge Model module. It contains one or more ontological domain models providing a conceptual model of a domain. The purpose of this component is to index all information stored within the system in order to describe the content of this information (in terms of domain specific concepts). All parts of the system use this module in order to organize information in the system and to access it.

Information stored within the system has the form of documents of different types. Since three main types of documents are expected to be processed by the system, a document space can be divided into three subspaces – publishing space, discussion space, and opinion polling space.

Since each document subspace expects different way of manipulating with documents, three system's modules are dedicated to them. Web Content Management module offers means to manage the publishing space. It enables to prepare documents in order to be published (e.g. to link them to relevant elements of a domain model), to publish them, and to access them after they are published. Discussion space is managed by Discussion Forum module. The module enables users to contribute to discussions they are interested in and/or to read contributions submitted by other users. Opinion Polling Room module represents a tool for performing opinion polling on different topics. Users can express their opinions in the form of polling – selecting those alternatives they prefer.

In order to navigate among information stored in the system in an easy and effective way, one more layer has been added to the system. It is represented by two modules, each enabling easy access to the stored information in a different way. Citizens' Information Helpdesk module is dedicated to search. It represents a search engine based on the indexing of stored information using an ontological domain model.

The other module performing information retrieval is the Reporter module. It enables to define and generate different reports concerning information stored in the system. It monitors content of the document space on behalf of a user and if information the user may be interested in appears in the system, it sends an alert to this user.

The upper layer of the system is represented by a user interface. It integrates functionality of all the modules accessible to a particular user into one coherent portal to the system.

Webocrat is being implemented using a client-server architecture with three types of clients. Mail client is specialized on alerting users on events which could be of interest for them. Standalone clients represent specialized clients – e.g. ontology editor for building and maintaining a domain model and annotator for enriching documents with a set of links to elements from the domain model. Web client (standard Web browser) can be used for accessing information published in the publishing space, sharing ideas and opinions in various discussions, and providing opinions on different issues by participating in some opinion polling.

The server part of the Webocrat system consists of two relatively separate parts splitting the system into two separate servers - Webocrat Information Server and Webocrat Ontology Server.

3 Conclusions

Currently, the Webocrat system does not exist as a whole – only in the form of several units to be integrated later into one coherent package. The project is in the phase of testing of some implemented modules, and designing and implementing the other modules. It is expected to be finished and launched into a routine operation in 2003.

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