On the Integration of Restaurant Services

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1   Proposed Work

As we know, Agentcities provides a framework to develop several services in a city through the use of agents. Services cover leisure, as well as health, and other security facets.

One of the most emergent popular services developed for a city is restaurant recommenders. Several approaches are followed, from individual recommender agents to distributed systems in which an agent for every restaurant is implemented. Different AI technologies have been deployed in the decision making process in which a recommendation is involved: knowledge-based, case-based, etc. , collaborative filtering combined with content-based filtering are the techniques most widely employed. The former consist of recommending items based on similarities between the past behaviour of the user and that of other users. The later, content-based techniques, recommends similar items based on the comparison of features of past items. The key issue is then, to keep information from the user in what is call a user profile and requires for an specific interface an specific operation.

A citizen can use the restaurant recommender service of her/his city. And, what happens if the citizen moves from a city to another one (for tourism, for job reasons, etc)? The user should start from scratch and to train a new recommender agent, probably with a different interface, in order to get some advice. One way to mitigate this situation is to provide the user with a common interface to all restaurant recommenders by means of a single recommender agent that can be used as an interface for others.

Our project will focus on the development of the interoperability of different restaurant services through a single interface agent. Special attention will be paid to ontologies in order to make existent systems inter-operable. As a result of the project, a prototype will be provided, able to communicate to several restaurant recommenders currently available at Agentcities (for example, at the University of Girona, the Rovira I Virgili University, and the University Ecole Polytechnique Federale de Lausanne).

1.1 Steps

To achieve our goal, we propose the following steps:

S1: Analyse the different existent software about restaurant recommenders. Specific ontology studied.

S2: Implementation of a new service (Genial Cheff) in a UNIX platform. This service will provide a restaurant search service and will be of public access, in order to obtain expertise in this kind of search. As a first step, this application will cover only one city restaurant information, and in a following step will cover multiple city knowledge.

S3: Study and implementation of a Consensus service on the application. This service will provide the possibility to search restaurants which ones will satisfy to different people or agents at once. The importance of the different degree of satisfaction will be in order to different importance degrees defined by the final user. The system must be able to learn from previous experiences.

S4: Study and Implementation of collaborative filtering capabilities. As a result, the system will be more effective in search capability due to the help of different similar agents to the different decisions.

S5: Communication of work results:
- Elaboration of a web page in order to show current progress of the work.
- Brief mid term report showing the progress and results achieved.
- Final report, showing final results, ways of exploitation and continuation.

1.2 Scheduling
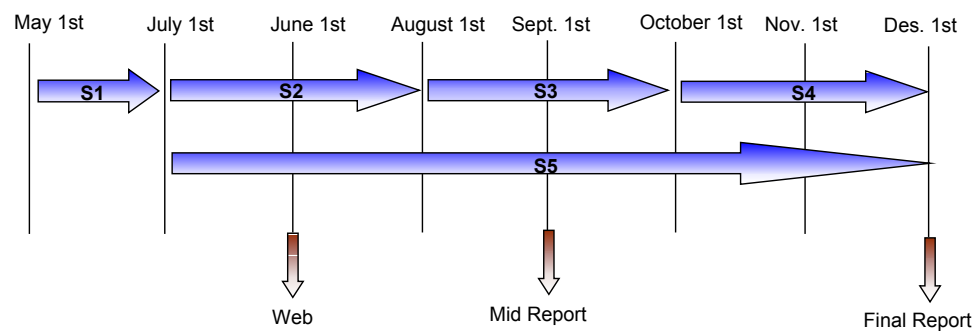
2   Innovation

The search of restaurants in different cities is, in the actuality, a non solved problem. In most of the cases the client trust must be relayed in other knowledge people. Even in other applications actually running of this kind, the search relay in a big centralized knowledge base system.

This will be the first application in which the search is personalized to the client by agent technologies, and the search will be optimised thanks to the collaboration between similar agents, involving the creation of appropriated integration / collaborative ontologies needed. It will increase the effectiveness and will construct a more powerful application.

3   Relevance to Agentcities.

This will be one of the firsts search services personalized to the client, with the implications of 'humanization' implied. The 'humanization' characteristics will be developed thru different technologies and will be applied in an innovative way to the field of collaborative agents in multiagent decision.

We think that the objectives accomplish directly the Agentcities interests providing a useful, real and new, (due to it's collaborative agent working way), application.

4   Exploitation.

Of course, this work has a direct *real* social utility and exploitation. From the starting point of this application, the system will increase it's experience and collaboration between agents. With the increase of the data and agent experience stored in agents database, the program will be more powerful, and will provide a REAL service to the community.

At least, this work shall provide the base for future development of agent assistants based on Internet technologies in different fields.

5   Participation.

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