MEDINFO 2007
HISA Ltd Australia
© 2007 The authors. All rights reserved.

A Multiagent System's Proposal for Chronic Patients' Relationship Management

Leandro Ramos da Silva[a], Márcia Ito[a]

[a]*Information Technology Application Center, "Paula Souza" State Technology Educational Center, Brazil*

Abstract/Objective

This paper presents the proposal of a multiagent system development for the Chronic Patient Relationship Management (CPRM) model. This model is proposed with the purpose to increase the adherence from the patients to their treatment. The CPRM model is based on the Customer Relationship Managemen concepts, which intends to leave the information on all the communication channels available. The datawarehouse, datamining and Distributed Intelligence's concepts play an important role on the CPRM model, once that one of its propositions is to guarantee an effective patient's follow-up, inter-relating information that are dispersed in institutions' departments as well as amongst institutions. To support the CPRM model execution, multiagent system is proposed once it can enable the use of models and techniques to deal with the model's complexity. For this purpose, it will be given a general view of the proposed system's, which tends to apply concepts on solving complex problems and on inter-systems integrations standardization for the model's success.

Keywords:

chronic disease, telemedicine, outpatient monitoring

Methods

Critical factors to a successful implementation of the model have been studied and it has become clear the need of a deeper study of the techniques and methodology to be adopted, including the examination of engineering softwares to implement an agent's software. At last, it has also become necessary to test performance, usability and portability to verify the resultant implementation.

Results

In the medical computering context, the telemedicine systems are composed by complex subsystems with dissimilar components, managing shared data and resources, and they occasionally require integration with the legacy systems.

This essential feature of the model should be kept and according to Booch, the agents technology has powerful characteristics to the complex softwares project.

In accordance with this, an agent is abstracted to solve a problem particularly, but it is able to interact with others in order to enable the resolution of a problem that, individually, it would not have been possible. Thus, the proposed system to the model is about an Agents Platform that can support the feature of a distributed intelligence guided to agents.

The proposed architecture implements the Agents' characteristics, in a way that each agent acts independently in his own health unity. Its rationalization is based on a rules shape through a subsystem based on the Jess framework that allows that new rules are put in, keeping the system operating even when expanding.

Finally, Service Oriented Architecture (SOA) is a mighty candidate to provide practical implementation to agents' system, and once its representation model of services and components esteems for communication standards and the independence in architecture, the integration between the various health unities is possible in a simple way.

Conclusion and discussion

The proposed implementation's aim is to provide the expansion of the CPRM model into a collaborative intra-institutions model using the agent's technology and new proposals of systems' integration, like the SOA.

Once there is an implementation able to support the requirement for the autonomy of the health unities at the same time that there is integration between them and availability of information on the necessary channels, its practical utilization becomes possible.

Address for correspondence

Márcia Ito
Centro Estadual de Educação Tecnológica "Paula Souza"
Núcleo de Aplicação em Tecnologia da Informação (NATI)
Rua dos Bandeirantes, 169 – Bom Retiro – São Paulo/SP
e-mail: m.ito@uol.com.br

Leandro Ramos da Silva
Centro Estadual de Educação Tecnológica "Paula Souza"
Núcleo de Aplicação em Tecnologia da Informação (NATI)
Rua dos Bandeirantes, 169 – Bom Retiro – São Paulo/SP
e-mail: lramos@gmail.com