

EVOLVING AGENT COMMUNITIES FOR INTELLIGENT INFORMATION PROCESSING IN WEB-BASED ENTERPRISE-WIDE INFORMATION SYSTEMS

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Abstract. The paper presents the approach to modelling virtual/real enterprises based upon the metaphor of a dynamic task oriented intelligent software agent community¹. A virtual/real enterprise is modelled by the collection of evolving Multi-Agent Systems (MAS) representing the departments. The departments communicate with each other via the Proxy Agents representing their heads and those executives who are in charge with some external communications/functions. These Proxies in turn form the Enterprise MAS on the higher level. On the lower level each member agent of the department MAS may be expanded into the sub-ordinate MAS having the same Generic Architecture. As far as these department models represent enterprise functional nodes they are predestinated to perform business processes - i.e. tasks. These tasks performed by information systems are merely the tasks of information acquisition, integration, mediation and interchange. MAS members with various specialisations dynamically form communities to execute these tasks. Enterprise-wide information system operates on the Intranet in case we deal with modelling of a real enterprise and on the Internet otherwise. Users perceive this information system as Virtual Information Space with native Unified Virtual Interfaces.

Keywords: Evolution, Intelligent Agents, Agent Communities, Enterprise Models, Business Processes, Information Systems.

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