Information Systems as Distributed Multi-agent Systems

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Abstract

With information systems increasingly distributed and embedded in real-world processes, it is becoming more difficult to arrive at consistent modelling representations that do justice to the complexity of these systems. Multi-agent system technology is currently being developed in a number of centres around the world to provide an open, flexible, and robust technological infrastructure to support such distributed information systems. We discuss the nature of this technology and some modelling approaches that can be used to represent and help develop these multi-agent systems.

Though much of the work so far has been devoted to the representation of inter-agent message passing, we examine here more recent ideas concerning how the internal architecture of an agent can be generally represented and how the coordination and behaviour of multiple agents can be modelled and supported with matching infrastructural technology. This is presented in the context of and with examples from the Opal agent platform under development at the University of Otago.