

# Modelling dynamic behaviour of business organisations— extension of DEMO from a semiotic perspective

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## Abstract

An organisation is by virtue an information system, in which information is used for communication and coordination of activities. This information system is built upon the organisational infrastructure and is supposed to support the business processes. To study the organisational behaviour in the form of business processes, one needs an effective modelling method to capture dynamics of business processes. In this paper we introduce the DEMO methodology for organisational modelling. An extension of the methodology has been made by incorporating a semiotic method. DEMO is a cross-disciplinary theory for describing and explaining the action of organisations. It contains several model types, each expressed in a specific diagram. They collectively provide the necessary knowledge for information systems development and business process redesign. The process model of DEMO has been discussed in detail in this paper. A need for a facility in DEMO has been identified to formulize rules and conditions for optional and conditional actions. Towards this end, a semiotic method, namely NAM has been chosen as a complement to DEMO for this purpose. After producing process model in terms of DEMO, we use NAM to capture norms (e.g. rules, regulations and conditions). The norms determine the conditions and constrains in controlling optional and conditional actions. They govern the behaviour of actors (agents), normally to decide when certain actions are performed. Norms define clearly the roles, functions, responsibilities and authorities of the actors. The extended DEMO has been applied to a real-life problem for demonstration purposes. q 2002 Published by Elsevier Science B.V.

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