



TAPMI

**T. A. PAI MANAGEMENT INSTITUTE
MANIPAL - 576104**

Research Seminar

“Managing Non-dominant Player Supply Chains:
Developing an Agent Modeling Framework through
Social Simulation Experiments”

Speaker

Prof. Saji Gopinath

T. A. PAI Management Institute

4.00 p.m. Nov 18, 2009, Classroom No. F2, TAPMI New Campus

All are invited

Abstract

The applicability of Agent Based Models for managing complex supply chains are increasing both in theory and practice. Even though the superiority of such models over the conventional equation based modelling for solving various supply chain problems is still debatable, various research studies have demonstrated the applicability of such models as powerful simulation tools for aiding the design of adaptive supply networks. In this paper we illustrate the applicability of an Agent Based Model in the design of appropriate incentive schemes in a collaborative supply chain network. Our results are based on the Social Simulation experiments conducted among several micro enterprises that are expected to configure themselves as a rural supply chain network. As against the normal supply chain configuration, our network had no single dominant player and the primary objective of the agent model was to provide a policy framework that will be collectively enforced by the players to ensure sustainability of the chain. The agent model was used to simulate the behaviour of various chain players over time in the presence of different classes of external stimuli. In addition to aiding the design of supply chain and incentive schemes, some of the counterintuitive findings of the study had proved valuable in the selection and training of the entrepreneurs who form the part of the supply chain. The paper also shows how some of the study results, especially the ones with regard to *linking pins* and *social rewards*, can be generalised for application in any adaptive supply chain network to minimise information distortion and to ensure global optimisation.

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