

# Virtual Enterprise Model for Integrated Planning in Manufacturing Supply Network

Jayeola Femi Opadiji<sup>1</sup>, and Toshiya Kaihara<sup>2</sup>

<sup>1</sup> Graduate School of Science and Technology, Kobe University, Japan

<sup>2</sup> Graduate School of Engineering, Kobe University, Japan

## Abstract

Value creation in manufacturing supply network often involves complex interactions among autonomous enterprises. Consistency is required in decisions made in all the planning stages if enterprises in such a supply network are to continuously have feasible and flexible plans which respond to volatile trading environments. We propose a virtual enterprise model based that integrates the strategic and tactical planning stages of materials procurement activity in a manufacturing supply network. In this model, each enterprise is represented as an agent participating in economic activities in multiple virtual markets. We employ a market-based approach to find satisficing tactical plan for in a supply network given strategic constraints.

## Keywords:

Virtual Enterprise, Supply Network Planning, Resource Distribution