Agent-Based Conceptual Model of Coordination
Collaborative Production Planning
In Divergent Two-Tier Supply Chain

Azizah Aisyati
Department of Industrial Engineering and Management
Bandung Institute of Technology
Bandung, INDONESIA
aisyati@yahoo.com

Andi Cakravastia
Department of Industrial Engineering and Management
Bandung Institute of Technology
Bandung, INDONESIA
andi@mail.ti.itb.ac.id

Anas Ma’ruf
Department of Industrial Engineering and Management
Bandung Institute of Technology
Bandung, INDONESIA
anas@mail.ti.itb.ac.id

TMA Ari Samadhi
Department of Industrial Engineering and Management
Bandung Institute of Technology
Bandung, INDONESIA
asamadhi@mail.ti.itb.ac.id

Abstract
Coordination members in supply chain need effective communication and information flows. One of tools which can support the coordination is agent-based model. In this study, it is considered independent partners consisting of one manufacturer and two suppliers which have individual decision for its production planning and the decision must be synchronize each other to achieve supply chain goal particularly to have higher service level for customer order. Agents represent supply chain members aforementioned who will exchange information and decision related to production planning. In this conceptual model, it will be described the production planning decision of individual participant which will be exchanged between supply chain members by agent-based modelling. Collaborative production planning is useful to achieve mutual benefit supply chain member by synchronizing their plan and deciding the most beneficial production planning.

Keywords
Agent-based, coordination, collaborative, production planning
Biographies

Azizah Aisyati is currently a PhD student in Department of Industrial Engineering and Management in Bandung Institute of Technology. She obtained her Bachelor degree in Industrial Engineering from Sepuluh Nopember Institute of Technology (ITS) and Master degree in Industrial Engineering and Management in Bandung Institute of Technology. Her research interests are operations research, production management and supply chain management.

Andi Cakravastia is an Associate professor and a fulltime lecturer in Industrial Engineering and Management in Bandung Institute of Technology. He obtained Bachelor and also Master degrees in Industrial Engineering and Management, Bandung Institute of Technology and PhD in Hiroshima University, Japan. He has published many papers in journals and conference events. His research interests are Operation Research and Decision Science, System Simulation, Supply Chain System Design and Development.

Anas Ma’ruf is currently an Associate professor and Director of Management Engineering Study Program, Bandung Institute of Technology. He obtained his Bachelor and Master degrees both in Industrial Engineering and Management, Bandung Institute of Technology and PhD in Toyohashi University of Technology, Japan. Dr. His research interests include production system, Computer Aided Modular Fixture Design Technology Models, and Shop Floor Control Information Architecture.

TMA Ari Samadhi is currently an Associate professor and a senior lecturer of Industrial Engineering and Management, Bandung Institute of Technology. He obtained his Bachelor degree in Industrial Engineering and Management, Bandung Institute of Technology and also Masters and PhD both in University of New South Wales, Australia. He has published many papers in journals and also conferences. His research interests are Production Planning and Control Design, Distributed Production System Development, Manufacturing System–Supply Network Integration Development, Quality Management System Development.