

Introduction to the Minitrack Intelligent Decision Support for e-Logistics and Supply Chain Management

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1. Introduction

Nowadays Information Technology (IT) is a necessary prerequisite for successful Supply Chain Management (SCM) and logistics. Strongly related to these fields, e-Logistics is developing very dynamically. Business-to-business transactions are made via the Internet and enterprise resource planning systems manage the transactional information within the enterprise. While IT systems are vital components in supply chains, their successful management relies on intelligent and coordinated decision making throughout the logistics network. Intelligent Decision Support using advanced decision technologies is becoming increasingly important in e-Logistics and SCM, as well. Data Warehouses and Data Mining can be used to store and analyze product, inventory, and sales information. Simulation and optimization, which can be found in advanced planning and scheduling systems, can be employed for, e.g., inventory, production, procurement and distribution planning.

Intelligent agents can, e.g., communicate with different partners in a supply chain, assist in collecting information, share product information, negotiate prices, and distribute alerts throughout the logistics networks.

The design and implementation of intelligent decision technologies to support human agents in e-Logistics and SCM as well is a very active field in research, consulting, and software development. Many such technologies or systems have been implemented during the last couple of years or are currently in the stage of implementation.

2. Focus, Topics and Presentations

The minitrack focuses on decision technologies which contribute to Intelligent Decision Support in the whole field of e-Logistics and in particular in all categories of Supply Chain Management. This includes but is not restricted to methodological issues such as optimization, heuristics and especially meta-heuristics, simulation, agent technologies, descriptive models, or data mining. Topics range from information management including, e.g., data warehousing, third and fourth party logistics provider up to closed loop supply chain issues, and beyond. Real world applications and software solutions which assist in solving decision problems are in the focus, too.

The minitrack within HICSS-37 consists of a wide range of excellent presentations. One of the major topics within almost all talks is IT-integration and information sharing no matter whether it is with respect to, e.g., warehouse control or the coordination of a whole supply chain. Intelligent agent based systems are explored with respect to the dynamics and agility of today's business processes. This may include simulated as well as physical agent systems and their inclusion into appropriate frameworks. Automated negotiations and combinatorial auctions are becoming more and more important within e-logistics. From a methodical aspect various approaches as mentioned above including Petri nets, meta-heuristics and even dynamic programming are investigated. That is, the sessions of the minitrack cover a considerable part of the field described above.