WEB-BASED SUPPLY CHAIN MANAGEMENT USING AGENT BASED APROACH

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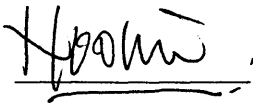
(Signature) :  Tarikh (Date): 28/3/2004

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ABSTRACT

(Bahasa Melayu)

Penulisan kertas kajian ini adalah bertujuan untuk membuktikan kesesuaian penggunaan teknologi agen dalam menyelesaikan masalah kekurangan koordinasi dalam pengurusan rangkaian pembekal. Tanpa koordinasi yang baik, kawalan jualan dan inventori tidak dapat diselaraskan secara teratur. Justeru, peningkatan mutu sistem pengurusan rangkaian pembekal adalah penting bagi meningkatkan persaingan kedudukan dan keuntungan. Teknologi agen merupakan teknologi terpilih dalam membangunkan koordinasi yang sesuai dan dinamik bagi entiti teragih dalam pengurusan rangkaian pembekal. Agen secara berdikari melakukan pelbagai koordinasi dan pengambilalihan tugas daripada penggunanya untuk setiap hari. Kelebihan penggunaan agen dalam pengurusan rangkaian pembekal berasaskan web adalah kawalan inventori dan pemesanan pembelian barangan secara automatik seperti yang dilaksanakan dalam prototaip.

ABSTRACT

(English)

The objective of this paper is to demonstrate the feasibility of agent technology to solve the problem on the lack of coordination within the supply chain members. Without proper coordination, sales and inventory control will not be synchronized accordingly. Improving Supply Chain Management System (SCM) is very important for increasing competitive position and profitability. Agent technology is the preferable technology for enabling a flexible and dynamic coordination of spatially distributed entities in SCM. This technology changes the metaphor for human computer interaction from direct manipulation by the user to indirect management through agent processes. Agent can autonomously perform a lot of coordination and everyday tasks on behalf of their users. The advantages of web-based SCM using agent technology are automated inventory control and purchase order as demonstrated by the prototype.

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LIST OF ABBREVIATIONS

AUML	-	Agent Unified Modeling Language
CASA	-	Collaborative Agent System Architecture
CPN	-	Coloured Petri Net
DSS	-	Decision Support System
ISCM	-	Integrated Supply Chain Management
MAS	-	Multi Agent System
OS	-	Operating System
PC	-	Personal Computer
PDAs	-	Personal Digital Assistants
SCM	-	Supply Chain Management
UML	-	Unified Modeling Language
XOR	-	Exclusive Or

Chapter 1

Introduction

This chapter presents the overview of the Supply Chain Management (SCM) and intelligent agent. The problem definition, objective of study, contribution and scope of the project are also discussed.

1.1 Overview Of The Study

Supply chain management (SCM) is the integrated administration of goods and service from supply side, including the logistics and services from the supply side, the logistics and operations components of the value chain, through the transformation process and distributed process and distributed channel to the customer. In other words, supply chain is a network of suppliers, factories, warehouses, distribution centers and retailers, through which raw materials are acquired, transformed, produced and delivered to the customer (Swaminathan *et al.*, 1998).

The focus of supply chain management has been shifted from production efficiency to customer and partnership synchronization approaches. To implement this strategic shift requires high level collaboration between the supply chain partner. Agent technology

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