ELIMINATING REDUNDANCIES IN CASCADED SUPPLY CHAINS AND ITS ORGANIZATIONAL IMPLEMENTATION ISSUES

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Abstract - Unified Demand Planning process proposed is an intention to centralize demand planning activities for cascaded supply chain partners. It is a collaboration process based on electronic logistics.

I. INTRODUCTION

Businesses have been forced to adapt their processes according to rapid changes in technology and the threat of severe competition. Integrated logistics prompts a study not only within a company but also extended to related supplier chains and customers. Even highly adaptive organizations need allied partners to succeed. Various inter supply chain management approaches have been developed for this purpose: buyer/seller alliances and partnerships, considering upstream suppliers, and adding value through chains. Interactions between these chains are cascaded on the basis of flows of goods, services and information along the path of transforming raw materials into end products, which form cascaded supply chains (CSC).

In this paper, we concentrated on demand planning process to illustrate how redundancies occur in CSC, and we suggest the unification of demand planning processes to eliminate redundancies regarding electronic logistics.

II. REDUNDANCIES

Traditionally, processes of each organization in CSC have acted in a decentralized and for the most part in an independent manner to meet their needs and goals. However, independent decision making activities occurring in each partner actually depend on other partners sequentially. Duplications in terms of processes and operations derive problems of communication overload, frictions in-between partners as to meet their separate goals, and inefficiency caused from the disharmony of services related.

Demand planning process is the initiative for production planning, inventory planning and purchasing planning. Multiple demand planning processes in CSC cause redundancies rooting from separate sales forecasting activities, quantitative analysis of buying patterns, and inefficiencies in consecutive planning activities. Proposition of "bullwhip" effect implies that demand order variability amplifies while moving up the supply chain. Excessive inventory, misguided productions, inaccurate purchasing, missing customer orders are other costs of redundancies in CSC.

Demand planning differentiate itself by its direct dependence on ultimate consumer demand. The independent manner of demand planning process is an opportunity to eliminate redundancies in CSC through unification.

III. UNIFIED DEMAND PLANNING PROCESS

Unified demand planning (UDP) process is a collective, centralized decision making process to accomplish all demand planning activities across CSC. Since the ultimate goal is to satisfy consumer demand, understanding and clarifying the source of information correctly is crucial for entire CSC. Supply chain partners could focus on their core business by creation of a glass pipeline across CSC.

"One For All, All For The Customer"

Application of unified demand planning process would encourage each chain to act synchronized. UDP starts with an analysis of volatile ultimate consumer demand. It predicts customer demand by quantitative methods like traditional demand planning. UDP proposes the idea of sales data collection into a common pool, and collaborative evaluation of that data regarding the overall success of CSC. UDP also brings the opportunity of "economies of scale" for the long-run average cost reduction by centralized decision making.

IV. ORGANIZATIONAL IMPLICATIONS OF UDP

Collaborative environment for UDP established by the support of an enhanced information infrastructure which forms a basis to carry out information from retailer to supplier over the same channel, across geographical and organizational borders. Integration of logistics processes using information technology brings forward the idea of electronic logistics management (e-logistics).

E-logistics is the key to optimize the internal business processes by streamlining and synchronizing relations between partners in CSC. Development of very large databases integrated with the Internet information services, Wireless Application Protocol, and eXtensible Markup Language are latest developments that foster enhanced UDP implementation.

Operational efficiency of UDP depends on four key organizational issues regarding collaboration. Trust should occur in technological, behavioral, and legal ways between partners. 'Decision Making' relies on the CSC wide analysis, and is an extended discussion platform clarifying ambiguity and reducing uncertainty by the push and pull of debate. 'Culture and People' issue necessitates an analysis of cultural formation in each partner to build coherence. 'Success metrics' is the performance measures for the UDP process and should be clearly defined and monitored through out CSC.

Detailed organizational implementation issues and quantification of UDP process are important contributors to the future of our research.