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INTEGRATION ASPECT OF SUPPLY CHAIN MANAGEMENT SYSTEM FOR ETHIOPIAN TEXTILE INDUSTRY

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ABSTRACT

In this research paper our aims to analysis the important implementation integration aspects of Supply Chain Management (SCM) System for Textile Industry in ethiopia. The typical problems facing with textile and apparel supply chain are short product cycle for fashion articles, long production lead time and forecasting errors for fashion items. The supply chain management can be useful tool for solving the problems. SCM is management of material and information flow in a supply chain to provide the highest degree of customer satisfaction at the lowest possible cost. SCM requires commitment of supply chain partners to work closely to coordinate order generation, order taking and order fulfillment thus, creating an “extended enterprise” spreading far beyond the producer’s location. Supply chains encompass the companies and the business activities needed to design, make, deliver and use a product or service. Businesses depend on their supply chains to provide them with what they need to survive and thrive. Every business fits into one or more supply chains and has a role play in each of them and supply chain management also is the integration of key business processes from initial raw material extraction to the final or end customer, including intermediate processing, transportation and storage activities and final sale to the end customer. Today, the practice of supply chain management is becoming extremely important to achieve and maintain competitiveness. Many firms are just now beginning to realize the advantages of supply chain integration. Supply chain management is an out-growth and expansion of logistic and purchasing activities and has grown in popularity and use since the 1980s. Important elements in supply chain management are in the areas of purchasing, operations and production and distribution. Finally, as markets, political forces, technology and competition change around the world, the practice of supply chain management must also change.

Keywords- Supply Chain Management, Purchasing Issues, Operation Issues.

I. INTRODUCTION

There is no restriction on technology transfer in the present world, the area of supply chain management becomes one of the key competitive fought nowadays between global companies and regions. New and latest technology gadgets are used for this purpose. Now in Ethiopia new export opportunities were created through initiatives such as AGOA (the African Growth and Opportunity Act), COMESA (the Common Market of Eastern and Southern Africa) in global market. For effective utilization of global opportunity the Supply chain management (SCM) is the very important tool. Supply Chain Management (SCM) is the coordinated set of techniques to plan and execute all steps in the global network used to acquire raw materials from vendors, transform them into finished goods, and deliver both goods and services to customers. It includes chain-wide information sharing, planning, resource synchronization and global performance measurements.

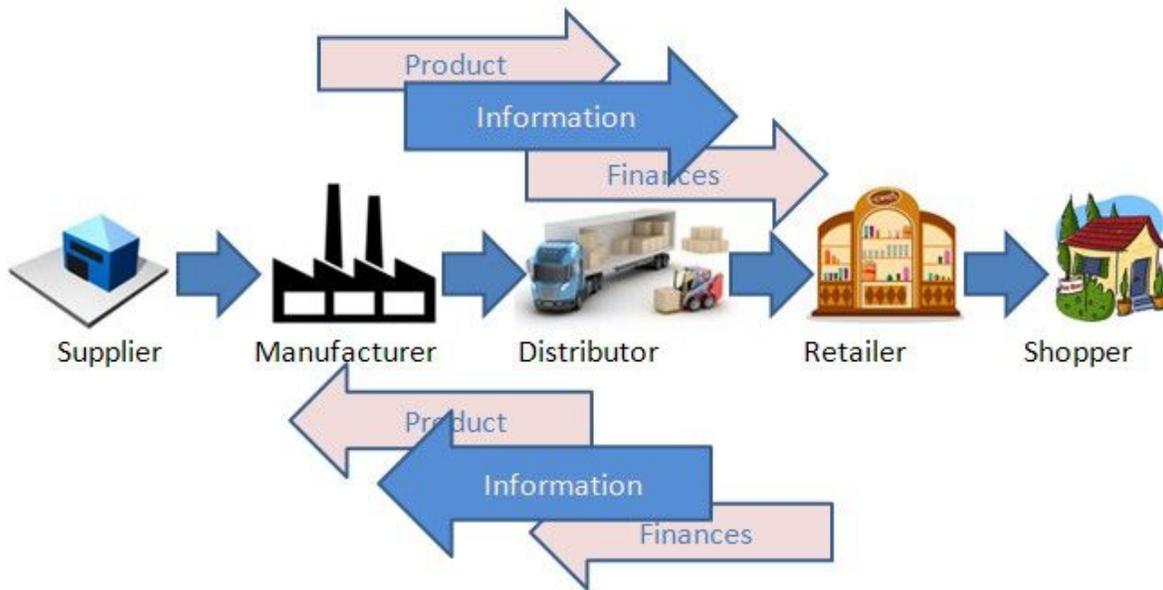
The textile industry is an important segment in Ethiopia’s manufacturing industry playing a critical role in its economic development. In a competitive world where there are flows of technology transfer, supply chain management is one of key factor in global manufacturing business.

Ethiopia’s textile manufacturing industry embraces both medium and large public and private enterprises. Their main activities include spinning, fabric formulation, dyeing, finishing and sewing. Cotton is widely available in Ethiopia and other materials including chemical fiber, wool, dyestuffs and chemicals as well as a small share of lint depend on imports.

The Ethiopian textile industry is the third largest manufacturing industry, only second to the food processing, beverage and leather industry. The Ethiopian textile sector mainly produces 100% cotton textiles. Each enterprise produces one product range, such as cotton yarn, cotton fabrics, bed sheets, blanket, knitwear etc. All the cotton yarn in the Ethiopian market is supplied to the local handlooms

SUPPLY CHAIN MANAGEMENT

A supply chain is characterized by the flow of goods, services, money, and information both within and among business entities including suppliers, manufacturers, and customers. It also includes all types of organizations engaged in transportation, warehousing, information processing, and materials handling. Sourcing, procurement, production scheduling, manufacturing, order processing, inventory management, warehousing, and, finally, customer service are the functions performed throughout the supply chain. In the figure 1 shown that the SCM deals from supplier to the shopper and ultimately up to end user customer.



Source: <http://cmuscm.blogspot.com>

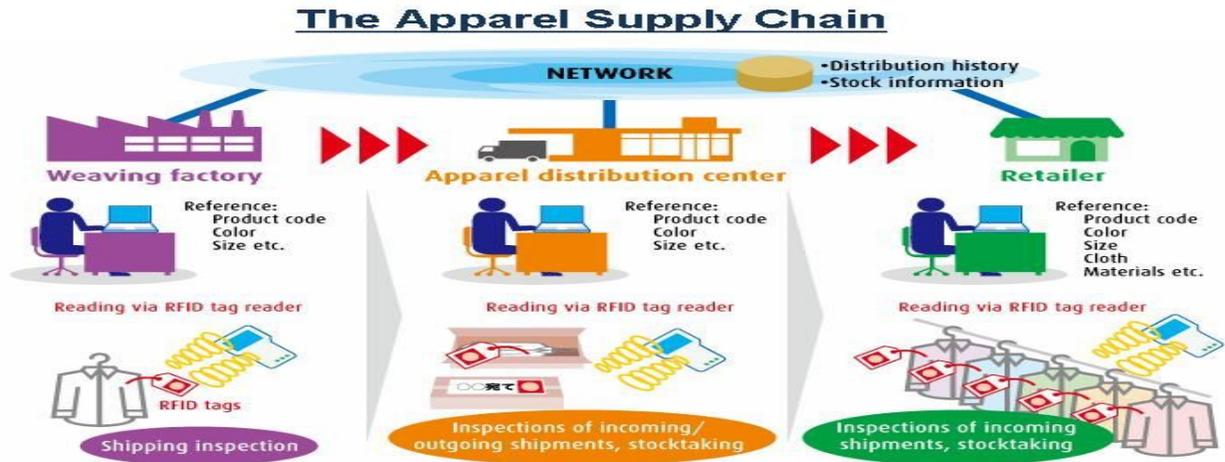
Figure 1: Supply Chain management

The ultimate goal of SCM is to meet customers’ demand more efficiently by providing the right product, in the right quantity, at the right location, on the right time, and in the right condition. SCM aims four major goals: 1) waste reduction; 2) time compression; 3) flexible response; and 4) unit cost reduction. These goals have been articulated in several contexts associated with SCM, emphasizing the importance of both intra- and inter-firm coordination. Industry practicing SCM seek to reduce waste throughout the supply chain by minimizing duplication, harmonizing operations and systems, and enhancing quality. When production and logistics processes are accomplished in less time, all entities in the supply chain are able to operate more efficiently, and primary result is the reduced inventories throughout the system. Flexible response is in order handling, including how orders are handled, product variety, order configuration, order size, and several other dimensions means that a customer’s unique requirements can be met in a cost-effective manner. Overall, all of these goals help keeping the costs at the minimum for a given value for the customer

II. PRINCIPAL OF SUPPLY CHAIN MANAGEMENT

In the figure 2 explained a example of the apparel supply chain system, in this supply chain, we consider from weaving factory to retailer. Because the supply chain management involves in the whole activities of enterprise management, the construction of the system not only needs the professional theory but also demands comprehensive application of management, system engineering, calculator science, communication network, database and software engineering etc. So it must accord with the request of standardization and systematization, and it should concretely follow the following principles: (1) Practicability principle: this principle means that the system can satisfy the demands, and it is convenient to maintain and simply to operate. Because it is based on the need of now and future to construct the system, it decides that the system must have high practicability, and can be constantly enlarged and perfected based on user requirements. (2) Dependability principle: after each sub system puts into practice, it will

become the indispensable assistant tool. So the system must continuously and reliably operate. System software must choose the international and popular operating system which has comprehensive application base.



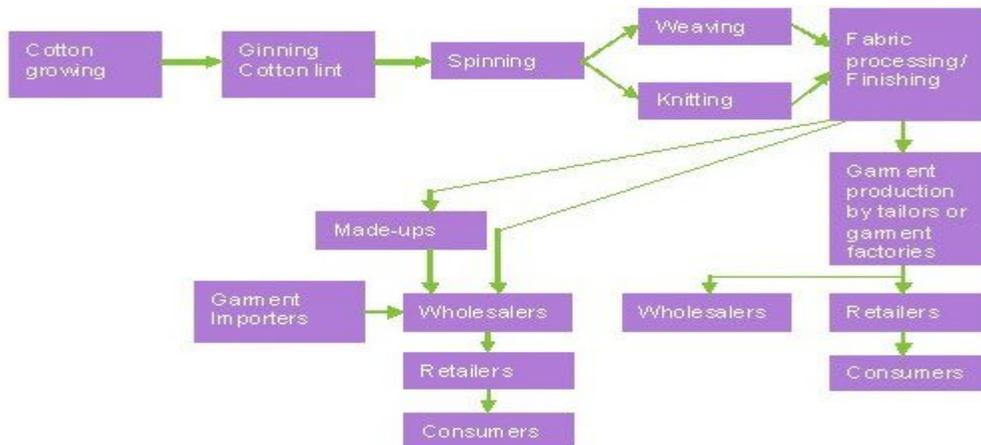
Source: <http://fibre2fashion.com>

Figure 2: The Apparel Supply Chain

(3) Safety principle: the safety is related to the fund and information resource safety, so the system should have multi-level protection. System need to adopt internet firewall technique, the share of information should have the strict security

III. IMPORTANT IMPLEMENTATION ASPECTS

According to review of textile industry in different aspects, it is visible that textile sector has significant role to improve economical growth in Ethiopia. Delivering the finished products on time from suppliers to customer would be possible through the proper application of supply chain management as explained in figure 3. In order to improve the business operations in terms of some factors including fluctuation of inventories, inventory stock outs, late deliveries, quality problem, etc., SCM is essential for manufacturing industries. Successful supply chain management requires following important aspects.



Source: COMESA

Figure 3: Supply Chain of Textile industry

Establishing E-Supply Chain in Textile Industry E-Supply Chain

A supply chain system established by enterprises and industries, which have close relations among them. In the circumstance of network, implementing supply chain model to establish management information system needs to deal with complex relations properly, and determine the degree of influence of each faction. Generally, large scale companies with plentiful investment in textile industry, can link to the network through ADSL, high-speed data cable, or by router, and then supply storage service to the interior department's by the help of host computer and or server.

Establishing Rapid-Reaction System in Textile Industry Rapid

Reaction System, also called efficient custom reaction system, enable tradesmen to indent and contemporarily deals with the intent with their provider, through various methods such as sharing information and clasp, as a result of this system, it can provide service of high level based on the stock of low level.

Establishing a mode of integration in textile industry

The biggest challenges that supply chain management will face to, are the becoming complexity of supply chain net in space time, increase in value of product by flow through the network, and the conflict among decision-makers considering their own profit. Compared with other industries, textile industry has some kind of congenital deficiency in the aspects of developing supply chain integration.

Horizontal integration in textile industry

Horizontal integration is a co operational relationship among different companies in the same level of industrial chain; they develop products, explore markets and ally to improve the ability of bargaining together. Horizontal integration can gain such success because such ally can promote various factors of productivity to flow and combination properly, and so create new productivity. Though the presence of horizontal integration, companies can take their advantages to form the efficient productivity and improve the complementarities of themselves, promoting rationalization of their industry configuration.

Vertical integration in textile industry

Vertical integration is a co operational relationship among different companies in different level of industrial chain, representing including agents, providers and so on. The main characteristic of vertical integration supply chain in textile industry is that, clothing tradesmen could not only retail operation, but also the others related. These retailers have their own spinners, loom factories at least, and some even own cotton plantation. In the textile vertical integration supply chain management, clothing retailers integrate backwards; obviously they play the role of a harmonizer. They must arrange all the activities related in the supply chain, such as logistics, storage and so on, from purchasing cloth to distributing the products.

Network integration in textile industry

Network integration indicates that, the core company predominates the core process (designing, cutting out, contacting with customers) of production manifesting in its lifecycle, and build up a network with other companies.

IV. CONCLUSION

Supply chain integration is a new proposition to the global enterprises, and was accepted by European and American enterprises. As Ethiopian's traditional textile clothing industry is changing its emphases from manufacturers to the demand of customers due to viable business environment and duty free market access to both US and EU, Ethiopia is now beginning to attract international buyers and investors makes it more available to establish supply chain. Consequently, how to utilize network and information techniques, integrate the relationship among retailers, manufacturers, providers of various accessories and services, establish an efficient, economical supply chain, and becomes an important strategy of improving the international competence of the textile industry. In this paper we find out different important aspects for composite textile mills, which can be very important for implementation of effective supply chain.

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