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Application of E-SCM Strategies to Enhance Efficiency and Effectiveness in the Clothing Retail Sector

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Abstract

In this globalized era, world business setup has been changing. With the growing impact of information technology, contemporary consumers are increasingly adopting online resources to shop both on and offline. To meet this changing consumer habit, supply chain management has to shift its traditional linear sequence structure to agile, prompt, cost effective and real-time information integrated process to respond to worldwide consumer promptly. Information technology in the form of e-business enhanced this overall function of SCM. Through the increasing implementation of information integrated SCM or E-SCM application, now firms are capable to access themselves in the real time information about the consumer demand. Logistics management, which was always been an immense challenge for supply chain parties to manage has become an efficient process through information integrated ware house management. Therefore, in this growing era of information technology, the paper aims to investigate how e-SCM strategy, focusing on e-logistics, enhances the overall business performance taking cloth industry as an example. To do that E-SCM strategy has been described in perspective of e-fulfillment, e-procurement, e-distribution and e-transportation.

Keyword: E-SCM, e-logistics, information integration, e-procurement, e-distribution, e-fulfillment, e-transportation

1. Introduction

The contemporary trade setting has changed in a great deal. The amplified IT application has allowed businesses to set up their operational plants in one country, headquarter in another country and dispense in all across the world. With the changing mode of business, consumer has also become wide awaked of prompt delivery and demand variety of product lines along with conventional price competitiveness. To meet this changing mood of requirement, Christopher (1992) asserted that company's supply chain is the most competitive factor that can make the difference, in meeting consumer demand in the highly competitive globalized marketplace. The evaluation and integration of IT and communication technology in the wearing of e-business has been fostering the supply chain recital to a large extent (Cagliano, Caniato and Spina 2003). The accessibility of appropriate information, the relocation of relevant and transparent business information are few of the benefits offered by the Information technology in the supply chain process known as E-SCM (Stevens 1989). With the evaluation of IT management, the traditional 'brick and mortar' shopping concept has been altering to 'click and mortar' shopping concept. Supply chain management has been responsible for managing diverse process including customer relationship and service, demand and order management, ensure on time material flow, purchasing and production (Lambert *et al.* 1998). In this regard, 'E' enabled SCM has been considered the foundation character of functional areas of e-business application to meet the above responsibilities including e-commerce, e-collaboration, e-procurement and e-manufacturing (Phan 2003). "Logistics" is the "connecting element" between the subsystems (e-procurement, e-fulfilment, e-distribution and e-transportation) of supply chain management (Bowersox and David 1996). In a simpler sense the e-logistics is the combination of information technology which fosters the information and logistics refers to those processes that are necessary to transfer to the goods sold over the internet to the customers (Auramo *et al.*, 2002).

Clothing sector has been considered the major sector for both the developed and developing economies contributing both to wealth generation and employment (Strengg 2001). Globalization effect on the industry is intensifying day after day which results companies sourcing components from overseas or manufacturing in another country with lower labour costs (Jones 2002). The clothing industry is characterized by several factors which include short life cycle, impulse purchase, high volatility and low predictability (Jones 2002). The e-business strategy also can play equal rule in this industry with the elevating stroke of e-SCM strategy for meeting the above characterization of clothing industry. The objective of the paper is set to examine the e-SCM

strategies emphasizing e-logistics management to enhance the effectiveness and efficiency of clothing industry focusing the areas of e-fulfilment, e-distribution, e-transportation and e-procurement.

2. Literature Review

2.1 E-logistics Management, the Linchpin and the Connector of E-SCM

With the growing impact of e-commerce on the logistic function, the remoteness among the supplier, customer, and manufacturer has been shrinking day after day. As a part of e-business, e-logistics is applying the concepts of logistics electronically to those aspects of business conducted via the internet (Bayles 2001). However, the definition of e-logistics is hard to provide due to significant impact of e-business on logistics. In this regard the simplistic definition can be the e-logistic means to transfer the goods to the final consumer who bought it over the internet (Auramo *et al.* 2002). E-logistics, basically builds the foundation of a complete transportation system based on information technology. It connects different supply chain entities through the IT based transportation system. It facilitates the entire system by offering real time information visibility of entire transport network with the objective to accomplish transport management cycle, plan, delivery, post delivery and reporting (Dawe 1995).

2.2 E-fulfilment- the Cycle to Fulfil the Consumer Order through the Movement of Logistics

An e-fulfilment centre is designed to meet the frequent and high order volume with the intention to assure flawless consumer demand in the arena of business to consumer e-commerce. The system converts the conventional warehouse management system into multichannel fulfilment centre (Tarn *et al*. 2003). The process is divided into two categories one is forward e-fulfilment and other one is reverse fulfilment process. True e-fulfilment system requires the fully automated system involving the activity from order taking to order delivery to the customer (Cunningham 1999). In the world of e-commerce e-fulfilment is the power of e-SCM strategy to satisfy the ultimate consumer through transferring the desired logistics. One of the main secret of this power house is right information direction from order management centre to warehouse through the multiple platforms of e-logistics partner (Tarn *et al*. 2003). Another success of e-fulfilment depends on the collaboration with third part logistics partner especially for transportation. Such as, DHL provides its logistics services to Helwett-Packard (Hertz and Alfredsson 2003).

2.3 E-procurement Fosters the Procurement of Logistics Management

The enormous elevation of information technology brings revolutionary change in the procurement management of an organization. E-procurement can be defined as the use of information technology in the purchasing management of logistics to facilitate B2B purchase (Tarn *et al*. 2003). After the purchase of logistics, e-logistics management takes place to carry the item at required place. Different forms of technology have been incorporated in this purchasing management; among them six are very important including e-ordering or MRO (e-maintenance repair operate), enterprise resource planning (ERP), e-tendering, e-sourcing, e-auction and e-informing. Through the information technology in the purchasing management in e-SCM both the buyer and vendor has significant number of benefits. The noteworthy benefit on the buyer side is the elimination of tedious paperwork and long conversation with individual interested party to sort out the final choice list and most significantly it quickens the order-cycle time. The vendor side is also benefited in the same way through optimizing the cost and time efficiency.

2.4 E- Distribution Enhances Momentous Customer Service

The Growing impact of e-business also allowed the firm to bring changes in their distribution techniques of logistics among the consumer. The information integration in the supply chain process reduces the cost of distribution and ensures timely dealing of inbound and outbound logistics (Stefansson and Stenberg 2007). The e-distribution involves creating extranet website that facilitates and automates the order taking and customer services processes to reduce cost of selling. Through the e-distribution process the e-retailer can ensure noteworthy distribution process ensuring efficient management of retailer's inventory and access to the suppliers' stock levels and incoming shipment information (Stefansson and Stenberg 2007).

2.5 E-Transportation is the Means to Deliver Logistics on Time and Enhance the Overall Process of E-SCM

If a logistics is a connecting element of supply chain management (Bowersox and David 1996) then transportation is a means of facilitation to execute that connection. For effective complementation of e-fulfilment process with noteworthy consumer satisfaction, organization gradually implementing more complex business model which in turn requires the customized logistics solution (Stefansson and Stenberg 2007). E-Transportation management incorporate number of benefits that include effective warehouse operation through the implementation of state of art technology such as use of RFID technology during loading, unloading, pick and preparation processes. The process reduces the delivery time and helps to implement JIT practice. Through the use of technology, e-transportation can adopt real time dynamic route planning and assure on time delivery. The process enhances the delivery reliability through the process of tracking missing goods and service.

2.6 Involvement of E-SCM Strategy in Clothing Sector

As stated earlier, the clothing sector is highly diverse and heterogeneous; the customers in this industry is highly volatile (Bruce *et al*. 2004). The involvement of e-commerce in this sector can be described in two ways; the first way leads the involvement of supply chain design (Bruce *et al.*, 2004) and second involvement is very much downstream concerns the electronic interface with retailer and consumer (Seock and Norton 2007). While expediting supply chain strategy, Abernathy (2000) stresses on the lean SCM strategy for clothing retailers because they need rapid replenishment and strict shipment in terms of delivery times, order completeness and accuracy as because the market is highly volatile thus require quick response from supply chain. He also illustrates IT involvement in the wearing of e-commerce is the key to attain the objectives of lean supply chain strategy in every echelon. To also develop the agile operation in the supply chain process, IT has a crucial role to meet up the minimal lead time requirement to serve largely volatile consumer group (Bruce *et al.* 2004). E-commerce in the clothing sector can facilitate the process to respond real time changes in the demand through enhancing visibility of requirements and reduce the amount of stock (Bruce *et al.* 2004). In the fashion retailing including clothing and other facets of fashion, the internet shopping has been dosed up day after day because of immense number of choices and the quicker access to vast number of alternatives through the e-catalogue management system; the e-catalogue management system also used in the B2B procurement system in the wearing of e-procurement (Seock and Norton 2007). The fashion websites has become a powerful means product information which gives them options whether to buy online or offline. McKinsey Marketing Practice (2000) research indicated that more than 50 percent clothing shopper used multi channel for shipping based on the product information from online product resources. The typical e-fulfilment process is also a great challenge for the electronic clothing retailer specifically to meet up highly volatile logistics according to the demand of consumer (Jones and Towill 1993). Therefore the involvement of E-SCM strategy is vital in clothing sector.

3.0 Analysis: The Challenges of Existing Retail Clothing Supply Chain Framework of and E-SCM Strategies to Enhance

The SCM framework of clothing industry has been depicted in figure-1. It has been adapted from Supply chain management of European Textile Industry.

3.1 Clothing Manufacturer: Problem in Traditional System and E-SCM Strategies to Overcome

The clothing manufacture needs diverse line of raw materials depends of the diverse line of wearing (trouser, t-shirt etc.). The dock areas have to be very labor intensive and efficient. Here the problem created with accurate configuration of transport for either direct store delivery or distribution centre delivery. The second challenge is to assure the JIT implementation to accurate landing of the product. The third problem is manufacturer receive insufficient information to assure accurate amount of delivery. Sometimes, the communication of sales and inventory report delayed which also produces the same problem of accurate amount of delivery.

Implementation of E- Transportation management can be implemented here to meet the problem. EDI, Barcode or implementation of RFID in the transport can help in a great deal to assure the implementation of JIT practice. The technologies can also be used to capture the manufacturing data to give real time view to the receiver about the shipment and also leaves a cross checking option of order vs. delivery. The entire process will amplify the speed of fulfillment process.

3.2 Distribution Centre- Problem in Functions and E-SCM Strategies for Distribution and E-fulfilment Centre

Distribution centre is the heart of retailing business. It can be operated by the manufacturers, retailers or service providers. From this distribution centre, the supplies are made to large number of retailer shop and e-fulfilment centre. Several challenges include

- Manual verification of deliveries or partly automated verification requires time and create wrong delivery of the materials, cause error and create unknown inventory
- Just in time store delivery for timely replenishment
- Error occur while shipping small quantities to different retails shops and e-fulfilment store
- During the reconditioning process (such as ironing) in the distribution area, it is getting difficult to organise to track and trace the garment. Physical flow or often a 'black box' in data may exist which makes it difficult to track the current location of the garment within a very short period of time. Therefore, loosing of garments, thefts and shrinkage may occur
- Due to insufficiency in inventory data update, the warehouse management has to involve frequent inventory captures. Therefore, the company has to bear big storage cost along with extra cost due to discrepancies like theft, shrinkage, data input errors and unpacking processes for replenishment
- Due to in insufficient data transfer and delay in shipping, replenishment at the shopping centre cannot be replenished on time thus OOS (out of stock) can be occurred at the retail inventory

E-SCM strategy can play a vital role here as it involves all the dimensions of the E-SCM including e-procurement, e-transport, e-distribution and e-fulfilment. The implementation of the following strategy can give all the associated partners a real time view of the entire e-logistics transformation from distribution centre to either e-fulfilment centre or at the shelf of the retail shop.

- Implementation of automatic data capture materials (ADC) including barcode reader, RFID technology can be implemented to reduce the labour intensive work thus can save significant storing time.
- Enterprise resource procurement (ERP), warehouse management system (WMS) and supply chain management system (SCMS) can be implemented along with 3PL parties and manufacturing organization to track real time inventory and thus can implement JIT management practice. ERP system is the planning backbone links all the remote processes across the total system. SCP is the other leg of the planning system (Sherman 2000).
- In the execution part of e-fulfilment process two systems can be used for facilitating e-distribution which is OMS (order management system and) and WMS.WMS is responsible for activities from receiving to shipping. WMS does this activities based on the data provided by OMS e-distribution system. Here TMS (Transportation management system) is responsible to transport the product to the retail shop or e-fulfilment centre.
- Effective picking system is vital for end to end fulfilment system. An effective WMS integrated picking method including RFT (raid frequency terminal), EPC (electronic product coding), wireless speech recognition, pick/put to light, pick-to-display system can be implemented. (Tarn *et al.*, 2003)
- Container management can also enhance the speed of picking. Such as different coloured container can enhance the pick frequency for fast moving SKU (stock keeping unit) (Tarn *et al.*, 2003)

3.3 Retail Store Function: Existing Challenges and E-SCM Strategy to Improve

The clothing retail store can be divided into three parts – retail back store, front shop and point of sale. In the back shop, receiving of items, checking, storing and selection is done for displaying the front store along with replenishment of demandable item. In the sales floor the major responsibility includes customer service through shelving, replenishing, rechecking, and replacing the cloths. At the point of sales the security tag is detached, bar-coded for billing and finished the process by transferring the item to the consumer. Major challenges include the followings:

- The verification of the incoming items at the inventory is labour intensive and time intensive.
- Manual scanning through bar-coding may create error
- If the deliveries are not accurate or if the wrong deliveries take place then it is time consuming process to identify missing garments, put request for extra purchase order and return the misdirected delivery back to the distribution centre. The process creates discrepancy between data and physical inventory.

- A delay in receiving required clothing items creates out of stock situation at the retail stock thus hinders the consumer satisfaction process.
- Replenishment is continuous process at the retail store when required. Due to continuous replenishment at the front store, the inventory cannot be exactly determined at the back store. Therefore, tracking and tracing of garments is tough to synchronize for re-order.
- At the store, due to large verities of choice it is tough to search and replenish the item for the service stuff and thus significantly hinders the entire consumer satisfaction process and creates out of stock situation. Therefore, to maintain the flawless consumer service more stuff is required to look after these issues.
- The retailer failed to receive any information regarding the consumer choice especially why consumer does not but the certain items or not?
- At the retail store, consumer are not able to check the item by themselves
- Long queues take place in front of point of sale cause major consumer dissatisfaction.
- Returns are not possible if consumer lost the receipt of sale.

E-SCM strategy at Retail shop: As previously stated, EDI, barcode scanner and implementation of WMS and ERP, E-POS can play vital role to avoid this occurrence but one new technology RFID (Radio frequency identification) can bring revolution in the entire e-supply chain process (Jones, 2002). RFID is a technology used that is used to communication with identifies objects through EPC (electronic product coding) using radio waves, so that object can be recognized, tracked and traced.

- RFID is able to scan quickly and promptly a large number of item simultaneously and show the quantities, style and price of the item and thus accelerates the system by saving time and labour involvement.
- RFID can accelerates the process by simultaneously tracking the location of the product, monitoring level of inventory at the back and front of the shop, develop better stock plan, reduce human errors and involvement. Through the above benefits, RFID certainly enhance the consumer benefits and reduce the store cost and amplify the shopping speed.
- Service stuff can offer better and fast service to the consumer using the benefit of fast tracing clothing items. Using the fast tracing, service stuff can enhance the replenishment process and thus manage the stock level more efficiently. The process certainly develops the performance of OMS and WMS process and thus can e-distribution and e-transportation process.
- Making loyal customer is one of the prime goals of any business. RFID is an effective technology to serve that purpose. RFID is able to offer immediate information of the customer regarding his choice based on past buy from the store. Therefore, a fashion retail can offer him more customized service and thus can create opportunity for better up selling and cross selling(Moon and Ngai 2008)
- Using RFID terminals, customers can check available sizes, styles of the same product. The application also includes virtual catwalk so that consumers can easily select their choice and test different combinations (Moon and Ngai 2008)
- RFID can significantly speed up the operation at POS by reducing the long queue which often creates customer dissatisfaction. The process enables the self checking process so that consumer can read the EPC level and pay the item at cash terminals.

3.4 Reverse Order

The consumer returns the order due to several reasons, among them defect in the order, finish of life cycles, fitting problem are the most frequent problems. When the consumer returns the product, it is either returned back to manufacturer or shelf it again after quality checking. In e-commerce, the address is stated of nearer distribution centre for return or separate return centre name is given for return (Tarn *et al.*, 2003). The problem includes picking error, amplified manual process, tracing problem and discrepancy in inventory management system. To overcome these shortcomings RFID technology along with EDI technology can play vital role to ease the return process from the customers. The database using the technology can instantly track the information regarding price, place and customer information. Therefore, the quick identification process without the selling receipt can enhance the reverse service along with inventory management efficiency.

4. The Overall Outcome of E-SCM Strategy Implementation in the Clothing Retailing

After discussing the E-SCM strategies to enhance the effectiveness of the sector, the gist can be outlined as follows:

- Real time information fosters the availability of right amount of logistics at the distribution floor, retail shop and e-fulfilment centre
- JIT implementation through adopting e-transportation management allowing real time view of the product transferred
- Enhanced customer service by maintaining stock of inventory, vast product line offering and one to one customer service
- Faster Consumer Response through tracking, tracing the product
- Accuracy and Speeded up e-fulfilment process through enhancing overall order, warehouse and transport management
- Enhanced e-distribution and e-procurement through the implementation of interlinked OMS, ERP and WMS

5. Case Study on Retail Clothing: Marks and Spencer (M&S)

Marks and Spencer, is one of the unparallel name in the clothing sector of the world. It is a general retailer sells cloths, foods and financial services under the St. Michael trademark in different parts of world where it operates. Over the last 129 years M&S has grown from a single market stall to become an international multi-channel retailer. It now operates in over 50 territories worldwide and employs almost 82,000 people. Through diversifying store locations, channels and product ranges M&S is reducing their dependencies on the UK and broadening international focus. Its UK turnover is split between Food (54%) and General Merchandise (46%). With 766 stores across the UK and a growing e-commerce business, M&S sells high-quality, great value food and remain the UK market leaders in womens wear, lingerie and menswear. The e-supply chain management of Marks and Spencer depicted here is taken from different case study on Marks and Spencer from several electronic sources and numbers of personal to the visit o the stores. Numbers of visits were given to different Marks and Spencer retail cloth stores and endeavoured to collect necessary data by asking store supply chain managers at the stall

5.1 The Supply Chain Management of Marks and Spencer- Internal Supply Chain Integration

To have more efficient plan and better planning M&S first integrate the internal store activities by the corporation and it is by the information network between different departments including marketing, Sales and distribution and other support departments. Supply chain planning (SCP) and entrepreneur resource planning (ERP) is supporting this integration (RFID Journal, Inc.). Their SCP system integrates all the daily activities done based on the sales at the store and e-order which includes: Customer demand forecasts, resource allocation, and purchasing plan and synchronize production schedule management with the suppliers. Their ERP system integrated the executive functions related to order management, financial management, stock planning and production management.

5.2 The Supply Chain Management of Marks and Spencer- External SCM

Vendor Managed Inventory (VMI) is used by Marks and Spencer to share the inventory information with the supplier to efficiently manage the inventory. M&S implemented the ediTRACK business process tracking system throughout their international supply chain and now use the system to give visibility and control over all of their directly sourced merchandise. In 2005, ediTRACK was used to manage over £800 million of stock. ediTRACK's event based structure tracks the progress of purchase orders all the way through the supply chain; holding detailed information on the activities performed to the orders, whether they have been consolidated at origin, loaded at the factory or if they have travelled by road, sea or air. JIT practice is assured through the technology in the overall when the manufacturer is finished. M&S starts exploiting the e- transportation benefit through the Geographical Information System to define vehicle road model and shortest distance model. This

technology fosters their e- fulfillment process. Due to the prompt e-fulfillment of e-logistics their online sales has boosted up by 20% in the fourth quarter of 2008/2009 announced by Sir Stuart Rose, chairman of M&S.

Source: (http://www.cio.com/article/487502/Marks_Spencer_Online_Sales_Rise)

5.3 The introduction of RFID enhanced logistics process for Marks and Spencer

Marks and Spencer is one of the leading retailers of UK has achieved momentous growth rates and market share of its different market segment. The euphoric growth suddenly stumbled during the period of 1998 when stock fell about 34% (Economist, 1999a). Market share fall by 1% for the first time in years; 50% of profit fall during the period including overseas profit fall by 100 million (Economist, 1999a). This was the initiation of stumbling business situation and continued through the fluctuating business format for Marks and Spencer. To come over the situation M&S took massive action which includes (M&S Press releases 1999, www.marksandspencer.com): Competitive analysis, agility in information gathering and sharing in supply partners, Proactive communication and targeting consumer and E-commerce development Massive investment plain in IT. Based on their strategic planning, they started re-evaluating and reengineering their business process and declared to invest GBP 450m over three years to revamp its e-SCM arrangement and they also target to save GBP 10m through the usage of the automated system. In this process, they revolutionary announcement made by April 11, 2003, Marks & Spencer this week said they are going to take pilot project on RFID by tagging EPC on clothing. The major objective is to enhance customer service and sales (RFID Journal, Inc). After the successful project, M&S successfully tagged 3.5 million UHF tags specifically those based on the auto ID centres EPC specification. Based on the technology they already bought revolutionary change in their point of sales system. To efficiently manage the inventory specially for order fulfilment process, M&S build the on-line order platform that link the all the sales channels with its back office supply chain systems and it can track the shipment process to consumer while delivering their requested items

(http://www.computerweekly.com/Articles/2007/04/17/223056/ms-to-run-multi-channel-order-system.htm).
Recently M&S has initiated the E-POS system to enhance their e-fulfilment system through the real time information sharing. ediTRACK's software is managing their E-POS system. After initiating massive invest in IT and supply chain responsiveness, M&S starts getting their revenue back in their business. Overall sales pushed by 1.9 percent in 2008/09(http://www.cio.com/article/487502/Marks_Spencer_Online_Sales_Rise).

6. Challenges/Barriers to Introduce E-Supply Chain Management

There are number of issues to consider while implementing E-SCM strategy. The foremost concern in this barrier list includes ‘Trust’ among the supplier and freedom information throughout the supply chain process (Scalet, 2001). The author argues that the state of art technology failed to build any concrete and synergetic relationship if information is not shared openly with required supply chain partners. Management fears that if the information is shared then competitor will easily get the information and thus competitive advantage can be copied. The partnership of Procter and Gamble and Wal-Mart is one of the best examples of trust in supply chain management. Based on the relationship, Wal-Mart opens up their customer information through the E-POS system to P&G to give a real time view of their product sale. Another barrier of E-SCM strategy implementation is the extra cost imposition on the small supplier due to adopt a new system which often too hard for the small organization to carry. The major challenges include E-fulfilment processes (Stevens, 1989) include

- High Start-up cost but slow return along with high customer acquisition cost
- lack of ability to serve and fulfil consumer expectation through speed of delivery according to their demand
- Failed to offer consumer a sensory feelings of the product, thus creates high return of the product which fails to retain existing consumer and attract new one
- Demand is tough to forecast due to easy access in the internet sight

Major challenges e-procurement includes:

- Immaturity of marketplace services: Due to Less developed market, few companies are facilitating partially E-RFQ (electronic request for quotes), dynamic bidding, reverse and forward auctions, e-catalogue creation and system maintenance. Due to insufficient market structure, companies are charging high for hosting services, logistics, payments, system integration, outsourcing and information technology consulting (Angels and Nath, 2007).

- Immaturity of suppliers: Immaturity of suppliers and buyers also put a high barrier to implement state of art e-procurement system.
- Small Firm size is also a grave matter here as putting barriers. To integrate small firms in the system is also a big complicated and costly matter for both the organization especially for the small organization to carry extra cost for it(Angels and Nath, 2007)
- E-procurement software immaturity is also a big issue to consider. It is tough for the e-procurement system to integrate the new data while adding new procurement system as firms extends their procurement supplier with the time (Moinzadeh, 2002)

E-fulfilment process is more than pick-pack and shop (Tarn *et al.*, 2003). In this competitive business world, the basis of e-fulfilment concepts builds on the sheer customer satisfaction- the process stars with click of consumer request and ends with delivering according to the demand of consumer satisfaction. Therefore, a pure understanding of demand, type of demand, efficient management of e-logistics to fulfil the even small amount of product, on time delivery of required logistics and better coordination of entire supply chain echelons is prerequisite to avoid the barriers. Therefore, it an utmost need to adopt IT in SCM to speed up and better coordinate the process.

7. Conclusion

In this paper, an endeavour is given to develop the basic understanding of the impact of E-SCM strategy to enhance the overall agility and the performance of supply chain management and its impact on logistics management as backbone to meet consumer requirement on time. The summarization can be outlined as follows:

- Modern logistics and supply chain management is heavily reliant on information technology due to generate real time information among the supply chain partners due to rapid deconstruction of supply chain management and also changing consumer demand who seek promptness in delivery and large number product line to make choose. Clothing sector is illustrated as an example, where the e-SCM becomes evident to serve the most volatile market both in online and offline medium of shopping
- Logistics, in this era is more about information flow rather than product flow. It is must that e-logistics system has to involve the distribution of the product to the consumer through different supply chain echelons but the control of data and information is the key to successful logistics flow throughout the supply chain.
- To efficiently manage the logistics, e-procurement system in the e-SCM platform offers MRO (e-maintenance repair operate), enterprise resource planning (ERP), e-tendering, e-sourcing, e-auction and e-informing. In the clothing sector e-procurement plays a vital role specifically among B2B partners through the management of e-catalogue where business partners can make primary choice before going for bidding.
- Information technology in the wearing of E-SCM has integrated all the parts of supply chain process where information integrated logistic system is the connector of different supply chain echelons.
- E-fulfilment process initiated while consumer order for the product using internet resources. The fulfilment cycle involves the entire management of supply chain to fulfil the consumer order where logistics and delivery of logistics on time to the consumer is the vital most concern for success. E-SCM strategy, in this regard, is used to enhance the information flow among the different suppliers for right amount of production, delivery at the distribution centre, right amount of shipment at different retail store. ERP, SCMP, WMS, barcode reader, revolutionary RFID etc. are the means to facilitate the process of E-SCM to ensure right amount of logistics at right place to meet the exact consumer need without leaving any extra inventory due to high cost to hold the spare the inventory.
- E-distribution is a thorough part of e-fulfilment process mainly focuses on the downstream part of supply chain. The process concerns about the customer service by taking their order and timely meeting it by passing the information in the upstream for managing the logistics on time.
- E-Transportation is a vital process both in upstream and downstream of supply chain. Vehicle fleets equipped with different automated system including GIS system to rightly transfer the real time information about delivery and receiving stock. The detailed analysis of the e-transport management remains the vital component of e-SCM.

There are number of gaps in clothing industry specially concerns the inventory management and rightly transfers the logistics at different retail location and e-fulfillment centers. In this clothing buyers are highly diversified and

volatile which implies that product life cycle is short here. Therefore, Adopting e-SCM strategy is vital here to match with the changing pace of demand through passing the demand and style information to the manufacture for right amount of production and e-logistics is vital to transfer the manufactured item at the right spot and the right time through the interaction of proper information.

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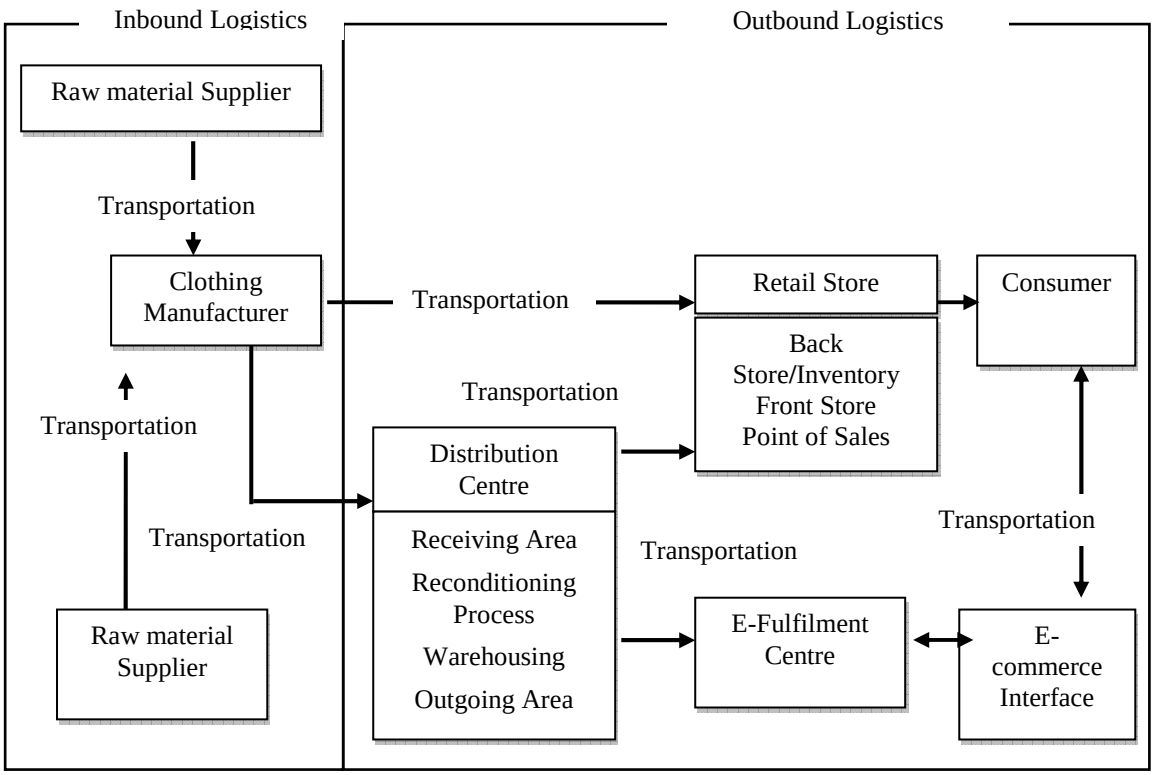

Figure-1: Forward supply chain management of Clothing Industry

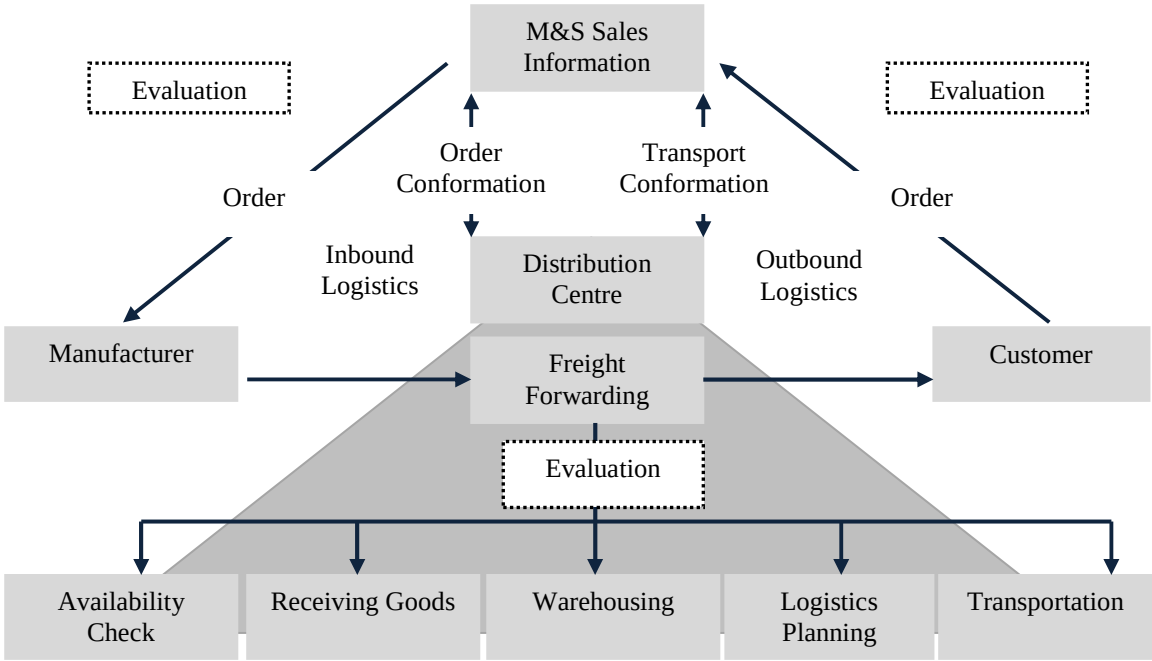

Figure-2: The Structure of M&S e-logistics System; Source: RFID Journal, Inc. (http://www.rfidjournal.com)