

# **Apparel supply chain optimization by developing e-commerce: An impact analysis**

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## **Abstract**

Supply-chain optimization is the application of processes and tools to ensure the optimal operation of a manufacturing organization. The SCM is the spine of E-commerce, a very critical component of E-commerce. Supply chain efficiency means having the right product at the right place at the right time, can save money or reduce costs, and can enhance cash utilization. E-commerce plays a vital role on inventory management to keep the record electronically to avoid any information breach. In this paper, we have developed a database management system which would be centrally visualized by the partners of the apparel supply chain. Buyer can be able to place orders through this developed database system electronically which might save at least ordering cost, visit cost and 15 %-time savings of the total lead time. Furthermore, we have developed a system by which customer can buy surplus goods which remain after shipment has done with the cheapest cost and factory will not face any wastage of goods.

## **Keywords**

Supply chain, E-commerce, cost reduction, better communication, apparel organization, information visibility.

## **1. Introduction**

E-commerce does not just mean trading and shopping on the Internet. It has more important meaning i.e business efficiency at all operation levels. The apparel manufacturing organizations are struggling to survive in the competitive market since labor cost is increasing day by day. Bangladesh government has been imposed a rule over the entire garments manufacturing industry that wages must be increase every five years of recess. Government has been declared to increase 51 % wages of the garments workers whereas the cost of manufacturing increasing due to such kind of incremental matter. Government does not provide any special facility to the industrialist to cut their overhead cost through there are some of options to be considered in the power supply. Apart from that movement can be decreased the taxes which incurred on the investor. In addition, manufacturer not only getting such cost decreasing facilities from the government but also not enjoying the proper supply of electricity and gas supply from national grid. That is why, owners have to invest more on alternative power supply which is highly costly. As a result, garments manufacturing industry is the question of surviving. In this situation, they are focusing on reduction of cost in different from of view. Improving and making smooth supply chain is one of that vast area. Manufacturers have to pay more cost for airing shipment due to poor supply chain management. The reason behind that is the lack of proper information visibility. In order to make the visible of the information evolving e-commerce into supply chain is the important matter.

## **2. Literature Review**

Apparel supply chain is very challenging in regards to Bangladesh perspective due to political and bureaucracy problems. The companies are paying more money because of

The purpose of supply chain management is to coordinating, scheduling and controlling procurement, production, inventories and deliveries of products and services to customers. The SCM is the backbone of Ecommerce, a very critical component of E-commerce. Supply chain efficiency deals about having the right product, at the right place, at the right time, can save money or reduce costs, and can enhance cash utilization.

Ganeshan and Harrison [1] has demarcated SCM as a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to end customers. Lee & Corey [2] stated that SCM consists of the integration activities taking place among a network of facilities that procure raw material, transform them into intermediate goods and then final products, & deliver products to customers through a distribution system.

Christopher [3] defined the supply chain as the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer. SCM is the "strategic and systematic coordination of the traditional business functions and the tactics across these business functions within a particular firm and across businesses within a supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole"[4]. While the separation of supply chain activities among different companies enables specialization and economies of scale, there are many important issues and problems that need to be resolved for successful supply chain operation this is the main purpose of SCM. [5] Best value supply chains use strategic supply chain management in an effort to excel in terms of speed, quality, cost, and flexibility. Despite the value of this concept to modern firms, little is known about how prominent theories can help shed light on what distinguishes these chains from others and makes them exceptionally successful. [5] Supply chain is a network of facilities and distribution options for the entire network of companies to work together to design, produce, deliver, and service products. Since its inception about 10 years ago, the field of supply chain management has become tremendously important to companies in an increasingly competitive global marketplace. Companies focused primarily on manufacturing cost before 1970's, quality improvements in 1970's, product delivery time in 1980's, customer services in earlier 1990's, and environmental compatibility in late 1990's within their bounded walls; now their efforts extend beyond those walls to encompass the entire supply chain efficiently and intelligently in a knowledge-based economy of this Millennium [6,7,8]. Now a days, business world is moving ever faster than the past. Adaptation to change is very important for any e-business software. Agility will become a necessity for any e- business infrastructure software. Zhang Shensheng stated that our e-business solution software is a technology leader having a full set of agile implementations including HuiQing Agile Supply Management System [9].

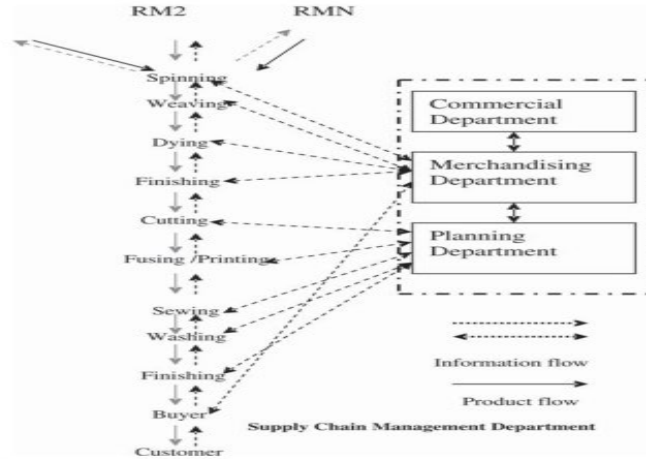


Figure 1: Apparel supply chain

### 3. Proposed method of the On-line orders placing and receiving

Figure 7 depicts e-commerce website where user can get entry into by signing in log in option to visualize and select the product. when customer select the product then he adds the product into cart shown by figure 8 and at the same time customer add his billing address. while customer finalize the purchasing then system will verify it and make an Invoice for orders which sent to manufacturer shown by figure 9.



Figure 2 : Central Database system

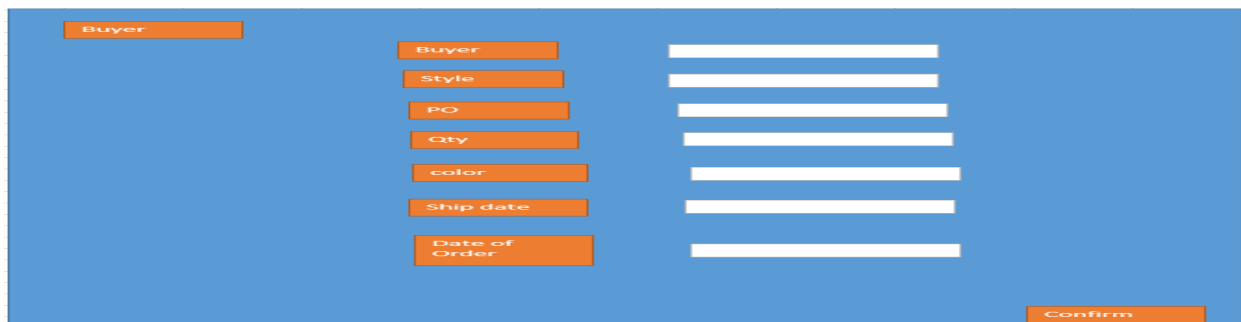


Figure 3 : Database system for buyer

Figure 4: Database system for supplier

Figure 5: Database system for manufacturer

Central Database System(CDS)

		Buyer					Supplier							Manufacturer							
Code	Item	Style	F3	Color	Quantity	Qty. E.O.	Code	Quantity	Fabric	Tafetta	Thread	Button	Color	Qty. req.	Fabric	Tafetta	Thread	Button	Color	Qty. req.	
19-10-13																					
20-10-13																					
21-10-13																					
22-10-13																					
23-10-13																					
24-10-13																					
25-10-13																					

Figure 6: CDS

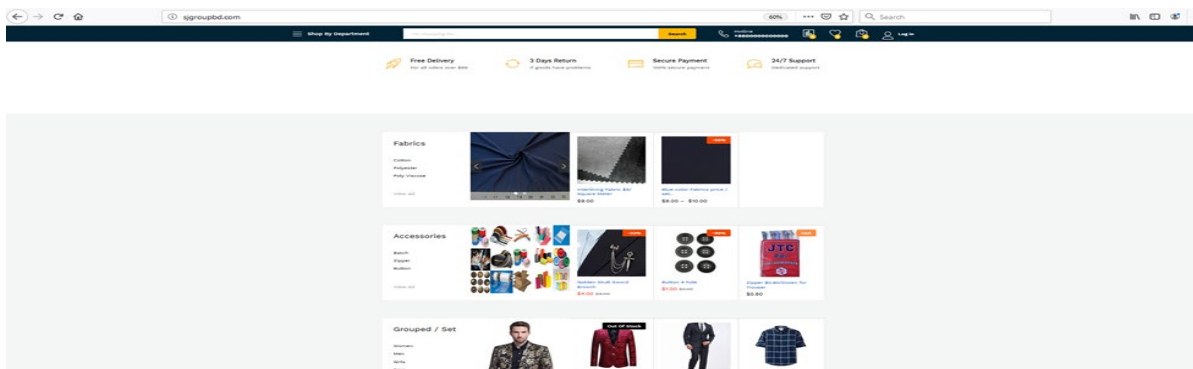


Figure 7: E-commerce website

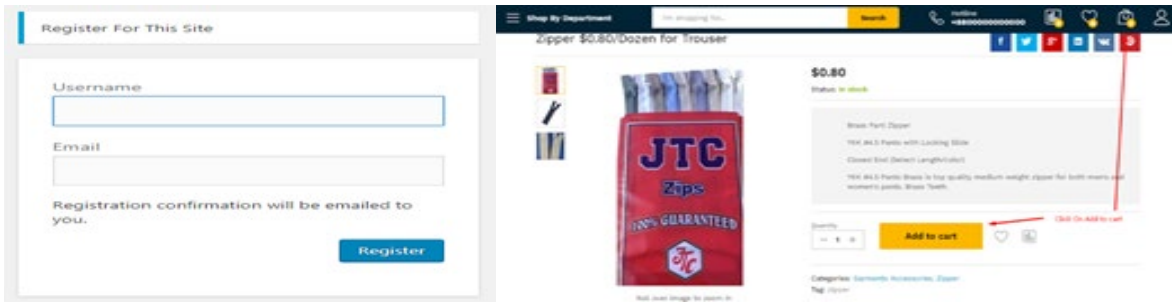


Figure 8: User login and product selection

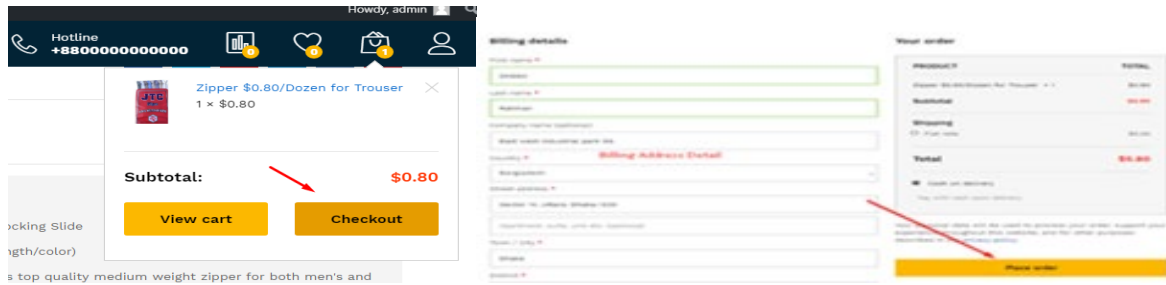


Figure 9: Adding into cart and Billing address

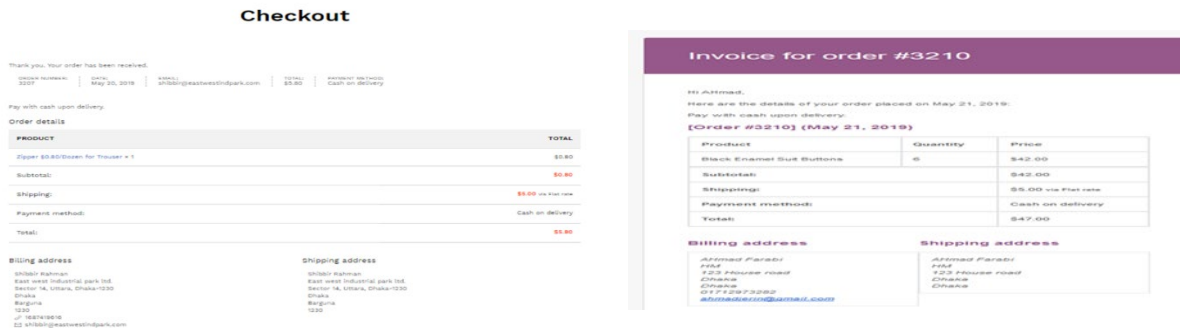


Figure 10: Check and Invoice for orders

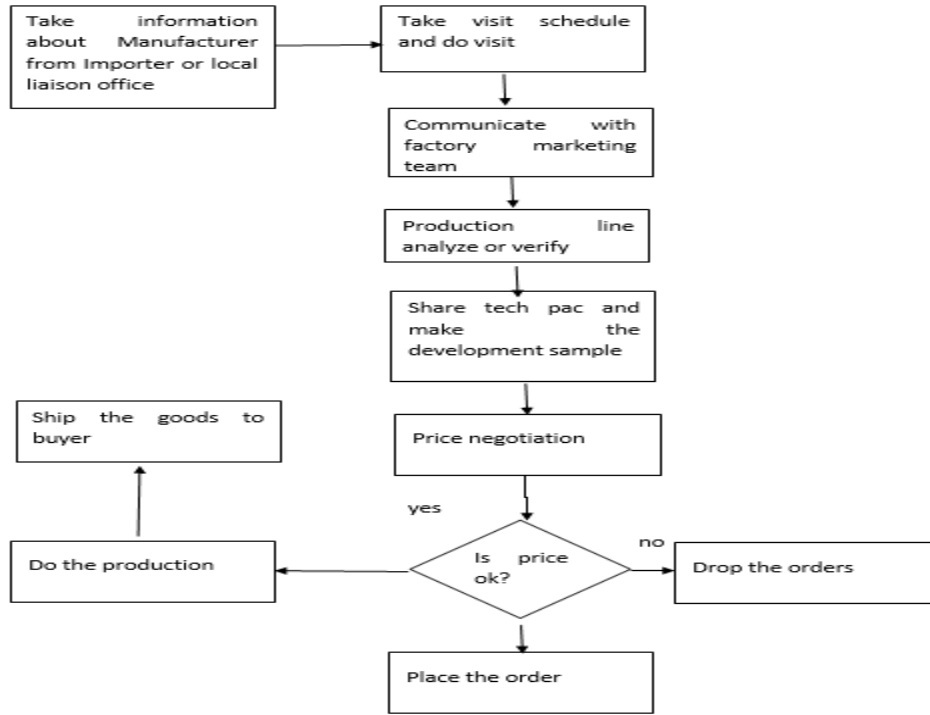


Figure 11 : Current Flow diagram of order placing method

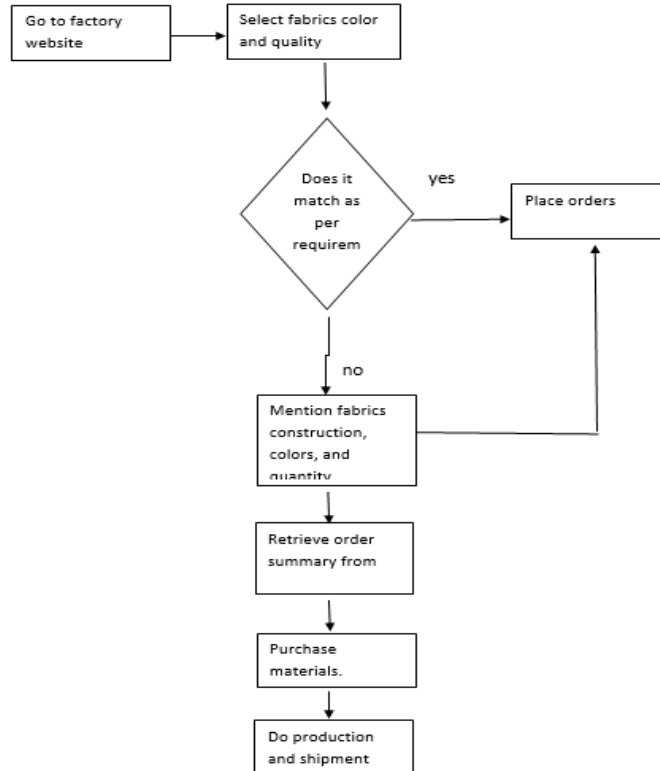


Figure 12: Proposed Flow diagram of order placing method

#### **4. Results and Discussions**

When a buyer goes through-commerce based website, they will click on initialization of product selection and later on, buyer click on the product data and he will be able to view features of the available product which depicted by the figure 8. Once customer make the decision that he will buy specific product and then he can view the picture with product price and furthermore, buyer can be able to look into the product category which showed by the figure 9 in details. Likewise, buyer will decide which product they want to buy from manufacturer. Finally, he will see the product finalization summary which described in figure 10. Once click on the purchase button and provide the delivery and billing address, customer will receive an invoice for his or her order confirmation that is shown by figure 10. Figure 11 and 12 depicted the current order placing system and proposed order placing system. The proposed system can be able to confirm the orders faster than the traditional method.

#### **5. Conclusions and re-recommendations**

It has been shown from figure 2 that apparel chain member will be placing their orders through this central database system which would be developed through WordPress database software. Figure 3 depicted that when buyer or customer place an order to the manufacturer, usually places it through email confirmation. However, in this proposed system orders will be placed in online through using this model and details regarding all of the orders will be stored in the CDS database. All of the chain members will be accessible to this CDS database system. It will be linked with the developed database systems. Similarly, manufacturer and supplier will put any information through database this development system. By developing on line order placing system through developing a website will be further recommendation for apparel manufacturing organization and supply chain will be smoothed.

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## **Biography**

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