

# Implementation of porters value chain and lean systems



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Porter's Value chain is a concept that categorises the generic value-adding activities of an organisation into two divisions. One is primary activities that consist of inbound logistics, operations, outbound logistics, marketing & sales and services and secondary activities such as procurement, infrastructure, technological development and human resource. These activities are performed to add value to the product and to obtain a competitive advantage in the industry. Porter (1985 p. 11) says that "value chain is the internal linkage between primary and supporting activities and external linkage with customers and suppliers."

Garment manufacturing is a process of converting the raw materials such as fabric trims into a finished readymade garments. In this fast growing competition and unpredictable economic situation, it is essential for a manufacture to continuously improve the quality, timely delivery and competitive price to sustain its market place. Mannan and Ferdousi (2007, p. 2) believes that nowadays "the key to competing in the international market place is to simultaneously improve both quality and productivity on continual basis". In today's competitive and concurrently changing business world, lean production has brought a lot of changes in the management practices to improve organisational effectiveness and customer satisfaction and ensures sustainability (Karim, 2008). Nowadays customers have more opportunities to choose so they expect more competitive price with better quality and less lead-time.

A study by Sohal (1996, p. 91) indicates that "most western manufactures have been aware of the need to improve their performance and competitiveness for nearly two decades and they were using lean production

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system to take advantage.” The main reason for adopting lean system is to reduce production resource requirement and cost, increasing customer responsiveness and to improve quality these all lead to gain a competitive advantage and long-term sustainability.

Papadopoulou and Ozbayrak (2005) states that lean philosophy spread to Japanese factories after it was successfully implemented in the Toyota motor company, then most of the developed and developing countries are reaping several benefits from the lean practice, but in Bangladesh the adoption of lean system is very slow. Nowadays many countries in the world have identified the essence of lean system and started implementing lean tools in their garment manufacturing process and observed incredible improvement (Mazany, 1995 and Bruce et. al, 2004). As Mamun and Afrin (2001) argues that “ the few firms that have adopted lean practice have experienced an overall improvement in the corporate performance”.

In this report we are going to implement lean system in a Bangladesh based garment export house to obtain competitive advantage in this highly influential global market and in a view to obtain long-term sustainability in concern with corporate social responsibility.

## **Exim Exports and its Value Chain**

Exim Exports is an ISO 9001: 2000 company that manufactures and exports knitted garments to overseas buyers. It is based on Dhaka, Bangladesh. The main process of Exim Exports is to purchase yarn and knit it into fabric through its suppliers and dye or print the fabrics and cut, sew and finish into readymade garments. It produces casual T-shirts for reputed brands such as

Calvin Klein, SF, Nike, TopShop and River Island etc. These buyers are very concern about quality and timely delivery. Using Porter's Value chain model an activity analysis is been conducted below.

## **Activity analysis**

Activity analysis identifies the step by step process that a company perform to satisfy its customers. It also involves how the company recruit people with the skills to give the best service, how the company motivates the employees and it steam to perform at optimum level, how the company keeps up to date with the latest technology, how the company choose and develop technologies that give cutting edge, how the company gets feedback from its customers and how it is going to improve further. Porter (1985. p12) has split the organisational activities into primary and support activities.

## **Fig . 1. Exim Exports Value chain**

### **Primary Activities in Exim Exports value chain**

#### **Inbound logistics**

Transportation for raw materials from supplier to factory i. e. Yarn purchasing. Store department handle these operations by purchasing the yarn from suppliers and transporting to knitters. Then the knitted fabric should be moved to knitting to dyeing or printing. These operations could be followed by several supervisors.

#### **Operations**

Knitting, Dyeing or Printing, Cutting, Stitching, Finishing and Packing are the major operations. Knitting and Dyeing will be done outside the factory  
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however the productions department, procurement and merchandising departments will be involved in this process.

## **Outbound logistics**

Transportation for goods to deliver to customer's agents, export documentation and accounts departments will be involved in this.

## **Marketing and sales**

Merchandising team performs the marketing activities. Merchandising team is the communication platform between buyer and the factory in to get orders, sample approvals, fabric approvals and production approvals. Costing and order confirmations will be done by merchandising department.

## **Service**

The goods are dually checked by the Exim Exports QA team and customer QA's to ensure the goods are as per customer's requirement. However, in case of any customer compliance after selling the goods Exim Exports always work with the buyer to rectify the problems and will make sure to improve the discrepancies in future.

## **Supporting activities in Exim Exports value chain**

### **Infrastructure**

Functional teams, organisational culture and resource are the main infrastructure that supports the core activities. Financial resource and other in-tangible assets of the company that add value to the product are into infrastructure.

## **Human resource management**

Human resource handles all the general activities such as recruiting, hiring, training, compensating and dismissal of employees. Human resource department takes responsibility to maintain the whole production plant, machineries and adequate supply for required resource to the company. It also motivates the employees through incentives and other motivational aspects.

## **Technological development**

The Company enjoys latest machineries and equipments that enable its production process. It invests more in the technological development according to latest advancement to obtain competitive edge.

## **Procurement**

Purchasing of raw materials such as Yarn and Trims is handled by an experienced team that could bargain with suppliers and profit the company. The team has good technical skills to save money through technical aspects. It ensures the quality of material is as per requirement.

## **Fig . 2. Value chain analysis**

### **1. Use of lean production in Exim Exports**

Exim Exports need changes in three major areas to improve its quality of product, timely delivery and to reduce wastages. First of all, at the area of Procurement Exim Exports enjoys an experienced team which is technically strong and has a good bargaining power with their suppliers and it can assure the quality of material that it purchase will be up to mark. However in this competitive economy it is necessary for the company to improve its

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communication with the production team to enable “ Pull Production” to reduce wastage of time, money and resource. Poor communication between Fabric store and Production department leads to purchasing of fabric before requirement that to be stored as inventories or delay in fabric purchasing according to productions requirement that leads to waiting time delay in production cutting and stitching.

According to the above needed changes to add value to the activities. It is necessary to implement lean system into this organisation to gain competitive advantage and sustainability. Mercado (2007) said that “ Under this highly competitive environment, garment industry has numerous opportunities for improvement through lean principles.” To obtain a competitive advantage in this economy it is necessary to improve the quality, timely delivery and cost effective production. This could be achieved by using lean production tools.

Empirical evidence shows that after implementing lean production in their organisation the companies identified variety of changes that took place within their organisation such as cultural change, education of workers and suppliers, empowerment of employees, relationship with suppliers, rearranging the manufacturing process and commitment to top level managers said Ferdousi and Ahmed (2009. p 110).

## **2. 1 Value analysis and changes needed in Exim Exports value chain**

There are some main activities that should be concentrated to improve the performance of Exim Exports. They are, Procurement: Purchasing of yarn and

trims, Procurement / Operations: Staking of fabrics and trims and movement of material between every process, Operations: Cutting, Finishing and Packing.

## **Procurement**

The communication between the procurement team, production department and suppliers are not up to mark that leads to delay in materials or early purchasing of materials that should be stored as inventories. Inventory occupies the space and high inventory leads to wastage of money according to “ Time Value Money” concept. So this is to be eliminated to improve the performance of Exim Export.

## **Procurement / Operations**

Staking of fabric and trims are no up to mark. It leads to delay in organising materials while production starts. Poor staking also occupies more space and causes shortage of space for future materials. Movement of materials should be improved by reducing non-value adding movements and enhancing better material handling. Non-value adding motions are considered as waste which is to be eliminated.

## **Operations**

Exim Exports enjoys skilled tailors and experienced supervisors and line managers. It dose have a good production planning team and effective execution. However the workers aren’t trained for multi tasking that leads to under utilization of employees which is again considered as waste. The supply chain between Cutting, Stitching, Finishing and Packing should be improved to avoid inventories and delays that lead to wastage of time and



manpower. Employees should be motivated to improve the efficiency. Better quality management approach is needed.

## **2. 2 Recommendations to eliminate waste in the value chain of Exim Exports**

According to the above identifications and lecturer overview about the empirical evidence of benefits of lean system in garment manufacturing industry, it is recommended to introduce lean production system in this organisation. In the area of procurement it is essential to implement JIT system to eliminate wastage of time and inventories. 5S model can be implemented in staking materials and movement of materials in between departments. This could lead to reduction of non-value adding movements and increases the efficiency in pulling back materials from stored area.

It is also recommended to implement Kanban in the production process (from cutting to packing) that could eliminate under utilization of employees and reduce wastage and delays. Exim Exports could develop Kaizen throughout the process for continuous improvement in all areas i. e. improvement in quality, improvement in efficiency and work flow, improvement in reducing wastage etc

### **Introducing JIT in Procurement to enhance communication between Procurement team, Production and Suppliers**

Procurement team should not purchase the materials according to their own plan or feasibility. It is recommended to communicate with the production department i. e. cutting and plan to purchase materials according to their requirement. Early purchase lead to raising inventory level and late purchase

lead to increase in waiting time. Cutting department will send signals to the procurement about the requirement of raw materials for the future production. So that stores could communicate with the suppliers and purchase the materials according to the current requirement. JIT enables good relationship with the suppliers that create flexibility.

### **Introducing 5S Model in staking areas of Exim Exports to enhance efficiency in the work place**

5S stands for Sort, Set in order, Shine, Standardize and Sustain. It is the principle of improving safety, efficiency and employee morale by deciding what should be kept, where should be kept and how it should be kept that enables easy flow of materials and reduces bottle necks (Ferdousi and Ahmed, 2009). 5S should be implemented in the stores, cutting, stitching, finishing and packing areas wherever the materials are to be staked. 5S enables smooth flow of materials and it keeps the place neat and tidy. Standardized staking method enables employees to identify the right product on time and it eliminates the delay in searching.

### **Introducing Kanban system of supply chain in Cutting, Stitching, Finishing and Packing departments**

Kanban system will enable an effective material supply between and within production units. Kanban enables multi tasking, so that a single operator can handle multiple operations. Human resource department will support in training and development of employees to ensure the workers are skilled enough to do multi tasking. Lakshmi (2009) says that “ Kanban uses a specific work space between operations to balance supply chain with demand. The space holds limited number of completed components in queue

for next operation. If the space is full then there is no need to produce more, so that the operator can assist with other operations that may be slow." This resembles the pull production method with some buffers for next operation. It reduces over production wastage and increases employee motivation.

### **Introducing Kaizen as a continuous improvement tool in Exim Exports value chain**

Kaizen is a continuous improvement tool. That can be used in all primary and supporting activities to maintain the standard and increase competitiveness & sustainability. This can be achieved by monitoring the progress of the current system and identifying the gap to improve the system. Kaizen deals with customer complaints and feedbacks that could enable continuous improvement in process.

### **3. Impact of above recommendations on the organisations resources and how above recommendations will ensure increased competitiveness, Long term sustainability and corporate social responsibility**

The above recommendations enable the company to eliminate wastages such as inventories, under utilization of employees, avoids wastage due to mistakes and uncertainties, delay in production, quality issues etc. These improvements have a direct impact on the company's resources. Inventories comprise of investment, storage cost and obsolescence. Carrying excess inventories may signal a lack of coordination and collaboration among supply chain partners as well as a lack of flexibility and agility to adjust to sudden demand shifts. This can result in increasing uncertainty about future

earnings and their growth prospects, thereby negatively affecting the reputation of the firm and its market value (Singhal, 2005).

Inman and Mehra (1993) identified that “ JIT adoption is correlated with the future financial success of the firm. Thus, if JIT adoption is viewed as beneficial capital expenditure, it will result in increased market prices.”

Kanban increases the flexibility of utilizing operators, reduce wastage due to over production, and reduce absenteeism and increases empowerment of employees thus leads to maximum utilization of company’s resources. 5S model reduces the mistakes occur in production process such as wrong fabric cutting, reduces repetitive motion ailments that impacts the resource of the company (Lakshmi, 2009). Kaizen a continuous improvement tool increases the efficiency and reduces wastage that has a direct impact on company’s resource.

A case study by EPA (2003) indicates that the lean system enables reduction in resource requirement and cost of capital, increases customer responsiveness and improving product quality that boots the overall company profits and competitiveness. According to Yeung and Chan (1999, p. 756) Manufactures are nowadays facing intensive global competition, they are becoming increasingly aware of the importance of modern management philosophy in providing with a competitive advantage in a free market system. Lean production and lean tools are the solution for achieving competitive advantage in this market place.

The above recommended tools will enable the reduction in resource requirements and cost of capital by improving the utilization of employees,

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reduction of wastages, reduction of delays and avoiding mistakes that leads to loss of resource. It also ensures customer satisfaction by timely delivery and improved quality. Kaizen ensures the company is achieving competitive advantage against its competitors. Thus improved quality, reduced process cycle time, cut production cost and likely to improve delivery performance lead to customer satisfaction and sustainability.

Lean systems have long realized the return from an engaged, well-trained, innovative workforce. By coordinating diverse production stages and management systems into a successful, enthusiastic, corporate culture, the vision and discipline of Lean-embracing executives transfer perfectly in Green transition. Lean provides a two-way channel, from the top down and then back up again, that fast tracks transition and reflects the foundational flow underlying Lean systems. Reduction of wastages enables a company to utilize the natural resources in the right way and making quality products increases the durability of the product which is one of the most important social responsibilities of the company. Corporations should take responsibility in reducing wastages of resources and should manufacture durable products that lead to less manufacturing and less pollution where lean system enables the same.

#### **4. 1. Value stream mapping the framework to identify the types of wastages in both primary and support process**

Value stream mapping is a framework that could be used by the line-managers to identify the types of wastages in a value chain. The goal of value stream mapping is to identify, demonstrate and decrease the waste (Shingo, n. d). Value chain mapping identifies the non value adding activities <https://assignbuster.com/implementation-of-porters-value-chain-and-lean-systems/>

in a process and eliminates wastage due to non-value adding activities. It focuses on visual maps the flow of materials and information from the time products come in the back door as a raw material through all manufacturing raw materials.

In this frame work, the line-manager could be able to track the process flow and value addition to the product in every activity. Whenever a non value adding activity is identified then it is called as waste.

### **Fig. 4. 1. Value stream mapping to identify the type of wastage**

Value-adding steps are drawn across the centre of the map and the non-value-adding steps be represented in vertical lines at right angles to the value stream. Thus the activities become easily separated into the value stream which is the focus of one type of attention and the ' waste' steps another type.

### **4. 2. Identify the danger signals for each waste**

Upon the value stream mapping there are targets for a particular waste. If the actual figure exceeds the target a danger signal will be created. The danger signals of each waste can be identified by comparing the actual results with the targets. Using time study lead time of each and every process will be calculated and stored as a database. When the production starts the line manager could track the operations using the value stream mapping. Whenever the actual production status goes beyond the target a danger signal will be created. So that the manager could concentrate upon the particular operation where there is a need for improvement. There are

lean tools such as Jidoka can be used to identify the danger signal. Whenever the quality turns out of control or wastage exceed the allowance a danger signal will be created that makes aware of the line manager.

#### **4. 3. Framework that assists to respond to the danger signals**

Response to danger signals should be systematically handled. Once the manager noticed a danger signal, the manager should closely analysis and identifies the cause of wastage. Manager should ask themselves a few questions as a check list to ensure they are taking right decisions. First of all the manager should identify where the problem is? How the problem is been created? What is the impact of the problem in the value chain? Does it make economical sense to take a decision upon it? If the managers get answers for these questions then they could proceed with taking decisions.

Then using Kaizen as a framework manager should take an appropriate solution to solve the current issue and ensures the system in running as per scheduled. Continuous improvement strategy should be taken in consideration before taking any decision. While taking decision the manager should consider about the current strategy that the company is pursuing.

### **Conclusion**

While comparing and contradicting the Exim Exports value chain analysis and lecture review upon the current market situation and benefits of lean production in enhancing performance in the current market place it is recommended to implement Lean system in Exim Exports Value chain. JIT in Procurement enables a communication platform between stores, production and suppliers that lead to smooth flow of materials, without ant bottlenecks.

Kanban in cutting, stitching, finishing and packing where an effective supply chain that enables pull production and reduces inventory. It is also recommended to implement 5S in the area of staking materials and kept ready to issue. So Based on the above analysis and discussion it is recommended that implementation of Lean system in Exim Exports Value chain will give overall profit to the organisation.