

# The global leader in garment production management essay

[Business](#), [Management](#)



The Apparel Export Promotion Council reports that the exports have reached \$12, 145 million in the recent months and the growth is good for the industry and is revealing a profit margin which is more than the profit earned previous year. The growth of export is 1. 5% more than the export of the previous year. In terms of money, the growth of export is 9. 8% more than the corresponding month of the last year export. Textile and garment exports by India reached \$31 billion to \$32 billion in 2011-12. The country shipped out textile products and garments worth \$26. 8 billion in the 2010-11. Apparel exports account for nearly half of the total shipments by the textile and garments industry. The government expected the exports to rise in 2011-12 as demand seemed to have returned after the global financial unrest in 2008 and the debt crisis in Europe erupted, jeopardizing shipment prospects. [Indianmirror, 2012] India as the world's second largest producer of textile and garments as well as India's garments exports totaled US\$ 10. 70 billion during 2009-10, giving necessary market share of 3. 2%. The industry proudly supports 7 million people as a part of its workforce and aims to double this figure by 2011-12; even today it is the second largest provider of employment in the country. The apparel sector also contributes to 7% of India's total exports recording decline of 0. 35% in 2009-10 against 2008-09 due to global down turn. Indian Textile and Apparel Industry's Size Indians textile and apparel (TandA) industry (domestic and exports) is expected to grow from Rs. 3. 27 lacs crore (\$70 billion) to Rs. 10. 32 lacs crore (\$220 billion) by 2020, according to are search report by Technopak Advisors. The report says that the domestic market size in 2009 was Rs. 2. 18 lacs crore (\$4 billion) and is expected to grow at a compounded annual growth rate

(CAGR) of 11 percent to Rs. 6. 56 lacs crore (\$140 billion) by 2020. At present, the menswear has a majority share in the apparel market (43 percent) and is growing at 9 percent, women's wear is growing at a higher rate of 12 percent and is expected to reach 43 per cent share in 2020 from the current 37 per cent of the market. A part from this, kids wear is growing rapidly with higher growth in girls wear (11 percent) than boys wear (10 per cent). According to the report, the home textile market is expected to grow 9 percent CAGR from Rs. 15, 570 crores in 2009 to Rs. 40, 000 crores by 2020. [Raha, S. 2012]

## **2. 1. 1 Target of Indian textiles and apparel industries by 2021**

India's total textile and apparel industry size both domestic and exports are projected to grow at a CAGR (Compound Annual Growth Rate) of 9. 5 per cent to reach \$223 billion by 2021 from the \$89 billion in 2011." India's total textile and apparel industry size is estimated at \$89 billion in 2011 and is projected to grow at a CAGR of 9. 5 per cent to reach \$223 billion by 2021. [The economic times, 2012]The main obstacle in the way of growing the Indian garment exports is shorter lead-times. Several of our competing countries have substantially shorter transit times to Europe and USA, which are our main markets. The country's exports have been severely hit due to these listings given that US is the largest importer of garments from India and forms 4. 4% of USA's total garment imports from the world. According to the latest data, growth in apparel exports by a mere 1. 5% t in February 2012. However, during April-February 2011-12, garment exports grew by about 19% owing to weaker rupee. The US and Europe are together account

for about 65% of India's total garment exports. Non availability of direct sailing vessels and excessive government holidays (currently about 160 days a year including Saturday and Sunday's) also lead to a lot higher transit times from Indian ports. [Sen, A. 2012] In the changing scenario of the Indian garment manufacturing industry, there is a necessity of continuous redesigning and re-engineering of business process just to survive in the business. The main requirement of this is effective planning and control. The more the company is able to control and manage its operations the more easily it can execute the orders on time. Planning helps to estimate the capacity and organize resources of the company. This is in fact a research and preparation the company needs to do before accepting an order. Planning enables the company - Estimation on one's capacity Accepting an order according to one's capacity Estimation of time required for that order Doing backward and forward scheduling so it doesn't become heavy in the end.

## **2. 2 Lead time**

Lead time is a most important factor for garment manufacturing unit. Lead time is the period between a customer's order and delivery of the final goods. A small order of a pre-existing item may only have a few hours lead time but a larger order of custom-made parts may have a lead time of weeks, months or even longer. It all depends on a number of factors. From the time it takes to create the machinery to the speed of the delivery system. It may change according to seasons or holidays or overall demand for the product. Always manufacturers are looking for ways to improve the

lead time on their products. Lead time can mean the difference between making the sale and watching a competitor sign the contract. Because of this management and labor teams routinely hold meetings to discuss lead time improvements.[Wisegeek, 2013]

## **2. 2. 1 Definition of Lead Time**

The lead time is the amount of time between the placing of an order and the renewed availability, after the receipt, of the goods ordered. Lead time is a key factor when trying to perform inventory optimization.[Vermorel, J.

2011]The amount of time that elapses between when a process starts and when it is completed. Lead time is examined closely in manufacturing,

supply chain management and project management, as companies want to

reduce the amount of time it takes to deliver products to the market. In

business, lead time minimization is normally preferred.[Investopedia,

2013]The time interval between the initiation and the completion of a

production process is lead-time or in other words the time between order

placement and merchandise delivery is lead-time. [Production lead time

analysis, 2013]Lead-time varies with point of origin, shipping methods,

whether materials are open stock or custom designed, and whether products

are performance tested before production begins. [Granite bay, 2013]" Lead

time is defined as the amount of time the lapses from the point that an order

is placed until it arrives. In the production planning context, interpret the

lead time is the time required to produce the item." However, in its broadest

meaning, lead time includes the time to procure any materials from suppliers

needed in order to produce the finished item. [Wonkoga, 2005]Lead-time

varies with point of origin, shipping methods, whether materials are open stock or custom designed, and whether products are performance tested before production begins. Lead-time depends on the fabric used, whether imported or domestically produced, styling of the garment whether basic or high fashion and the production process and planning followed by the organization. Planning is an area where lead-time can be reduced. [Elsmer, 2013]As David G. Dannenbring stated, in many manufacturing problems, the total lead time taken to manufacture a product is an important consideration. Long lead times incur costs due to higher work-in-process inventory, increased uncertainty about requirements, larger safety stocks and poorer performance to due dates. Reduction of lead time involves management of 5Ms that is Men, Machine, Money, Material and Minutes. [Karmarkar, U, S. 2013]

## **2. 2. 2 Production Lead Time**

The time interval between the placement of a contract and receipt into the supply system of material purchased. Two entries are provided: (a) initial- The time interval if the item is not under production as of the date of contract placement and (b) reorder-The time interval if the item is under production as of the date of contract placement. [The free dictionary, 2013]Including order preparation time, rank time, setup time, run time, move time, inspection time, and put-away time to manufacture an item required total time. It is the time taken from release of an order to production and shipment for make to order. It is the time taken from the release of an order to production and receipt into finished goods inventory

for make to stock products. [Business dictionary, 2013]The garments, which are ordered today, will be in market in another four or five month. The later it comes in to the market the lower it is in demand. So as to be in the market the retailers are coming up with frequent style variations, shorter order quantities and shorter lead-time. It, therefore, becomes challenging for the exporter to stick to the delivery dates. Often the practice of late deliveries result would result in: Request for extension of delivery dates. Airlifting of goods at exporters expenses. Discount from buyers. Loss of credibility and reputation. Excessive work pressure at last minute.

**Key factors that might be the cause for the difference between planned and actual production lead time are listed below: -**

**External factors: -**

Suppliers delivery schedule  
Delay in fabric in-house  
Approval from buyer  
Transportation  
Holidays

**Internal factors: -**

Planning  
Departmental communication  
The aim of the project is to identify the key factors behind the delay in the production lead time and possible solution or steps to be taken to restrain that problem in future.

## **2. 3 Production planning and control**

Production planning and control is very necessary for garment manufacturing unit and it is essential to integrate the production planning and control system for effective and economical operation in a manufacturing unit of an organization. Production planning and latter

production control follow adjustment of product design and finalization of a production process. Production planning and control located an initial problem of low productivity, inventory management and resource utilization. For scheduling, dispatch, inspection, quality management, inventory management, supply management and equipment management production planning is required. Production control ensures that production team can achieve required production target, optimum utilization of resources, quality management and cost savings. [Management study guide, 2013] Production Planning and Control Production Control Dispatching Following

up Inspection Corrective Production

Planning Planning Routing Scheduling Loading Chart 1: Production planning and

control The main functions of PPC are the coordination of all the activities, which exist during production or manufacturing. Materials: The function is concerned with ensuring that the Raw material, standard finished parts, finished parts of products must be available while starting the operation within the time. Methods: It is concerned with the analysis of all methods of manufacturing and selecting the best appropriate method according to the given set of circumstances and facilities. Machines and Equipments: It is important that methods of manufacturing should to be related to the available production facilities coupled with a detail study of materials replacement policy. The function is concerned with the detailed analysis of the production facilities, maintenance procedures and equipment policy. Routing: It refers to the flow of sequence of operation and processes to be followed in producing a particular finish product. It determines manufacturing operation and their sequence. Estimating: This function is



concerned with estimation of operations time. The operation time can be worked out once the overall method and sequence of operation is fixed and process sheet for each operation is available. Loading & Scheduling: It is important that machine should be loaded according to their capabilities performance the given and according to the capacity. It is concerned with preparation of machine loads and fixation of starting and completion dates for a particular operation. Dispatching: It means the assignment of work to different machines or work places which involve authorities to start of production activities in order of their priority as determined by scheduling. Expediting: It is also called Follow Up or Progress. Follow up which regulates the progress of materials and parts through the production process. It is closely interrelated with activities of dispatching. Inspection: It is an important control tool. Its assessment is important in the execution of current program and planning stage of undertaking when the limitations of the processor, method and manpower are known. It forms a basis for future investigations with respect to method, process etc. which is useful for evaluation phase. Evaluating: This is the integral part of control function. The evaluating function is concerned with providing a feedback mechanism on the long term basis so that the past experience can be evaluated with the aim of improving utilization of method and facilities.[Mbanetbook, 2010]

### **2. 3. 1 Production Planning**

Production planning means to fix the production goals and to estimate the resources which are required to achieve these goals. It makes a detailed plan for achieving the production goals economically, efficiently and in time. It

predicts every step in the manufacturing process. It predicts the problems, which may arise in the manufacturing process. It attempts to remove these problems. It also attempts to remove the causes of wastage. So, production planning decides the ways and means of production. It shows the approach. It is based on sales predicting. It is a pre-requisite of production control.

## **2. 3. 2 Definition of Production Planning**

According to Ray Wild, production planning is defined as follows:" Production Planning is concerned with the determination, acquisition and arrangement of all facilities necessary for future operations."

2. 3. 3 Objectives of

Production Planning: The need, main functions or objectives of production

planning are as follows: Effective utilization of resources. Steady flow of

production. Estimate the resources. Ensures optimum inventory. Co-

ordinates activities of departments. Minimize wastage of raw materials.

Improves the labor productivity. Helps to capture the market. Provides a

better work environment. Facilitates quality improvement. Results in

consumer satisfaction. Reduces the production costs. 1. Effective utilization

of resources: Production planning results in effective utilization of resources,

plant capacity and equipments. This results in low-cost and high returns for

the organization. 2. Steady flow of production: Production planning ensures a

regular and steady flow of production. Here, all the machines are put to

maximum use. This results in a regular production, which helps to give a

routine supply to customers. 3. Estimate the resources: Production planning

helps to estimate the resources like men, materials, etc. The estimate is

made based on sales forecast. So production is planned to meet sales

requirements. 4. Ensures optimum inventory: Production planning ensures optimum inventory. It prevents over-stocking and under-stocking. Necessary stocks are maintained. Stock of raw material is maintained at a proper level in order to meet the production demands. Stock of finished goods is also maintained to meet regular demands from customers. 5. Co-ordinates activities of departments: Production planning helps to co-ordinate the activities of different departments. For e. g. the marketing department co-ordinates with production department to sell the goods. This results in profit to the organization. 6. Minimize wastage of raw materials: Production planning minimizes wastage of raw materials. It ensures proper inventory of raw materials and materials handling. This helps to minimize wastages of raw material. It also ensures production of quality goods. This result in a minimum rejects. 7. Improves the labor productivity: Production planning improves the labor productivity. Here, there is maximum utilization of manpower. Training is provided to the workers. The profits are shared with the workers in form of increased wages and other incentives. Workers are motivated to perform their best. This results in improved labor efficiency. 8. Helps to capture the market: Production planning helps to give delivery of goods to customers in time. This is because of regular flow of quality production. So the company can face competition effectively, and it can capture the market. 9. Provides a better work environment: Production planning provides a better work environment to the workers. Workers get improved working conditions, proper working hours, leave and holidays, increased wages and other incentives. This is because the company is working very efficiently. 10. Facilitates quality improvement: Production

planning facilitates quality improvement because the production is checked regularly. Quality consciousness is developed among the employees through training, suggestion schemes, quality circles, etc. 11. Results in consumer satisfaction: Production planning helps to give a regular supply of goods and services to the consumers at fair prices. It results in consumer satisfaction. 12. Reduces the production costs: Production planning makes optimum utilization of resources, and it minimizes wastage. It also maintains optimum size of inventories. All this reduces the production costs. [Kalyan city, 2013]

### **2.3.4 Features of Production Planning**

Production Planning  
Marketing Planning  
Engineering & maintenance  
planning  
Quality Planning  
Distributions Planning  
Material & procurement  
planning  
Manpower Planning  
Financial & investment planning  
Chart 2: Features of Production Planning

### **2.3.5 Production planning as an integral part of the corporate planning process:**

The following diagram depicts the planning process for a corporation. What is seen here is the production planning part of the total corporate planning effort. Although the former seems to be derived from the marketing plan, the targets are set at a higher level- a total corporate planning level. Moreover, the plan has feedback links upwards, modifying the targets when necessary. In the entire dynamic corporate Endeavour, production operation is a dynamic and important strategic link.

## **2. 3. 6 Integrative nature of production plans**

Production Planning and Control (PPC) therefore, is an effort to optimize the process of conversion of raw materials into finished products required in the market. Since various activities are involved in the conversion of raw materials into finished goods, PPC is and has to be an integrated function if the corporation has to derive maximum benefit out of planning. The procurement of raw materials, the quality control and inspection of raw materials, the inventory levels of in-process and finished goods, the production cost, the labor available, the machinery and equipment that is available, the warehousing capacity available, etc. all have their influence on the planning of production operations which convert the procured raw materials into finished goods. All the functions have inter-links and the more such inter-links are considered in the planning process, the better will be the planning process. [Menon, K. S. 1995] For instance, sometimes production and maintenance are planned separately, leading to conflicts between the preventive maintenance needs and the production needs. Such conflicts can be avoided if the planning for maintenance is done in coordination with planning for production, allowing for sufficient number of days of shutdowns of different machineries while drawing up the production plan for the year. Following figure shows various functional departments which influence planning for operations:

### **Coordination with production schedule:**

It is not difficult to produce plans covering the delivery of fabric and commodities, cutting, sewing and dispatching to the buyer where all

constraints are satisfied. The reality is that these plans get disrupted. Schedule target may not be met because of fabric supply or production problems. Schedules may be updated and, to be successful, the revised target must satisfy the same constraints as did the original targets. In order to satisfy the constraints and modify existing plan, we have to keep regular records and maintain contact with all the departments. This record and contact help to identify the problem in advance, so that it shouldn't get too late for the company to modify. As there is lot of orders and the company has to maintain contact with different units, there are different software's which help to maintain daily progress of all the orders.

### **2. 3. 7 Production Control**

All organizations irrespective of size use production control to some degree. In small organizations, the production control may be performed by one person; but in large complex industries the production control department is normally well-organized and highly specialized. Production control presupposes the existence of production plans, and it involves the use of various control techniques to ensure production performance as per plans. Coordinating men and materials and machines is the task of production control. Production control may be defined as " the process of planning production in advance of operations; establishing the exact route of each individual item, part of assembly; setting and finishing dates for each important item, assembly and the finished products, and releasing the necessary orders as well as initiating the required follow-up to effectuate the smooth functioning of the enterprises." According to Henry Fayol, production

control is the art and science of ensuring that all which occurs is in accordance with the rules established and the instructions issued". Thus, production control regulates the orderly flow of materials in the manufacturing process from the raw material stage to the finished product. Production control aims at achieving production targets, optimum use of available resources, increased profits through productivity, better and more economic goods and services etc. An effective production control system requires reliable information, sound organization structure, a high degree of standardization and trained personnel for its successful operation. A sound production control system contributes to the efficient operation of plant. In terms of manufacturing customer's orders, production control assures a more positive and accurate completion and delivery date. Delivering an order on time is obviously important to the customer and to the development of customer goodwill. Production control also brings plan and order to chaotic and haphazard manufacturing procedures. This not only increases the plant efficiency but also makes it a more pleasant place in which to work. Most people recognize that employees prefer to work and do better work under conditions of obvious control and plan. Morale may be considerably improved.. Effective production control also maintains working inventories at a minimum, making possible a real saving in both labor and material investment. Thus, good production control helps a company operate and produce more efficiently and achieve lowest possible costs.

[Mbaknol, 2010]

### **2. 3. 8 Objectives of Production Control**

The success of an enterprise greatly depends on the performance of its production control department. The production control department generally has to perform the following functions: Provision of raw material, equipment, machines and labor. To organize production schedule in conformity with the demand forecasts. The resources are used in the best possible manner in such a way that the cost of production is minimized and delivery date is maintained. Determination of economic production runs with a view to reduce setup costs. Proper co-ordination of the operations of various sections/departments responsible for production. To ensure regular and timely supply of raw material at the desired place and of prescribed quality and quantity to avoid delays in production. To perform inspection of semi-finished and finished goods and use quality control techniques to ascertain that the produced items are of required specifications. It is also responsible for product design and development. Thus the fundamental objective of production control is to regulate and control the various operations of production process such a way that orderly flow of material is ensured at different stages of the production and the items are produced of right quality, in right quantity, at the right time with minimum efforts and cost. [Mbaknol, 2010]

### **2. 3. 9 Factors Determining Production Control Operations:**

The nature of production control operations varies from organization to organization. The following factors affect the nature and magnitude of production control methods in an organization. Nature of production: In job-



oriented manufacturing, products and operations are designed for some particular order which may or may not be repeated in future. Hence production usually requires more time, whereas in a continuous manufacturing system inventory problems are more complex but control operations are rather simple due to fixed process. In mixed stock and custom manufacturing systems the problem of control is further complicated due to simultaneous scheduling of combined process. Nature of operations/activities: In intermittent manufacturing system the operations are markedly varied in terms of their nature, sequence and duration. Due to this the control procedure requires continuous modifications and adjustments to suit the requirements of each order. Magnitude of operations: Centralized control secures the most effective co-ordination but as an organization grows in size, decentralization of some production control functions becomes necessary. The degree to which the performance of an activity should be decentralized depends upon the scope of operations and convenience of their locations.[Mbaknol, 2010]

### **2. 3. 10 Importance of Production Planning and Control**

The system of production planning and control serves as the nervous system of a plant. It is a coordinating agency which co-ordinate the activities of engineering, purchasing, production, selling and stock control departments. An efficient system of production planning and control helps in providing better and more economic goods to customers at lower investment. It is essential in all plants irrespective of their nature and size. The principal advantages of production planning and control are summarized below:

Better Service to Customers: Production planning and control, through proper scheduling and expediting of work, helps in providing better services to customers in terms of better quality of goods at reasonable prices as per promised delivery dates. Delivery in time and proper quality, both help in winning the confidence of customers, improving relations with customers and promoting profitable repeat orders. Fewer Rush Orders : In an organization, where there is effective system of production planning and control, production, operations move smoothly as per original planning and matching with the promised delivery dates. Consequently, there will be fewer rush orders in the plant and less overtime than, in the same industry, without adequate production planning and control. Better Control of Inventory: A sound system of production planning and control helps in maintaining inventory at proper levels and, thereby, minimizing investment in inventory. It requires lower inventory of work-in-progress and less finished stock to give efficient service to customers. It also helps in exercising better control over raw-material inventory, which contributes to more effective purchasing. More Effective Use of Equipment: An efficient system of production planning and control makes for the most effective use of equipment. It provides information to the management on regular basis pertaining to the present position of all orders in process, equipment and personnel requirements for next few weeks. The workers can be communicated well in advance if any retrenchment, lay-offs, transfer, etc. is likely to come about. Also, unnecessary purchases of equipment and materials can be avoided. Thus, it is possible to ensure proper utilization of equipment and other resources. Reduced Idle Time: Production planning and

control helps in reducing idle time i. e. loss of time by workers waiting for materials and other facilities; because ensures those materials and other facilities are available to the workers in time as per the production schedule. Consequently, less man-hours are lost, which has a positive impact on the cost of production. Improved Plant Morale: An effective system of production planning and control co-ordinates the activities of all the departments involved in the production activity. It ensures even flow of work and avoids rush orders. It maintains healthy working conditions in the plant thus, there is improve plant morale as a by-product. Good public image: A proper system of production planning and control is helpful in keeping systematized operations in an organization . Such an organization is in a position to meet its orders in time to the satisfaction of its customers. Customers satisfaction leads to increased sales, increased profits, industrial harmony and, ultimately, good public image of the enterprise. Lower capital requirements: Under a sound system of production planning and control, everything relating to production is planned well in advance of operations. Inputs are made available as per schedule which ensures even flow of production without any bottlenecks . Facilities are used more effectively and inventory levels are kept as per schedule neither more nor less. Thus, production planning and control helps, in minimizing capital investment in equipment and inventory.[Mbaknol, 2010]