

Productivity Improvement Techniques in Apparel Manufacturing Industry

Introduction

In this article, a study was conducted in the sewing section under a garment manufacturing company. We have mentioned many techniques where you can focus and start working on improving productivity. Most of the techniques mentioned in this article are mainly on



To get excellent result you may need external recommendation and support but without the external help you can surely get measurable improvement once you start implementing the above mentioned techniques.

Production

The processes used to transform material inputs (raw materials, semi finished goods, subassemblies) and immaterial inputs (plans, ideas, information, knowledge) into goods or services. Basically resources are used in this transformation process is to create a goods or services which has value and contributes to the utility of individuals or groups.

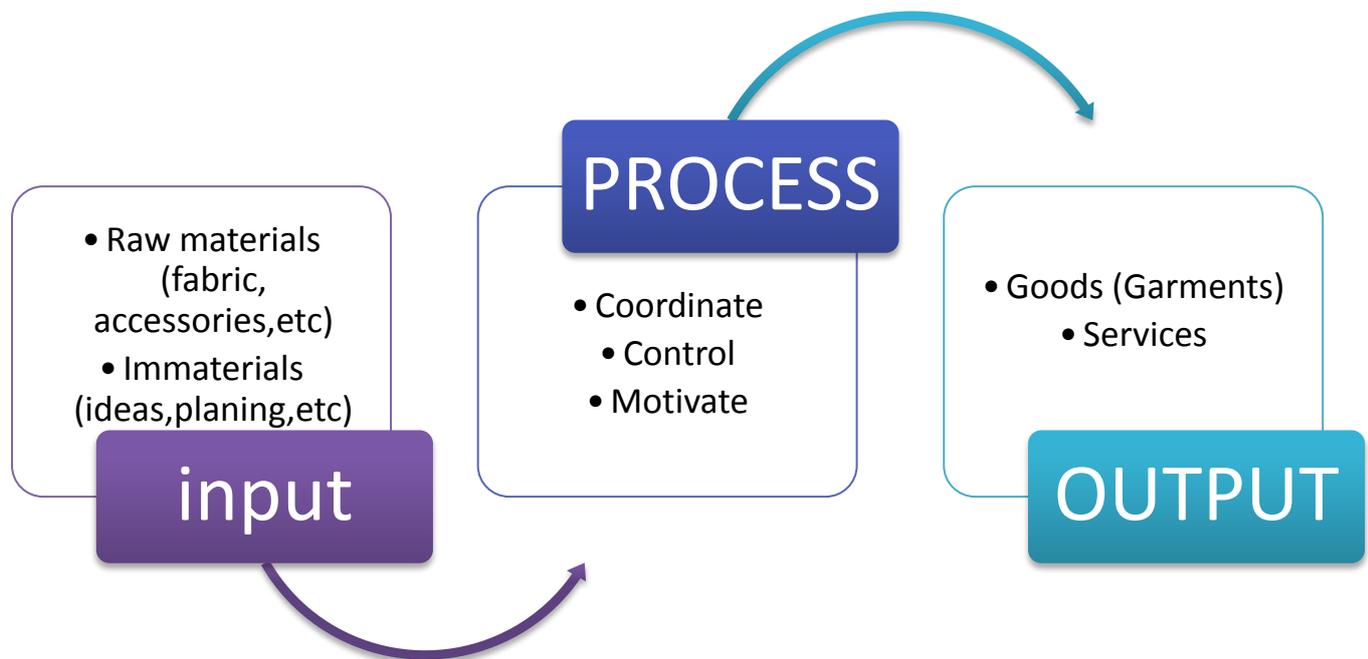


Fig: Production Process

Productivity

Productivity is a measure of the efficiency and effectiveness to which organizational resources (inputs) are utilized for the creation of products and/or services (outputs). Productivity measurement is both a measure of input utilization and an assessment as to whether or not input utilization is growing faster than output.

Productivity Improvement Techniques

1. Conducting Work Study

There is a saying “Even best can be improved”. Prepare a check list for good methods and movements. At time of motion study observe operator’s movement and compare with you checklist. If you found wrong movements or unnecessarily extra movement is present in the operation cycle correct it. By doing this you can reduce operation cycle time and can improve labor productivity up to 100%* in individual operations. Also it will help to reduce operator fatigue.

2. Hourly Operator Performance Check

Employ work study personnel checking operator capacity hourly. Compare actual operator’s hourly production with their capacity. If production is less then question them and understand the problem of the operator. Then work study personnel start thinking on methods how cycle time can be reduced

3. Research& Development for Improving Productivity

A non-value added (NVA) process but having a strong Research and Development (R&D) team in the factory brings lot of benefits.

4. Following Systems such as 5S and Kaizen

5S

5S is also a known method of reducing waste, increasing productivity and clear visibility of Nonconformance at workplace.

Kaizen

Kaizen Chinese and Japanese for "continuous improvement" when used in the business sense and applied to the workplace, kaizen refers to activities that continually improve all functions and involve all employees from the CEO to the assembly line workers.

5. Select suitable line layout

Line layout means placing of machines and center table (trolley with wheel) as per style requirement. The main purpose of choosing a better layout is to reduce transportation time in the line as much as possible.

6. Reduce Line Setting Time

Reason - lot of time is lost during setting of the line for a new style. This reduces overall machine productivity and line efficiency. To reduce the line setting time, industrial engineers have to study the garment thoroughly, prepare operation bulletin with machine requirement and machine layout plan prior to feeding cuttings to the line.

7. Improve Line Balancing

Purpose of balancing a line is to reduce operator's idle time or maximize operator utilization. In a balanced line work will flow smoothly and no time will be lost in waiting for work. Always select operators for the operation matching operator skill history and skill required. Following this method you will select highly skilled operators for higher work content operations. Once line is set conduct capacity study at a regular interval then find bottlenecks inside the line. You have to think how you will reduce the WIP (Work in Progress) at bottleneck operation.

8. Use Work Aids

Work aids are Additional devices that can be added to basic sewing machines such as folders, guides and pressure foots. If work aids are used effectively operation cycle time can be reduced many fold than existing cycle time.

9. Continuous Feeding to the Sewing Line

It is not a fault of production department if they did not get cuttings to sew. All plans and efforts towards productivity will fail. Once operators get the rhythm, they should be given non-stop feeding until style changeover to keep up the productivity.

10. Feed Fault Free Garment Components to Line

Inspect each and every garment components and accessories before starting production. It will help to prevent the defective garments.

11. Leadership Training for Line Supervisors

Line supervisor play a vital role in production. Their main job is providing instruction, transferring information. For which communication skill training is required for supervisors. Secondly, supervisor should understand the fundamental of industrial engineering like operation bulletin, skill matrix, workstation layout, movement, capacity study and theoretical line balancing etc. The above training will bring changes in managing and controlling the lines and will improve labor productivity.

12. Skill Training to Sewing Operators

Operators are main resources in the apparel manufacturing. They are most valuable resource to the company. So, factory must work on developing operator skill where required. "Training is not cost but an investment" said by many experts. Production from an operator depends on his skill level to the task. A low skilled operator will consume higher resources (time) and give less output. You will find quality related issues with low skilled and untrained operators. As the skill level of the operators is increased through training lines output will improve. Training does mean lot of time and money.

13. Fixing Individual Operator Target

Instead of giving equal target to all operators working in a line, give individual target as per operator's skill level and capacity. Set an achievable target for each operator so that they would try to reach the target. This will help improving operator's individual efficiency.

14. Eliminate Idle Time

Utilize operator's time as much as you can. There is no better alternative than just stopping operators sitting idle to improve operator productivity. Non productive time such as waiting for work, machine breakdown, power failure and repair work kill your productivity.

15. Using UBT Sewing Machine (Under Bed Trimmer)

Just think how many pieces an operator is producing in a day? Each time an operator trims thread using a trimmer or scissors consume time minimum 10% of cycle time (approx). Even machine without auto trimmer consumes more sewing thread.

16. Inline Quality Inspection at Regular Interval

Effective inspection will help to reduce defect generation at source. Less number of defective seam is made less the time will be lost in repairing it. Inline checking system will alert operators in concentrating their job. It helps to find quality issues earlier and prevent that.

17. Give Pleasant Working Environment

It may sound unlikely, but some research shows outfitting an office with aesthetically pleasing elements--like plants--can increase productivity by up to 15 percent. Jazz up your office space with pictures, candles, flowers, or anything else that puts a smile on your face.

18. Operator Motivation

Employee motivation generally depends on various factors like work culture, HR policies, incentives, bonus on extra effort or achieving target. In garment manufacturing operator's motivation come through extra money. Operator motivation can be improve by sharing certain percentage of you profit made from operator's extra effort.

19. Plan for Operator's Incentive Scheme

Based on the efficiency of the operator incentives should be allotted to the operator.

Example:

- Operator efficiency 70% - 10 INR
- Operator efficiency 80% - 20 INR
- Operator efficiency 85% - 30 INR
- Operator efficiency 90% - 40 INR
- Operator efficiency 95% - 50 INR

20. Take Regular Breaks

It sounds counterintuitive, but taking scheduled breaks can actually help improve concentration. Some research has shown that taking short breaks during long tasks helps you to maintain a constant level of performance. While working at a task without breaks lead to a steady decline in performance.

21. Use ERP Software's

It will help to reduce the communication time, easy monitoring of production details and can able to easily find out bottle necks and balance that.

Conclusion

The suggestive techniques developed in this article cover a comprehensive series of aspects in minimizing reworks in the sewing section of apparel industries by ensuring quality Production also helps to improve the productivity. Productivity help to reduce the cost of product and Quality is ultimately gives customer satisfaction. Good Quality increases the value of a product or service, establishes brand name, and builds up good reputation for the garment exporter, which in turn results into consumer satisfaction, high sales. The study clearly indicates that by eliminating non-productive activities will improve the productivity of apparel manufacturing industry.

AUTHORS BIOGRAPHIES



LAKSHMIN ARAYANAN.G

The author is currently an undergraduate student at the Department of Fashion Technology, Angel college of Engineering and Technology, Tirupur. His area of interests is production, product development.

Email: idooflakshminarayanan@gmail.com



SIVAKUMAR.P

The author is currently an undergraduate student at the Department of Fashion Technology, Angel college of Engineering and Technology, Tirupur. His area of interests includes standardization, Lean Manufacturing.

Email: idoofshivakumar@gmail.com

Published in <http://ordnur.com> on 26.01.2016

Ordnur Textile and Finance