Avoiding Non-Value Added Activities by Applying Lean Techniques in Merchandising Process

By Nandhini N. & Thenmozhi R.

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Abstract - Clothing industry focus is for achieving effective productivity and improving capacity and also to satisfying the customer needs. Lean tool is used to improve the productivity in the production industry. This study is about analyzing and removing the non value added activities and improving the flow process of an order.

I. Introduction

Merchandising process involves its hard role from examine order till shipment, and thus they plays a very dangerous role in completing an order. The single mistake of each stage will be reflected only in the end process of shipment, so appropriate destinations that cause problem should be encircled priory to avoid issues. Every organization in today’s condition, seeking for some proficient method to improve, in that way lean techniques utilization could be troublesome in implementing though it has its ideal improvement of all asserts like labour, cash and strategies. To accomplish these, the lean creation theory utilized here is Kaizen and six sigma. The authors discussed about the lean role in the industries that is discussed by various authors.

The idea of ‘Lean creation’ was at first acquainted with the more extensive open in the book “The machine that changed the world” composed by Womack et al. (1990). The term is likewise perceived as ‘Lean assembling’ or simply ‘Lean’, to a business methodology with the target of ceaselessly limit squander and augment the progression of data and items (Liker, 2004; Ohno, 1988)(1).

Lean has subsequently expanded to business practice generally. Lean administration is turning into the norm for deliberate profitability improvement. Inefficient activity wiped out the unwanted exertion, space, and capital required and lead time is diminished while quality increments and the expense of value diminishes. Lean implementation faced various obstacles related to human aspects such as the lack of knowledge of daily kaizen practices for process improvement(5).

The Time Study observing framework, a yield of the examination, is a compelling and effective device to improve profitability in the whole sewing segment, whose advantages stretch out to the entire association. Wasteful action is eliminated the result is that less effort, space, and capital are required and lead time is reduced whilst quality increases and the cost of quality decreases(6). The fundamental standards of lean and its goal is that the idea is based upon the worth creation forms, which implies that every movement, inside or outer, that doesn’t support the end client, is recognized as waste, and will be killed from the procedure (Liker 2004; Hodge et al. 2011; Shah and Ward, 2007).

Here, certain changes in process were implemented to avoid non value added activities and getting gradual improvements in bottleneck areas.

II. Methodology

Garment Export Company is one of the important components in an export industry of India. The garment exporting is the second largest export from India after gems and jewellery export according to the year 2002 survey. The garment export is being in important contributor for the foreign exchange earnings of the country (Deshpande 2009). The Indian exports had a decline by one percent in 2017 when compared to 2016. This is highly possible only because of applying certain lean techniques and developing the standard process to make a prominent work flow.
Process flow of an order

Sales manager gets appointment with client

Sales manager meet client and deliver the presentation about our existing works

Once client is satisfied they suggest for quotation and get it done according to their need and also they suggest for some new designs

Designer helps them to give the exact design which client ask for

Some ask for exact sample of their bulk order and get confirmed about the purchase order

Then the enquiry form with all necessary details will be handovered to business relationship team

They calculate the order quantity and book the required fabric which takes 20 days of time to reach the production. It gets differ, according to availability of fabric and amount.

Mean time, the team will split the size measurements of the order where they have standard size with comments and also individual measurements.

They should enter all the process in datas.

After the fabric is released, they will release the order sheets to production unit.

As a process the goods will be completed line wise.

It will be packed and sent to client.

BRM team should follow up the payment with client and should clear it within 60 days.

Hereby, above mentioned was the process flow happening in the merchandising process and highlighted stages are the bottle neck operations where efficient development is needed.

Lean Techniques were implemented to overcome the problem were occurred in production department is discussed here.

a) Changing of order sheets

According to Stern, Susan vi et al 1984 The textile exporting is the next largest source after agriculture in India. The textile has provide the jobs over 10 million employees. India has been the one of the large exporters due to its skilled workforce of the employee, low wages, trained technicians etc. This made India to be the strong economy which gives the improvement of 7 per cent in 1983. Eliminating the waste of time and effort gradually increased them to next stage.

Here, some sheets of order sheets are not considered and used by the production unit. So order sheets was converted from six sheets into three sheets in which only required information are described short and clearly. This type of changes avoids paper waste, unwanted process, avoiding confusion and also minimizes the time to get it completely done.
Specification sheet: Pattern details, shade number, fabric width, parts of merchandise and accessories trims as shown in Fig. 1

Embellishment sheet: About the embellishment and its placements as shown in Fig. 2

Quantity sheet: About quantity, sizes and their comments as shown in Fig. 3
b) Adding additional form to clientele

According to Jung Ha-Brookshire (2015) One of the key goals of the vending function is to plot garb merchandise within the styles that focus on clients would like to have, at the price they are willing to pay, inside the sizes they want, and at the time they want to shop for. Precise forecasting is one of the most vital secrets and techniques to fulfillment in any clothing agency in these days’s market surroundings.

When sales managers meet clients to get their needs, there happens a lag of communication in conveying the right features needed in that particular merchandise. So there is a common clientele form for sales manager where some necessary details (like name of client, fabric, merchandise, quantity) was supposed to be filled by sales manager and get confirmation signature from clients to start the process further.

To bring lean techniques, had added an extra form called client approval form to get additional confirmation from clients (Fig 4) which contains the visual diagrams of different collar, cuff, embroidery positioning etc. that is more easier for clients to visually understand and finalize the design they want. This gradually decrease the confusion between client, sales manager, enquiry team and designers to follow up the process effectively.
c) Minimizing the timeline for each process
According to Pankaj Sharma 2005, Indian exporting is typically lower than China in which China has 6 time more revenue in garment than India. The cycle time of a product is an important aspect in which it affects both price and delivery schedule. Involving too much of time and no committed time leads to delay in process and delivery, to minimize the problem, deadline line for each process was allotted with confirmation of all team workers including production unit.

These are the proposal deadlines for each department
Sales manager confirming the enquiry- 5 days  
Enquiry team working for their quotation – 2 days  
Working for sample – 3 Days  
Sales manager should get PO from client after confirming the sample – Minimum 2 days  
Fabric should reach production at maximum – 30 Days  
Production Process – Maximum 15 days (Depends On Quantity)  
Client reachable - 60 days from PO (Compulsory)  
Payment Clearance- 15 days from receiving goods.

There numerous datas in drive like internal request, purchase request, fabric booking, sample request, order sheet request etc. There will be more orders to look simultaneously but some have prior attention due to high value order or orders that received advanced payment etc.. In that case all these orders in a sheet will be highlighted in different way to indicates the importance and status of each orders shown in Fig 5. This reduces the confusion of getting jammed of finishing certain works. This goes by a flow and every order gets good time management and most probably the delay in each process will be eliminated.

d) Categorizing the datas according to priorwise
According to Arashdeep Singh (2015) The 2d S, Seiton, manner 'neatness' and targets to have matters in the proper location or proper layout in order that humans can acquire or use something they want quick. To do that, one need to prioritise the need and importance of products/gadget to maximise ease of place. The key questions who, what, why, in which, while and the way (Imai, 1986) have to be requested of oneself in respect of each object. This pastime involves ensuring distinctive places for all items within the place of business, thereby facilitating employees to have green manipulate over the operations and allows employees to meticulously plan substances, supplies, or tools requirements.
e) **Minimizing the Sample pieces**

According to Fabrizio, Tapping (2006) the movement which does not add any value to the work is waste of motion. If the company is not having an efficient job process and office design leads to more walking, reaching or bending than necessary, the setup is to clean the workplace and setting things in order.

Giving more sample pieces to a specific client without getting purchase order is giving a way for client to involve in illegal process like implementing our designs with other vendor with minimum cost where that vendor does not have overheads and it is so easy for them to quote for less amount.

f) **Created CRM Profile**

According to Takhar (2004) has mentioned the benefits associated with 5S, such as fewer mistakes, high speed work management, better inventory management, improved employee discipline, and a more impressive environment to handle potential customers.

To get more effective relationships with client, created CRM profile, this is a platform in which all recurring clients can be added and started to have a relationship management with industry. In CRM all new output designs and quotations will be uploaded, so client get a chance to look details about all the merchandises and this helps to get more promoted about the ideas of design and create awareness about the industry works.

g) **Proposal idea for new technique effective woven mask**

Unfortunately, whole world was supposed to face a pandemic situation “Covid-19” which made everyone of us to protect ourselves with mask. When comes to surgical, using of onetime usable mask is not most appreciable for day to day life.

So used technology in potential way and made an effective reusable woven single layer innovative cheap mask with best possible price that can be easily affordable and also highly effective. Here it is explained it in detail with design, pattern details, sourcing details and effective costing.
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**PROTECTIVE REUSABLE SINGLE LAYER MASK - 1**

- **Front & Back:**
  - Single Jersey with non-treated
  - Single Jersey with anti-microbial treated with multiple washes

**Pattern Details**
- Width 8” and Length 7”
- 1” fold on all sides

**Fabric Details**
- Single Jersey: 120 GSM
- 30’s Count Yarn
- Bleached one

**Elastic Details**
- 6” Elastic for single side
- Total 12’’ for a single mask

**Sourcing Details**

<table>
<thead>
<tr>
<th>Yarn</th>
<th>Knitting Details</th>
<th>Washing</th>
<th>Antimicrobial Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>30’s</td>
<td>Single Jersey</td>
<td>Autoclave or Steam</td>
<td>We need to do the 100Pre (Giant for this corona virus)</td>
</tr>
<tr>
<td>Cotton Mills - MOQ 60 Kg</td>
<td>110-120 GSM</td>
<td>PROTECTIVE, R. R. grade</td>
<td></td>
</tr>
<tr>
<td>10 days PVC acceptable</td>
<td>32” O.D.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Design Description**
- Fitting
- User-friendly - No irritation, soft feel and reusable
- No noise pad - It is hazardous for long-term use
- Production against Nano Particles

**Costing Details**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yarn Price / KG</td>
<td>214</td>
</tr>
<tr>
<td>Knitting Charge / KG</td>
<td>18</td>
</tr>
<tr>
<td>Washing / KG</td>
<td>16</td>
</tr>
<tr>
<td>Antimicrobial finish / KG</td>
<td>180</td>
</tr>
<tr>
<td>Total</td>
<td>428</td>
</tr>
<tr>
<td>Fabric Price</td>
<td>449.4</td>
</tr>
<tr>
<td>Consumption per Mask</td>
<td>7 grams</td>
</tr>
<tr>
<td>Cost Per Mask</td>
<td>3.1458</td>
</tr>
<tr>
<td>Elastic Price per meter</td>
<td>5</td>
</tr>
<tr>
<td>Elastic Per Mask (12” including both side)</td>
<td>1.5</td>
</tr>
<tr>
<td>Sewing thread (2 Meter)</td>
<td>0.016</td>
</tr>
<tr>
<td>Cutting</td>
<td>0.8</td>
</tr>
<tr>
<td>Stitching</td>
<td>2</td>
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<tr>
<td>Total</td>
<td>7.4618</td>
</tr>
<tr>
<td>Production &amp; Management Over Heads</td>
<td>1</td>
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<tr>
<td>Margin 20%</td>
<td>1.49236</td>
</tr>
<tr>
<td>Grand Total</td>
<td>9.95416</td>
</tr>
<tr>
<td>Selling Price</td>
<td>10</td>
</tr>
</tbody>
</table>
Thus the above mentioned 7 methods are implemented in a way of lean approach to avoid non value added activities and to make a standardised flow in merchandise process.

### III. Results and Discussion

The proposal ideas had directed a standardized, effective and efficient flow of the process to make the flow easier. To find the ranking of each changes, conducted a survey with 25 sample of merchandisers and designers. Their points for each changes was noted, consolidated and given below as Fig 7.

**Fig. 7: Ratings of each methods**

<table>
<thead>
<tr>
<th>High Prioritized Effective Changes</th>
<th>Medium Prioritized Changes</th>
<th>Low Prioritized Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional form to clientele - This gradually decrease the confusion between client and sales manager, sales manager and enquiry team and enquiry team with designers to follow up with correct flow.</td>
<td>Changing of order sheets - This changes avoids paper waste, unwanted process, avoiding confusion and also minimizes the time to get it completely done.</td>
<td>Minimizing Timeline for each process - It may not be suitable for all type of orders, it depends on clients, merchandise, fabric availability and quantity.</td>
</tr>
</tbody>
</table>
| Created CRM profile - Chances of attracting clients and maintaining their relationship for a long time.  
Design Proposal for effective woven mask – This is cheap effective method that can be used for a month with expected filtration | Priorwise Data - This reduces the confusion of getting jammed of finishing many requests. This goes by a flow and every order gets good time management and most probably in delay in each process will be eliminated. | Minimizing the Sample pieces - Not all clients get satisfied with this point, as we are a startup company, we cannot demand for samples with clients. |
IV. Conclusion

Thus from the above study it was understood that the merchandising is an important job and lot of non value added activities are involved in it and making the task more risk. Therefore in this study, by considering the risks involved, the lean techniques has been selected and implemented for reducing the non value added activities and making easy job for merchandisers.

Thomas A. Fabrizio (2006) Reduction of waste in the office helps to increase the cost or time of doing the work This can be applied to the most of the problems in industry by doing the 5s the seven waste can be eliminated such as correction and rework, waiting, unnecessary motion, over processing, equipment downtime, Inventory and storage and inspection. Most of the companies feel that 5 per cent of work is only value added and others are non value added or wasted activity.

As per the discussion, applying principles of lean techniques had a major role in developing the order process in a most possible way. It helps to reduce time, to reduce overlapping work and confusion and it also helps to maintain a standard way to move in a flow.

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