

PERSPECTIVA

A Case Research Journal

Bringing out the Golden spark in Silver Spark – A Lean Intervention

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Abstract

Silver Spark Apparel Ltd is a fully owned subsidiary of Raymonds Ltd and produces some of the best known apparel brands in India. The company owns and runs three apparel plants in Bengaluru. The case starts with a scenario where the head of the plant, Ashish Grover is feeling that despite all the successes achieved in the past, the plant needs improvement. Although the plant was deemed to be very efficient and had recently received the best workplace award, Ashish was not happy. The delivery times were a bit stretched and the factory seemed to lack a smooth production flow. At this time, he met Anand Deshpande, a LEAN specialist. Ashish invites Anand to his factory and asks him to give opinion as to how the process can be improved using LEAN Management techniques.

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Introduction

“Something does not seem to be right”, thought Ashish Grover as he sipped tea in the veranda of his friend’s house. He was responsible for overseeing three modern garment factories (two suit plants and one shirt plant) in Bengaluru. Ashish always believed in continuous improvement and encouraged bold initiatives. His factory was acknowledged as being the best in India and therefore was best in class. Recently, the plant had won the best workplace award and was ranked 4th in India in the Manufacturing category. Ashish was a man of vision and always looking for areas to improve his entire value chain.

While, the production targets were being met, the delivery times were a bit stretched. Somehow, the factory seemed to lack a smooth production flow. The factory had everything going for it, a good infrastructure, the best garmenting machines in the world and a well-trained workforce. The labour was sourced from neighbouring areas around a radius of 50 kilometers and the manufacturing staffs (foreman and support staff) were hired from NIFT and good Engineering colleges. The plant produced jackets and trousers for renowned international fashion houses. The general industry feedback was that this plant was amongst the best in India and was producing the most difficult styles in Asia as well. While there were are few hiccups as always like power cuts and supply chain unreliability, they did not pose any alarming threat.

As Ashish was grappling with his thoughts, in came Anand Deshpande, a LEAN specialist and greeted him in the veranda.

Ashish had heard about Lean Management but did not have any idea how it worked in workplace. Due to his business travels, Ashish had been exposed to latest management practices and modern management thinking. But discussing LEAN practices with Anand gave him a new and an innovative idea. He invited Anand to visit his factory and advise him.

Anand visited the factory the following week and sat in the reception waiting to be called in by Ashish. He was curious to know how an apparel factory functioned and the extent to which LEAN could be applied. To his surprise, Ashish came to the reception and introduced Anand to Shashi Bhushan, the plant manager and Hiral Lakdawalla, the jacket line production manager. He requested them to take Anand in the factory for a quick assessment.

Silver Spark Apparel Ltd – a successful Apparel Factory

Silver Spark Apparel Ltd is a fully owned subsidiary of Raymonds Ltd and produces some of the best known apparel brands in India. Located in Doddaballapur, they have an annual production capacity of about 0.4 million suits, jackets and 2.0 million trousers. They have some of the best machinery in the country, in a fairly large area of about 200,000 SF. Major American and Japanese menswear buyers have audited and approved the quality produced at the plant for commercial production for them.

The Apparel factory was like any other apparel factory with five major departments. The process of manufacturing started with fabric (rolls) and Trims inwarding and ended with

the finished product warehousing. The raw material (fabric and trims) would be stored in the inwards store and offered to the Cutting department. The cutting department would then cut the rolls into cut panels and deliver it to the Sewing department. The sewing department consisted of parts making and assembly. Each cut panel received from cutting was distributed into front, sleeve, back, collar and lining parts making departments. Each finished part from the parts making department was matched to avoid colour shade variances (per serial number) and assembled in the assembly department. After sewing, the product (in our case a jacket) was then hung on a conveyor that would transport it to the Finishing department. The finishing department would press the product under high temperature and ensure that customer product specifications in terms of appearance and fit are met. The product was then packed in plastic covers and delivered to the finished goods warehouse.

The layout resembled a process village. Machines and departments were created in the order of processing. Please refer to Exhibit I in the Annexure. Exhibit II also provides a detailed process description.

The guided tour

Ashish asked Shashi and Hiral to take Anand Deshpande on a guided tour of the plant. This tour could give Anand ideas on how LEAN can be implemented in such a manufacturing environment. Both Shashi and Hiral knew there were challenges, but as things were going alright for them, they were happy enough. While the plant had developed a legacy-culture, it still was making profits. Orders were produced in acceptable time they thought. Shashi was facing some difficult times. He was only 3 months old in the plant and had inherited a work culture which he wanted to be more oriented towards productivity and quality consciousness. He probably thought, LEAN could be a way out to transform this plant into a world-class one and establish a continuous improvement culture.

Anand Deshpande, a production engineer from Mumbai and an MBA from Boston, knew that this was a grand opportunity. Anand before returning to India in 2007, had worked with Ford Motor Company in the UK, where he was responsible to manage the PUMA assembly line. He had learnt to manage the production line using LEAN principles. The tools and techniques learnt during his stint as Product Team Manager of the PUMA Assembly Line, gave him the confidence to start off a new career as a consultant.

Shashi and Hiral took Anand around the factory by starting with the inwards stores department. The Store was divided into two parts: Fabric storage and Trim storage. The area looked very dark and had no semblance of a streamlined material flow. Goods were lying in front of the store waiting to be inwards, and many operators were waiting for materials to be issued to them. It was pretty dark despite the fact that all the tube lights were on. Materials, especially trims were kept on the top shelf blocking the light from passing on to the floor. Some part numbers were over-stacked in a disorderly fashion. Anand wondered how such a good product company could have such poor production practices. Materials were kept on the floor and not palletized. Anand asked Hiral “Why are these materials not on a pallet?” He was bewildered. Frequent movement of people

from in and out of the stores was observed. In short, Anand concluded that the store has a long way to go.

The store assessment was followed by visit to the Cutting department. Cutting department as the name suggests, would cut the fabric roll into required panels that were then stitched together in the sewing department. The process sequence started with Patternmaking and ended with cut panels issued to the batch in Sewing as shown in Exhibit III of the Annexure. After patternmaking, Indent preparation, roll allocation, Cut plan and marker making are carried out concurrently. The cut plan is then used to lay the fabric. This process is called Fabric Spreading. The Spreading process is then followed by Cutting, Numbering, Quality Inspection, Fusing, bundling and storage in trolleys.

During the Fabric spreading process, the fabric in the form of rolls were unfolded and laid on a table one layer on another till it reached the optimum batch size as per the cut plan. One typical batch would be 250 pieces. Rolls were unfolded using a spreader on four spreading tables and manually on others (two tables). There were six tables and three cutters.

One cutter would be shared between two tables to cut the layered fabric. One week of inventory (fabric rolls) was kept in racks before the spreading tables thereby blocking natural sunlight. Again, scheduling the cutter between two tables in order to fulfill orders on time was posing to be a challenge. The cutter was cutting the fabric layers with a knife attached to cutter head, but it was observed that the head was only cutting for 65% of the cycle time. For the rest 35% of the time, the cutter head was moving from one position to the other locating the place to start cutting. Cut panels were dumped on the table and trolleys and were waiting to be picked by operators for numbering. The panels were numbered to ensure that each corresponding panel constituting one jacket was serially numbered accordingly to avoid any colour shade variation.

Numbering process used numbering machines to stamp the serial number on the panel. There were too many people doing numbering, thought Anand. Trolleys were ubiquitous everywhere. Work-in-progress in Cutting was huge. Anand could count at least 75 trolleys in various sections within cutting. The material flow was never smooth, with lot of back and forth movement of trolleys. Anand was wondering how they could manage the workplace. After numbering, panels were checked and good panels then sent off to fusing.

Fusing was reinforcing the panel with fusible to make them worthy of sewing later on, because raw panels would not facilitate sewing process in critical areas of jacket. Again, it was observed that there were excess people in fusing and process was out of control. Too much of noise and talking was happening on the floor. Operators were always searching for parts.

After fusing, the operators stored the ready panels in a bundle form in trolleys, to be distributed to Jacket Line Sewing. Storage of ready panels was random and trolleys were kept wherever they could find space. Exhibit IV in the Annexure indicates the material flow within the cutting department

Sewing department was divided into two zones, Parts Assembly and Final Assembly. Parts Assembly made Sleeve, Front, Back, Lining and Collar. These parts were matched per the serial number and offered to Final Assembly. As Anand was walking on the line, he observed people searching for parts in trolleys. He could not see the department end to end, due to many line-side storage areas. They blocked the entire view of the sewing department. Interestingly, the parts assembly or preparatory as they called it, was using batch production, but the Assembly was using a single-piece flow. Every workstation in the parts assembly processed a batch of 20 pieces. Anand was wondering why such an arrangement? The expected output per day was 500 pieces in an 8-hour shift, but some workstations had a cycle time of over 60 seconds

One could see stock of parts everywhere. Some operators had parts to work with while some were idle, waiting for parts. Bottlenecks seemed to be wandering across the Sewing. One could see parts synchronization issues at the pairing stations before final assembly. The line seemed to be out-of-balance from an end-to-end viewpoint. The quality inspection was at the end of each line. Inspectors followed judgment inspection and based on the training they had would either accept or reject the piece. Acceptance and rejection depended more on how much the inspector knew about the customer requirements and training. Anand could see finished jackets returning from Finishing to Sewing for alteration purposes. Root cause analysis was virtually non-existent.

Accepted jackets from end of final assembly line were transported via conveyor to the finishing department which was in another building. The material flow in finishing was chaotic with huge inventories on trolleys and massive delays in processing. 25-30% of the final output was reworked either in Finishing or Sewing department depending on who was responsible for the anomaly. The Finishing manager found the situation challenging and had to expedite the process to meet shipping deadlines. The goods once accepted were sent to warehousing. Warehousing again stored jackets at random with no designated places for each type of jacket. At that point, Shashi ended the tour and ordered coffee in the Conference room. Anand meanwhile gave a small presentation on LEAN to both Shashi and Hiral, had a refreshing coffee and was on his way back home.

As he was driving back, he thought about the visit and said to himself **“This plant could be a great case for LEAN implementation”**

Annexure

Exhibit I: Production Sequence of a Jacket

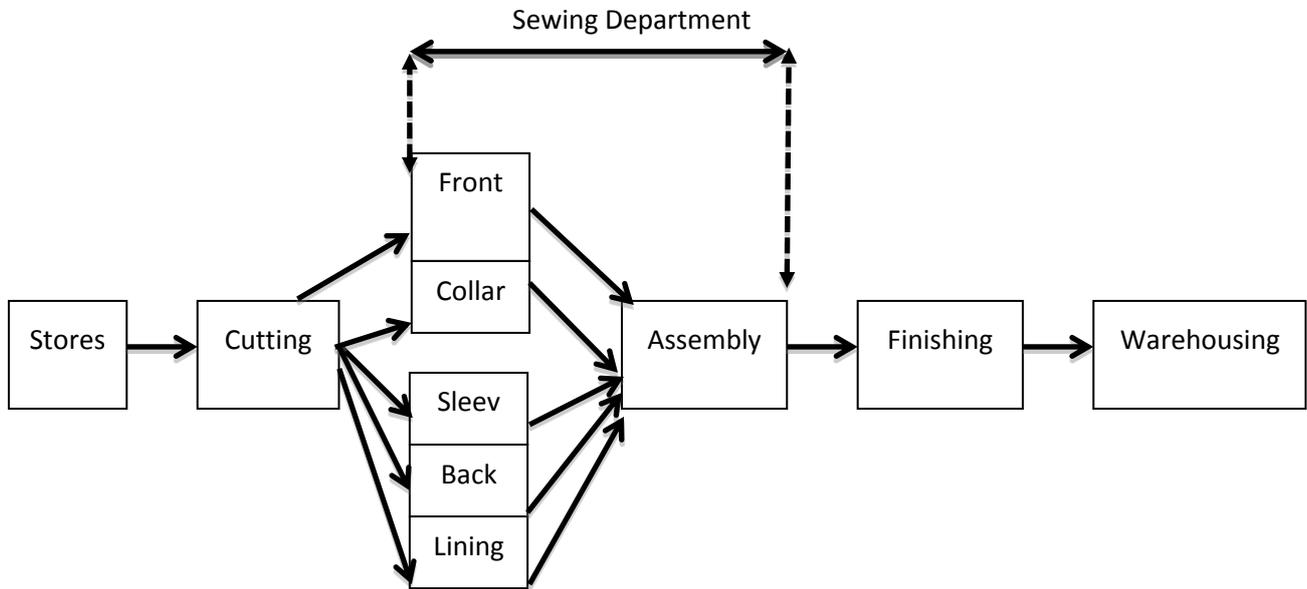


Exhibit II: Process description – Jacket making

Sl No	Department	Sections	Description	Input	Process	Output
1	Raw Material Stores	Trims Stores	Storage of buttons, labels, tags, threads etc	Trims from suppliers	Inwarding the input material & issuing to the production line as requested	Issuing to the production line as requested
		Fabric Stores	Storage of fabric rolls	Fabric Rolls from suppliers	Inwarding the input material & issuing to the production line as requested	Issuing to the production line as requested
2	Cutting	Pattern	Develops the pattern for cutting the panels	Specification of the pattern from the customer	Pattern development	Pattern Block & Hard pattern
		CAD	Makes the lay report & marker	Pattern block from pattern dept	Lay report generation & marker making	Marker send to the cutter machine
		Laying / Spreading	Spreads the fabric in lays	Fabric rolls from stores & lay report from CAD	Based on the lay report spreads the required quantity of fabric	Lay ready for cutting
		Cutting	Cuts the fabric into required panels	Marker from CAD & laying	Cuts the fabric according to the marker	Cut panels
		Numbering	Numbers the cut panels serial number wise	Lay report	Numbering of the parts	Parts with serial number
		Checking	Inspects the cut panels for defects	Paper Pattern	Inspects the parts for defects	Prevents the issue of wrong material to the production line
		Fusing	Fuses the panels together to give strength	Cut panels & fusing parts	Places the fusing parts over the panels at the required positions	Fused parts
3	Sewing	Collar		Collar cut parts	Stitches collar parts together	Collar
		Front	Front body shell of the jacket	Front panel	Stitches Front panel parts together	Front body
		Back	Back body shell of the jacket	Back panel	Stitches back panel parts together	Back body
		Lining	Lining is the inner part of the jacket	Lining panel	Stitches the lining parts together	Lining
		Sleeve		Sleeve panel	Stitches the sleeve parts together	Sleeve
		Assembly	Area where the jacket parts are stitched together	Front, Back, Collar, Lining & Sleeve	Stitches together all the parts to make jacket	Jacket
4	Finishing	Pressing	Area where the jacket gets pressed	Jacket from sewing lines	Presses the jacket to give the finishing touch	Pressed Jacket
		Packing	Area where the jacket gets packed	Jackets, Hanger, Polybag, Joker Tags	Jackets get packed according to size wise	Page 148 Packed Jacket
5	Warehouse		Storage of finished products	Jackets from the production line	Inwarding of the finished products & shipping to the customer as planned	Shipping to the customer

Exhibit III - Detail Process Flow and Documentation at Different Stages of Cutting

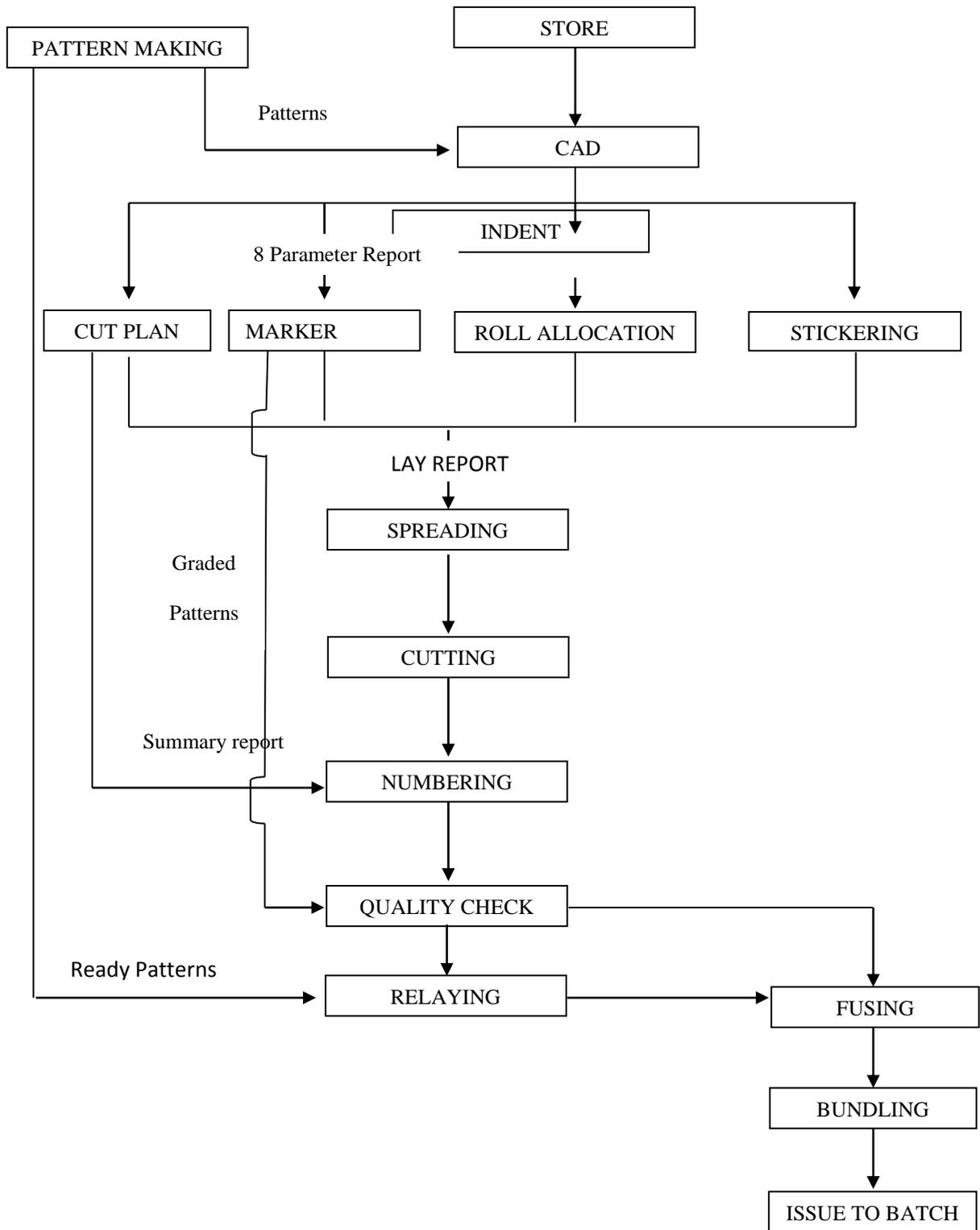


Exhibit IV: Material Flow for Jacket Cutting

