

Report On
Reducing Cost in RMG sector & IE as its importance
Of Lithe Group

By

Md. Al Mamun Hossain
19281139

Post Graduate Diploma in Knitwear Industry Management (PGD-KIM)

Executive Development Center, BIGD
Brac University
[May] [2021]

Report On
Lite Group
Reducing Cost in RMG sector & IE as its importance

By

Md. Al Mamun Hossain
19281139

An internship report submitted to the Executive Development Center, Brac Institute of Governance and Development (BIGD), Brac University in partial fulfillment of the requirements for the degree of Post Graduate Diploma in Knitwear Industry Management (PGD-KIM)

Executive Development Center, BIGD
Brac University
[May] [2021]

© 2021. Brac University
All rights reserved.

Declaration

It is hereby declared that

1. The internship report submitted is my/our own original work while completing degree at Brac University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I/We have acknowledged all main sources of help.

Student's Full Name & Signature:



Md. Al Mamun Hossain
19281139

Academic Supervisor's Full Name & Signature:

Khandaker Wahedur Rahman
Research Fellow, BIGD
Brac University

Letter of Transmittal

Khandaker Wahedur Rahman (Academic)

Research Fellow,

BIGD, Brac University

66 Mohakhali, Dhaka-1212

Subject: Reducing Cost in RMG sector & IE as its importance

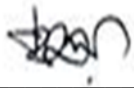
Dear Sir,

This is my pleasure to “Reducing Cost in RMG sector & IE as its importance” in Lithe group.

I have attempted my best to finish the report with the essential data and recommended proposition in a significant compact and comprehensive manner as possible.

I trust that the report will meet the desires.

Sincerely yours,



Md. Al Mamun Hossain

19281139

Executive Development Center, BIGD

Brac University

Date: May 15, 2021

Non-Disclosure Agreement

[This page is for Non-Disclosure Agreement between the Company and The Student]

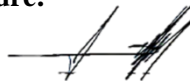
This agreement is made and entered into by and between [Name of Company] and the undersigned student at EDC, BIGD, Brac University.....

Student's Full Name & Signature:



Md. Al Mamun Hossain
19281139

Industry Supervisor's Full Name & Signature:



Md. Javed Iqbal
CEO, Operations
Lithe Group

Acknowledgement

In the name of ALLAH, The Most Gracious, Most Graceful.

Alhamdulillah, with full effort and patience in taking all challenges, Internship at Lithe Group, finally accomplished.

I would like to extend thanks to the Honorable Managing Director, FM Kabir Mohiuddin Lithe Group, for not only his tremendous organizational support but also for giving me so many wonderful opportunities to do this report.

Special thank goes to our enthusiastic Md Javed Iqbal, CEO of lithe Group, and Mohammad Anwarul Islam AGM (IE). Khandaker Wahedur Rahman (Academic) Research Fellow who so generously inspired & contributed to do this internship report.

I would like to thanks my Honorable research fellow Khandaker Wahedur Rahman, for his very valuable editorial advice, comments, guidance, and supporting me throughout this internship report.

I am obliged to all department heads, seniors, and juniors in the industry, who coordinated and helped me directly or indirectly during this process.

I would like to thank the management of the Lithe Group who helps me a lot to get the data and information.

Executive Summary

- This report provides that how to reduce cost in garments industry based on Industrial Engineering, like how IE department will reduce cost, what is the procedure of reducing cost, Capability of this factory and other departments in garments and their capacity. Methods of analysis of this report including practical research and data analysis with the help of department head in this organization, such as knitting capacity, Dyeing, and AOP capacity, cutting, sewing, finishing capacity, and their working procedures, and how to reduce the cost of that department with the help of IE. Results of the data analysis showed that this organization's knitting capacity is 40,000 Kgs where their used machine is Mayer & Cie and Matsuya and this knitting produced Single Jersey, Rib, Pique, Fleece, Terry, Mesh, Double Jersey, Interlock, Waffle/Thermal, etc. The dyeing section used machine is Slavos, Thies, and Fongs and its capacity is 50 tones solid and 30 tones Yarn dyeing and 20 tones AOP production per day. This organization has also a print and embroidery section where the printing capacity is 70000 pcs, and embroidery capacity is 8,000 to 10,000 pieces. This organization CAD used updated GEMINI software and produced marker for 10 cutting table where Cutting capacity is 170000 where there have 3 updated auto spreader and 1 auto-cutter from FK France and FK Italy. and sewing capacity is 150000 pcs, and these 2 departments completely control IE department, where the manufacturing technology is being gradually transforming to adopting LEAN production after came IE for this department sewing efficiency increased by 8%, and cutting production increased minimum 10000 pcs. Also, an IE of cutting reduces sticker and ink by 30% of its total usage. This organization has worthy buyers such as M&S, Next, HRM, LPP, Zeeman, and Takko. The report has shown that how to decrease product cost and waste reduction of each department. The major area of

weakness is the textile and dyeing section of this organization, they have capacity but they did not achieve the target as per capacity. Dyeing planning should be adjusted as per colorwise and fabrication wise so that process loss might be reduced

- Management should proper monitoring in dyeing and textile section.
- Need to sustain LEAN manufacturing system as per IE.

The production was sometimes hampered due to accessories inhouse problem for merchandiser. The management of this organization are completely focused in sewing production but need to focused all the department of this organization as like sewing. sometimes department head was less focused on his job responsibility so that some internal problem was arisen.

Table of Contents

Declaration.....	iii
Letter of Transmittal	iv
Non-Disclosure Agreement	v
Acknowledgement	vi
Executive Summary	vii
Table of Contents	ix
List of Tables	x
List of Figures.....	x
List of Acronyms	x
Glossary	xii
Chapter 1 About Organization.....	1
1.1 Overview of the Industry	1
1.2 Vision & Mission.....	2
1.3 Goals & Objectives	2
1.4 Organizational structure, Organogram, Branches and Departments	3
1.5 Products/services produced by the Industry	9
Chapter 2 Description about task accomplishment.....	10
Chapter 3 Critical assessment of Internship work	14
3.1 Application of Generic and Industry specific courses during internship.....	15
3.2 Suggestion for industry improvement (based on internship).....	15

3.3 Learning for self improvement]	15
Chapter 4 Conclusion	16
4.1 [Type your Chapter Sub-Heading Here]	16
References	17
Appendix A.....	17

List of Tables

Table 1: Training set Batting First	Error! Bookmark not defined.
---	-------------------------------------

List of Figures

Figure 1: Data Collection.....	Error! Bookmark not defined.
Figure 2: Dataset of Final Segment	Error! Bookmark not defined.

List of Acronyms

AOP	All Over Print
R&D	Research and Development
RMG	Ready Made Garment
CAD	Computer Aided Design

ETP	Effluent Treatment Plant
CAM	Computer Aided Manufacturing
QC	Quality Control
GSM	Gram per Square Meter
GSD	General Sewing Data
QA	Quality Assurance
SOP	Standard Operating Procedure

Glossary

Thesis An extended research paper that is part of the final exam process for a graduate degree. The document may also be classified as a project or collection of extended essays.

Glossary An alphabetical list of key terms
This is an optional page and can be removed if not used.
Use one table row for each item to allow sorting using Word's table tools.
Apply the style **1_Para_NoSpace** to table rows as shown here.

Chapter 1

About Organization

1.1 Overview of the Industry

Guided by the spirit of Lithe Group complemented with self-belief and a positive spirit, saw the birth of Lithe Group in 1993. The founder chairman F.M. Kabir Mohiuddin left the comfort of his job as a marine engineer ventured into the uncertain path of entrepreneurship.

Armed with confidence, determination, and the ability to think big, Kabir rented a space in Dhaka and pioneered a modern knitwear manufacturing business with only 30 machines. Lithe was set on motion. The business lived up to its core principles of grace and flexibility and managed not only to adapt to the times but to surge ahead of it, and soon the yields came out. By 2000 Lithe was a well-reputed ready-made apparel manufacturing destination.

The drive continued and resulted in further expansion of knitwear and accompanying fabric knitting and dyeing backward linkages. Two decades on, Bangladesh has matured as an apparel sourcing destination and Lithe has evolved as a brand for the article. The journey carries on today, bringing in the new generation to sustain continuity.

Under the leadership of Mr. F M Kabir Mohiuddin, Lithe Group started its' journey in 1989 with the Textile care label printing business.

The first RMG production facility was established in 1991, and 1992 marked the exporting year for the company.

With hard work, dedication & a clear vision, Lithe Group is one of the most renowned groups of the company in Bangladesh, with an annual turnover of \$90 million.

Currently, the company is exporting to Europe, North and South America, Asia, and Australia.

A team of 4,500 young and talented individuals is working relentlessly every day to make the dream of F.M Kabir Mohiuddin a reality today.[1]

1.2 Vision & Mission

The lithe group strives to provide quality services on time, based on best practices for the satisfaction of our Partners & Stakeholders. We foster a friendly working environment through open communication and mutual respect. We encourage initiative, innovation and, teamwork. Worker's welfare and rights are our premier focus. We are committed to a cleaner and greener environment. We are driven by our responsibility to society as a Corporate Body.[2]

1.3 Goals & Objectives

Lithe Group has currently an export projection target is \$60 million annually, Upcoming next year's export projection target will be \$100 million annually and up to 2030, the target of this organization will be \$200 million. The group management is started its way to catch \$200 million up to 2030. Lithe Group has set and objectives to make this organization completely LEED and Green certified. Lithe Group's main objectives are to ensure safety for their worker.

1.4 Organizational structure, Organogram, Branches and Departments

Lithe Group A one-stop solution factory which integrates a knit composite facility with knitting, dyeing, washing, All-over print (AOP), Printing and Embroidery and garments manufacturing unit, sewing in one location. Lithe Group is one of the biggest and most advanced vertically integrated composite Textiles and garments manufacturing units.

SECTIONS

- Knitting
- Dyeing
- All Over Print (AOP)
- Printing & Embroidery
- Garment Manufacturing

Knitting Section

The knitting section at Lithe Group has a daily production capacity of over 40,000 Kgs. The knitting section is comprised of advanced machines from world-renowned brands like Mayer & Cie and Matsuya.



Knitting Machine

The use of versatile and the latest knitting types of machinery enables Lithe Group to manufacture a wide range of fabrics namely Single Jersey, Rib, Pique, Fleece, Terry, Mesh, Double Jersey, Interlock, Waffle/Thermal, etc.

It also has expertise on a variety of fancy fabric ranges including loose-knit jersey, different designs based on the single and double jersey, different kinds of design fleece-like diagonal fleece, herringbone fleece, drop the needle, and semi – jacquard structures.

Alongside circular knitting, it's knitting section also comprises flatbed knitting machines (for the collar, cuff, and waistband) and twill tape machines.

The dyeing section is well equipped with high-tech machinery from Sclavos, Thies, and Fongs. It has a solid dyeing capacity of 50 tons and a yarn dyeing capacity of 30 tons per day. To ensure quality fabrics, it has a range of finishing machines from Santax, Lafer, and Bruckner.



Dyeing Section

Features

The Lithe group has a dedicated Research and Development (R&D) team to work on new developments and ensure parameters for bulk production. Besides, Lithe is capable to develop the fabric as per the requirement of our valuable customers. Its well-equipped laboratory offers a wide range of testing and color recipe-making facilities.

The Lithe group has accreditations from Buyer:

Next

Cotton Heritage

HRM

Orange.com

New Look

Avon

Mother Care

It can handle delicate fabrics like viscose, modal, and cotton/Tencel blends.

It has one of the largest ETP in the country to treat the effluents from dyeing.

Printing & Embroidery Section



Screen Printing operation

The printing & embroidery section has highly configured printing machines including sublimation print and skilled manpower which can print up to 70,000 pieces and embroider 8,000-10,000 pieces each day. It can do printing techniques like a flock, discharge, emboss, puff, reactive, pigment, burnout, stone & stud attachment, heat transfer, and several others. It has also invested in a state-of-the-art in-house All Over Print (AOP) with rotary, flat-bed, and digital printing along with a sanforizing facility for serving all of our customers' needs. It also has the facility of sublimation and digital print. Our embroidery strength includes multi-color sequins and boucle embroidery.



Embroidery section

Daily production:

Print 100000 pieces

AOP 20 tons

Embroidery 8,000 to 10,000 pieces

Garment Manufacturing Section

Lithe Group has a production capacity of 40 M pieces annually with 125 sewing lines in operation which will be expanded soon. The cutting department operates auto cutters and spreaders from FK, France, and FK Italy.



There are fabric relaxing machines and all the patterns and markers are produced using the updated version of Gemini CAD software to maintain optimum fabric utilization; keeping material costs to a minimum.



The Lithe Group. The garment manufacturing unit is capable of producing a wider range of styles from basic tank tops to elaborate hoodie jackets with kangaroo pockets. Its garments technicians are very capable to handle a wide range and several varieties of style as per the requirements of Customers having with high-quality standard.

Manufacturing technology is being gradually transforming to adopting LEAN (Japanese Manufacturing Technology) culture and practices to reduce waste and to optimize efficiency to be competitive in the global market. Already it has conveyor sewing manufacturing lines to minimize wastage and maximize uses of the resources and it is one of the latest manufacturing technologies in garments technology. All products are metal detectors passed to ensure garments safety.

To reduce the power consumption of operational activities LITHE group is using a servo motor system for all sewing types of machinery.[4]

1.5 Products/services produced by the Industry

Lithe Group is located 35 kilometers away from Dhaka airport and has a total floor space of 1,221,844 square feet. It produces mainly t-shirts, tank tops, cut and sewn t-shirts and polo shirts, sweatshirts, jackets, hoodies, turtlenecks, strap tees, shorts, trousers and dresses. The Lithe Group have 4 units: Knitting (circular and flat), Dyeing (yarn and fabrics), Printing & Embroidery (all-over digital printing, auto-carousel screen printing and table screen printing) and Garment Manufacturing (Cutting, Sewing, Finishing).

Fabrics: Jersey, elastane jersey, auto stripe and feeder stripe jersey, 3 thread fleece (with or without elastane), pique, back pique, elastane pique, auto stripe and feeder stripe pique, rib, rib with elastane, interlock, terry, terry with elastane, flat knit collar and cuff and other CAM design fabrics.

Garments: T-shirt, polo shirt, tank top, cut and sewn t-shirts, and polo shirts, sweatshirt, jackets, hoody, turtle neck, strap tee, shorts, trousers, and dresses [5]

Chapter 2

Description about task accomplishment

Cutting Section:

Fabrics Relaxation Procedure

- Fabrics are relaxed for a minimum of 08-24 hours making unroll considering construction.
- Every Relaxation date and time have been recorded. After spreading, will relax 2 hours before the cut.

Before Cutting Procedure

- Collect marker and quality checked by cutting QC.
- Fabric Spreading is done based on the Shade chart/Shade grouping provided by the fabric warehouse.
- Spreading reports have been made after spreading with related all necessary data.

- Spreading Quality checkpoint: -Table marking -Ends -Leaning –Tension -Narrow Goods -Remnants -Counts -Ply High -Marker Placing -Fabric Flaws
- The highest lay for knit fabrics is length 12-16 meters and height 3-4 inches.
- The Lay chart has been maintained roll-wise.
- The quality inspector has controlled quality inspection during fabric lay.
- Cutting spreader man has spread marker after finishing lay.
- For stripe and check fabrics, alignment to be correct by using a hook, thread.
- Before cutting the cutter man need to attach a clamp, Gum tape on the layer.
- The shade chart needs to be hanged during lay.
- Cutting Quality check points: -Miss cut –Rugged Cutting –Notches-Matching Plies and pattern check.

After Cutting Procedure

- The quality team has checked every bundle using hard pattern three different positions of the bundle.
- Numbering and bundling separation done by following spreading report and identify each bundle by style, Cutting number, Bundle number, size, Serial number, Shade number, and Parts name.
- 100% cut panel have inspected
- If any defective panel is found, has been replaced from lay chart wise remnants by following shade and pattern grain line.
- The light color bundle needs to be bind with a light color string; the deep color bundle needs to be bind with a deep color string
- Light color Fabrics have covered by poly in rack or pallet.

- Print/embroidery parts have been delivered in the specific section.
- Then all cut panels will be ready to deliver in sewing.

Sewing Section:

- Product analysis by IE, Production, Quality & Maintenance team
- Set up a target for production considering customer demand (takt time)
- Set up machine layout considering target
- Set up operator layout considering target
- QC check of the product
- Line setup & balancing
- Distribution of all the processes
- Cutting parts received section
- Cutting parts distribution to the operator and helper
- Complete parts making individually
- Online QC check
- Online quality audit
- Counting output and checking with the target
- Final quality check (for each Garment)

Finishing Section:

- Sewn garments received in finishing section
- Ironing or pressing

- Initial quality check
- Spot removing if there's any spot
- Getup & measurement by quality team
- Hangtag attaching
- Folding
- Poly
- Metal check
- Packaging or cartooning

Screen Printing Section:

- Design creation
- Preparing the screen
- Exposing the emulsion
- Creation of the stencil
- Preparation for print
- Printing
- Quality check & finishing

Embroidery Section:

- Receive Body Panel from Cutting
- Receive Required Thread/Spec./Design /Pattern
- Check Approved Specifications
- Set Embroidery Machine
- Embroidery Operation

- Embroidery Quality Check
- Body Panels Send for Fusing
- Send Embroidery parts for Sewing

Chapter 3

Critical assessment of Internship work

In Cutting area during the working some problems are happening continuously as like below

Fabric approval delay: Fabric are in housed as per plan but with the different shade from fabric swatch. Sometimes schedule is knocking but till now fabric are in dyeing procedure. As size set have complete in sample or sewing section, sometimes it also takes time. Sometimes fabric is coming from dyeing when ship date is knocking at door. That cause planning breakdown also. GSM discrepancy & body to rib shade variation also the cause of wastes. To avoid those issues, fabric has to be prepared & delivered as per lab dip or yarn dip. If any issues arise after bulk, then before sending it has to be approved from related department. Then waiting for decision wastes will be reduced or eliminated.

In Sewing area during the working some problems are happening continuously as like below

Imbalance line layout cause bottleneck which is the main barrier to fall down of productivity. Machine breakdown or lack of required machine is also responsible for low productivity. In here open capacity from planning department causes fall of production. Sometimes changeover is required without completing order quantity due to fabric or accessories crisis which need to complete as short quantity which is also work as barrier for productivity.

For smooth operational, planning has to set properly with prior supply chain capacity & capability. Then minimum seven days before the start of line a simulation programme is mandatory among the department of planning, IE, production, quality & maintenance. All the external work like size set arrangement, pp meeting, pattern correction, operation bulletin prepare, machine arrangement, has to be done before the feeding of line.

Changeover time has to be maintained as per single minutes exchange for dies (SMED).

In running sewing line machine breakdown has to be maintained by providing quick service or replacement of machine. Quality has to be maintained properly otherwise re-work for alter rectification will kill the productivity.

In the finishing, printing & embroidery section, main barrier for low productivity is open capacity from planning, decision pending, input delay from previous department. To eliminate supply chain management has to maintained strictly.

3.1 Application of Generic and Industry specific courses during internship

JIT, 5S, Kaizen, Kanban are used to reduce waste as well as improve productivity.

3.2 Suggestion for industry improvement

Supply chain management has to be developed strongly so that every material will stand by just on time, right quantity with proper quality in right place. SOP must be established & maintained properly. Considering line loading plan for every style simulation has to be done minimum 03 days before. Kaizen, Kanban can be used to improve productivity.

3.3 Learning for self-improvement

- I. I have earned some knowledge about the quality management system of different sections of the industry.
- II. I have identified the process sequence of different units and prepare report of every quality check that gives me the better idea about running of a production.

III. I have learned some knowledge about how to manage production at different section (cutting, sewing, finishing) as well as I have learned that how to be a resource utilizes.

Chapter 4

Conclusion

IE has an important role in reducing wastes as well as cost & the summary as below

- ✚ Fabric wastes can be reduced by right thing in first time in sample stage, bulk stage
- ✚ Machine breakdown can be reduced
- ✚ Open capacity from planning can be control by close monitoring
- ✚ Productivity can be increase by using balanced layout
- ✚ Man, machine, material can be used effectively
- ✚ Risk factor can be analyzing by value stream mapping (VSM)
- ✚ Work place can be organized
- ✚ Material flow can be handling efficiently
- ✚ Defect can be controlled

4.1 Reducing Cost in RMG sector & IE as its importance

References

[1] <https://www.lithegroup.com/>; 2020

[2] <https://www.lithegroup.com/>; 2020

[3] <https://www.lithegroup.com/>; 2020

[4] <https://www.lithegroup.com/>; 2020

[5] <https://www.lithegroup.com/>; 2020

Appendix A.

An Example of an Appendix

Appendices should be used for supplemental information that does not form part of the main research. Remember that figures and tables in appendices should not be listed in the List of Figures or List of Tables. Refer to the Thesis Template Instructions for more information.