

A Study on Knit Concern Group

By

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An internship report submitted to the MBA in partial fulfillment of the requirements for
the degree of MBA

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Letter of Transmittal

Saif Hossain

Assistant Professor &

Director (BBA Program),

BRAC University

66 Mohakhali, Dhaka-1212

Subject: Intern to Knit Concern Group

Dear Sir / Madam,

With pleasure, I would like to present my entry-level role and provide information about the Knit Concern Group's recruitment and selection process. I was appointed in accordance with your instructions.

My best effort has been made to ensure that the report is as complete and significant as possible, providing the necessary information and suggested proposal.

I'm hoping that the report will fulfill expectations.

Sincerely yours,

ID- 20264043

BRAC Business School

BRAC University

Date: 28/10/23

Acknowledgement

Firstly, I offer prayers to the All-Powerful Allah, in whose name my thesis has been finished without any significant disruption.

*Second, I would like to thank my supervisor **Saif Hossain**, Assistant Professor & Director (BBA Program), for his kind support and advice throughout my work. Whenever I needed assistance, he provided it.*

And lastly, to my parents: it might not be possible without their help. in their thoughtful prayer and assistance. I'm almost done with my degree now.

Lastly, I would like to thank a few technicians and the lab personnel for their almost unbelievable support.

Mahmudul Hasan

Executive Summary:

The Knit Concern Group (KCL), established in 1990, specializes in knitting, dyeing, and garment production. With high-quality products and endorsements from international companies like Oeko Tex, SGS, and WRAP, KCL has gained a reputation for its high-quality products. The company is certified by GOTS, Oeko-Tex, RCS, and OCS. KCL's turnover has grown from 6 million US dollars in 2003 to 149 million US dollars today. Due to its high-quality products and the endorsement of numerous international inspection companies, including Oeko Tex, SGS, and WRAP, as well as prestigious purchasers, including MARKS & SPENCER, S.OLIVER, PUMA, H&M, and others, it has gained a great deal of reputation since it started production.

KCL has won numerous national and international awards for inclusive skill development and environmental performance.

Keywords:

Knit, Apparel, Merchandising, Industrial Engineering/IE, Compliance, ETP

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List of Acronyms

AQL - Acceptable Quality Limit

BGMEA - Bangladesh Garments Manufacturers and Exporters Association

ETP- Effluent Treatment Plant

ILO- International Labor Organization

Chapter 1: About the Internship

1.1 Introduction

During my two-month internship at Knit Concern Group, I had the honor of learning a great deal about the vibrant world of the modern knit composite sector. Knit Concern, a company well-known for emphasizing exports and high-quality goods, gave me a practical learning opportunity that helped me connect the dots between my academic understanding of textile technology and its real-world applications.

1.2 Problem Solving and Quality Assurance

Throughout my internship, I saw a dedication to quality assurance. Poor dying jobs were uncommon, and when they did occur, the knowledgeable and capable workforce took care of them right away. The organization's effort to promptly addressing problems demonstrated a desire to uphold Knit Concern's outstanding standing in the international marketplace.

1.3 Stress on High-Quality Materials

Seeing the careful application of premium chemicals, dyes, and yarn throughout the production process was one of the most memorable parts of my internship. This demonstrated the company's commitment to using premium materials, which greatly enhanced the end items' high quality.

1.4 Learning and Professional Development

I was able to work directly with industry specialists during the internship, which helped me to deepen my grasp of industrial management and machines. My academic textile background provided me with a theoretical knowledge base, but Knit Concern's collaborative setting allowed me to apply and build upon that knowledge to create a meaningful learning experience.

Chapter 2

2.1 Information About the Knit Concern Group

Participating in industrial training serves as a crucial bridge, connecting the theoretical knowledge acquired in textile education to practical applications. My two-month internship at Knit Concern has been invaluable in enhancing my understanding of textile technology, industrial management, machinery, production processes, and navigating the intricacies of the industrial landscape. During this period, I discovered that Knit Concern stands as a contemporary knit composite industry with a strong focus on exports.

The company has already established a formidable reputation in international markets, thanks to its superior products. Notably, their fully equipped textile testing laboratory ensures the highest standards. Throughout our training, instances of subpar dyeing jobs were infrequent, and any issues encountered were promptly addressed with the assistance of skilled and competent labor. The use of high-quality chemicals, dyes, and yarn in manufacturing further underscored the industry's commitment to excellence.

Efficiently managed, the administration and leadership at Knit Concern contribute to its operational success. The mill is equipped comprehensively, enabling round-the-clock support for production. My internship in this factory has proven to be an immensely fortunate opportunity, allowing me to witness firsthand the seamless integration of theory and practice in a dynamic industrial setting.

2.2 History of the Group

The headquarter of Kint concern in the municipality of Narayanganj, which is home to Bangladesh's biggest river port. In addition, Narayanganj has been one of the biggest textile and apparel hubs in this subcontinent since the Middle Ages, when it gained international recognition for its exquisite Muslin. This custom has eventually led to Narayanganj becoming the most prominent location for the knitwear sector, which is currently the most dynamic industrial phenomenon in the nation. Knit Concern Group finds Narayanganj to be the perfect location because of its bustling port, rich tradition, abundance of talented craftspeople, and many other features.

It began its extremely modest journey in 1990 out of a rented Nayamati building. That prospective embryo may very quickly transform into a sizable corporate entity in the most

modern sense by 1998 thanks to its forward-thinking entrepreneurship, commitment to quality and excellence, adoption of cutting-edge technology, and acute attention on customer happiness.

Knit Concern has expanded continuously since its founding, both in terms of quality and quantity, as well as all aspects in between. In response to its need for expansion over the past few years, it has almost doubled its capacity by utilizing the most up-to-date machinery and equipment from Germany, Switzerland, the USA, Japan, Italy, China, and the UK. Excellent and committed human resources, the majority of modern Western machinery, IT, and automation have all optimized its operational efficiency and costing.

At present, on a single and full-fledged campus at Godnail, Narayanganj, about 12,500 skilled people of Knit Concern are producing about 1,50,000 pieces of very high-quality knit garments and 25,000 pieces of lingerie per day. There are many indicators that may sketch the profile of Knit Concern's business success but, perhaps, the increase of its export alone, from merely US\$1.03 million in 1992 to about US\$ 90 million in 2014, would show the degree of its exponential growth.

2.3 Key Facts

1. Produces 160,000 pieces of clothing and 30 tons of fabric every day
 2. Has over 8,000 employees
 3. More than 250 experts from different fields
 4. The entire investment surpasses US\$ 55 million.
 5. The US\$ 168 million annual turnover in 2018
 6. GOTS and Oeko-Tex certified
- A textile lab certified by ISO 17025, Marks & Spencer, Puma, Decathlon, and H&M

2.4 Basic Information of the Company

Owners and Board of Directors:

Jahangir Alam.

Email: Jahangir@knitconcern.com

Email: info@knitconcern.com

Web: www.knitconcern.com

2.5 Mission & Vision

We have determined our future direction as part of our continuous improvement (CI). We think that having a clear understanding of the company's purpose and mission will enable us to accomplish our objectives more successfully. The "IMPACT" values, mission, and purpose of Urmi Group. Respect for others, cooperation, passion for excellence, agility, customer focus, teamwork, and integrity(Chowdhury, 2021).

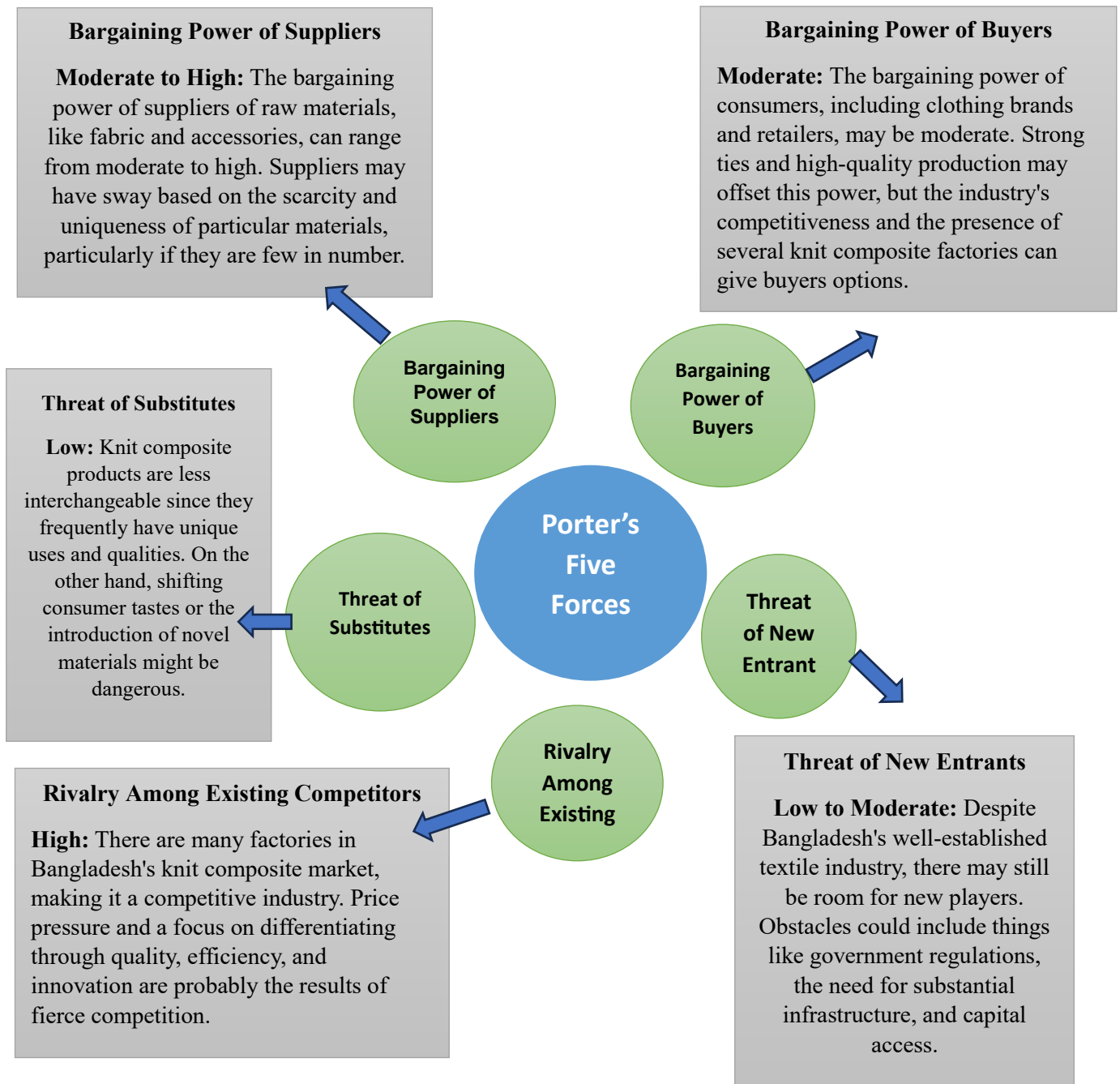
2.6 Compliance & Certificate

Every level of employee at each of the three Knit Concern factories has a secure and comfortable work environment. All facilities guarantee large, well-lit, and climate-controlled factory floors. Internationally renowned compliance organizations like Better Works, ACCORD, OEKO TEX, Amfori BSCI, and FLO-CERT routinely audit all factories.

List of Certificate



2.9 Porter's Five Forces Model



2.10 Knitting

2.10.1 Operation Flow Chart

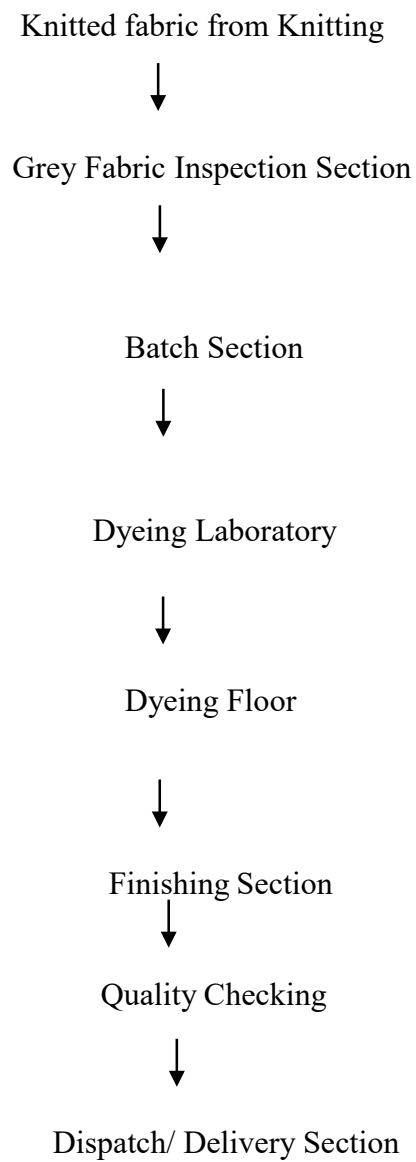


Fig 2.1: Operation Flow Chart

2.10.2 Knitting Section



Fig 2.2 Circular knitting machine



Fig 2.3: Flatbed knitting machine

2.10.3 List of Machines

Table 2.1: List of Knitting Machines

TYPE	BRAND	MC. QTY.
	TOTAL	173 Nos.
Single Jersey Tube	Fukuhara, Japan	34 Nos.
Single Jersey	Lisky, Taiwan	04 Nos.
Single Jersey Open/Slitting	Fukuhara, Japan	28 Nos.
Single Jersey Open/Slitting	Mayer & Cie, German	10 Nos.
Single Jersey Open/Slitting	Lisky, Taiwan	08 Nos.
Rib / Interlock	Fukuhara, Japan	21 Nos.
Rib 8 Lock	Fukuhara, Japan	07 Nos.
Interlock	Fukuhara, Japan	08 Nos.
Interlock	Lisky, Taiwan	01 Nos.
Rib Eyelet	Jinhar, Taiwan	01 Nos.
Auto Striper (Four Color) S/J	Fukuhara, Japan	04 Nos.
Auto Striper (Six Color) S/J	Fukuhara, Japan	01 Nos.
Auto Striper (Four Color) Rib/Interlock	Fukuhara, Japan	02 Nos.
Fleece 3 Thread	Fukuhara, Japan	04 Nos.
Fleece 3 Thread	Lisky, Taiwan	12 Nos.
Flat Knit Semi Jacquard	Stoll, German	02 Nos.
Flat Knit Computerized	Shima Seiki	10 Nos.
Flat Knit Computerized	Matsuya, Japan	12 Nos.
Flat Knit Computerized	Protti, Italy	04 Nos.
	Total	173s.

Monthly Average Report:

Daily production is approximately 7000 KG.

So, it is seen that monthly average production of this factory's $7000 \times 30 = 210000$ KG.

Monthly Efficiency:

Daily Production = 7000 kg

Approximate daily production

capacity = 10000 Kg So, monthly

production = 7000×30 kg

Monthly production capacity = 10000×30 kg

Then, monthly production efficiency = $(7000 \times 30 \times 100) / (10000 \times 30) = 70\%$

Fabric GSM Calculation:

Formula-1: $590.5 \times \text{Type of fabric} / \text{S.L.} / \text{Yarn count}$

Formula-2: $\text{GSM} = (\text{CPI} \times \text{WPI} \times \text{Tex} \times \text{S.L.}) / 100$

Knitting Faults

Spirality

Course spirality caused by multiple feeds on a circular knitting machine.

- Wales spirality caused by the use of yarn that is twist lively.

Crease Mark / Edge Mark

- Yarn tension variation
- Lower GSM of fabric
- Faulty fabric takes up etc.

Pattern

- Yarns come from different lot
- Faulty cam use in the machine.

Hole Mark

- Holes are the result of the crack of yarn breakages.
- Broken needles.

Sinker Mark

- Faulty sinker use in the machine.
- Faulty sinker use in the machine.

Low GSM.

- Bucking of the needle latch.
- Yarn tension variation during production.

Drop Stitches

- Drop stitches are the result of a defective needle.
- They also occur when a yarn is not properly fed during loop formation.

Oil mark

- Due to dirty machine and improper lubrication.
- Excess oil use.

Pin hole

Grease ma

2.10.5 Grey Fabric Inspection Section

This is the section of dyeing in which the grey fabrics are checked by inspection machine. The fabrics faults are identified for grading the fabric for future steps qualified.

2.11 Dyeing Section

Knit Concern has state-of-the-art machinery for fabric dyeing and finishing. For its intensive experience and expertise, its dyeing process results in a clone-like uniformity in fabric dyeing. It uses fong's brand machines for high temperature and atmospheric dyeing.

In finishing section, it uses the world's latest technology TUBE-TEX machines from USA and SANTEX machine from Switzerland. It has both the facilities like open width and tubular finishing. Here, shade of every finished fabric lot is verified with Data Color Brand Color Matching System.

Fabric Dyeing Capacity: 35 Tons/day

2.11.1 In KCL there are mainly three types of dyeing machine

1. Atmospheric machine: these runs in atmospheric pressure.
2. High temperature & High Pressure (HTHP)
3. Airflow Dyeing machine

1. Atmospheric machine: These runs in atmospheric pressure.

Features:

- ❖ Removable full basket.
- ❖ Totally tangle free operation with help of angular design nozzle & fully floatable square pipe.
- ❖ Dye 30 to 500g./mtr. Sq. Fabrics (Polyester, Cotton, Woven & Knitted fabrics).
- ❖ Excellent & even Dyeing with low tension & perfect rinsing system.
- ❖ Capacity available 100kg. To 800 kg.
- ❖ Stirrer mechanism.
- ❖ Low tension volumetric soft nozzles.
- ❖ Fully dismantle design.
- ❖ Vessel made by SS 316L.
- ❖ Low temp. - Up to 90° C. (Max.)

2. High temperature & High Pressure (HTHP):

Main Parts of High Temperature & Pressure Dyeing Machine:

- ❖ Winch roller or Reel
- ❖ Heat Exchanger
- ❖ Nozzle
- ❖ Reserve Tank
- ❖ Chemical dosing tank
- ❖ Utility lines i.e. waterline, drain line, steam inlet etc.
- ❖ Controlling unit or Processor
- ❖ Fabric Painter
- ❖ Different types of motors & Valves

2.11.2 Finishing Section

Textile finishing, in a strict sense, is the term used for a series of processes to which all bleached, dyed, printed & certain grease fabrics are subjected before they are put to market. It's one of the most important operations in knit processing.

2.11.3 Effects of Finishing

- Easy care.
- Crease recovery.
- Dimensional stability
- Good abrasion resistance
- Improved tear strength
- Good sew ability

Knit fabrics require finishing process after dyeing. During dyeing all knit fabrics are dyed in tubular form. According to buyers' requirements dyed fabrics are finished in either tubular form or open-width form.

Depending on which finishing sections are separated into two sections— OPEN & TUBE section.

2.12 Apparel Section

2.12.1 Apparel Sewing

Having both quantitative and qualitative facilities to ensure tailoring excellence, the sewing floors of Knit Concern Group is capable of producing 170,000 pieces of garments per day. It has 4,500 brand machines of Pegasus, Brother, and Juki with automatic thread cutting, trimming, and sucking devices. It has some other special types of sewing machinery like PICOT, FAGOT, ZIGZAG, FEED-OFF-THE- ARM and ELASTIC INSERTING. To generate perfection, its sewing floors are under constant and continuous surveillance and quality monitoring system.

2.12.2 Process Flow Chart for Garments Sewing Department

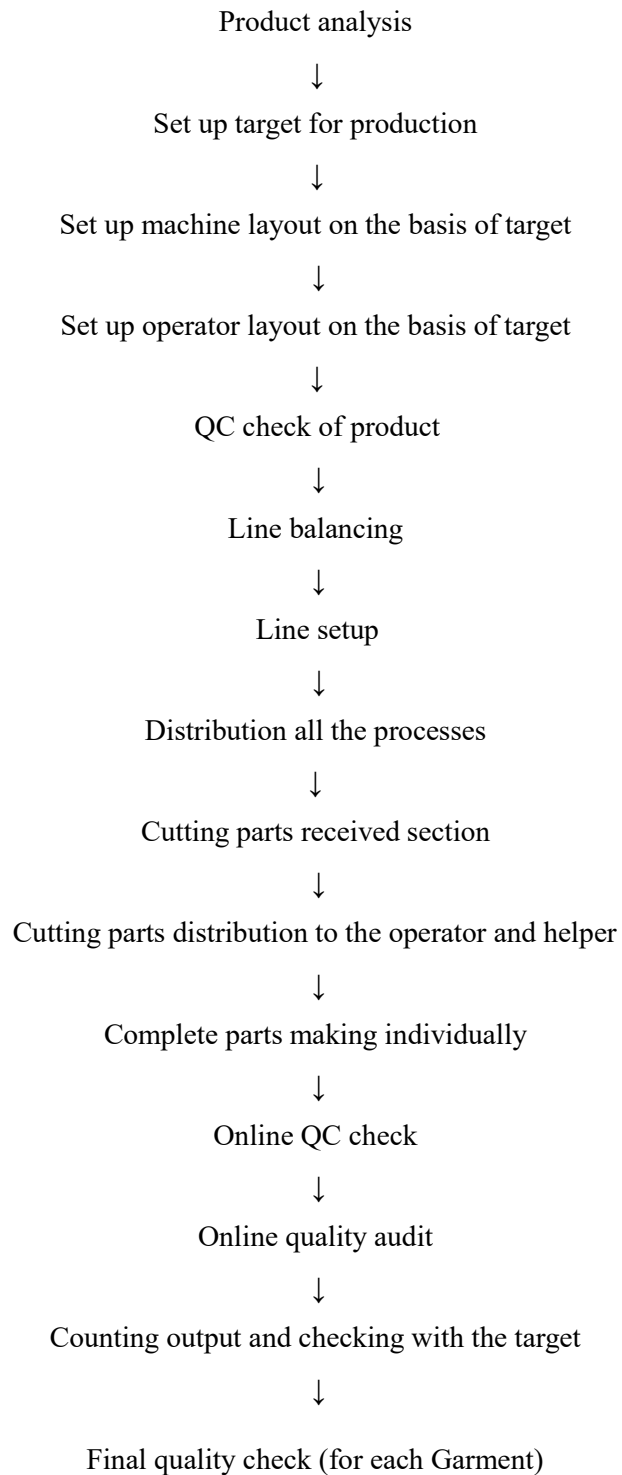


Fig 2.6: Flow Chart for Garments Sewing Department

2.12.3 Apparel Finishing

Stitched garments are finished in the finishing dept. The more major activities are

1. Thread Trimming:

Uncut and loose threads are trimmed by the helpers.

2. Checking garments:

All garments are checked at the finishing stage for visuals and measurement. Finishing checkers check the complete garment inside and out. Checking is done for garment detailing, such as care labeling, and trims.

3. Button attach and Butting holing:

Products those have trimming like button, snap button, eyelets are attached in finishing section.

4. Removing stains:

Stains and spots are found on garments. Spots are removed using a hand spot gun or by using a stain removing machine prior to pressing. Dust and stains can be removed by machine washing.

So, many times finishing department wash garments inside department.

5. Repair work and mending

Defective garments may need to repair for stitching and fabric defects. All repair activities are done in finishing department itself instead of sending defective garments to stitching department.

6. Ironing garments:

Garments are ironed using a steam iron. This is done to remove creases in the garment. For knitted garments measurements are set by steam press. Vacuum pressing tables are used for garment.

9. Preparation of packing list:

The packing in-charge prepares a packing list for the shipment. After packing is completed for an order, the finishing department informs the concerned merchant.

10. Internal shipment audits:

Quality department perform internal shipment audit in the finishing department. This audit is done prior to final inspection.

11. Documentation and reporting:

Like other departments, finishing department maintain production records for pressing, and packing

2.13 Merchandising

Merchandising is the department which mediates marketing and production departments. It is the methods, practices, and operations used to promote and sustain certain categories of commercial activity. It includes directing and overseeing the development of product line from start to finish. Marketing and merchandising department: A team of merchandisers and marketers work together under a profit controls head. Merchandisers handle the foreign buyers. The teams are made according to the buyers being handled.

Merchandiser

The person who is related in merchandising is called merchandiser. The merchandiser coordinates with the design team to effectively present the product or product line. He or she develops colors and specifications, and performs market research to determine the most effective ways to sell and promote the product. This person needs strong communication and negotiation skills and visual and analytical abilities. He or she also needs to be a creative and innovative thinker.

Types of Merchandising

Two type of merchandising done in garment exports

1. Marketing merchandising.
2. Product merchandising.

Marketing Merchandising

Main function of marketing Merchandising is

- Product Development
- Costing

Product Merchandising:

Product merchandising is done in the unit. This includes all the responsibilities from sourcing to finishing i.e. first sample onwards, the products merchandising work start and ends till shipment.

2.13.1 A Merchandisers Key Responsibility is as Follows

- Product Development
- Market and product Analysis
- Selling the concept
- Booking orders
- Confirming Deliveries
- Designing and Sampling
- Costing
- Raw Material Booking
- Flow Monitoring
- Production follow ups
- Payments follows
- Internal & external communication
- Sampling
- Accessories & trims Booking
- Preparing internal order sheets
- Preparing purchase orders
- Advising and assisting production

- Advising quality department about quality level
- Mediating production and quality departments
- Giving shipping instructions and following shipping,
- Taking responsibility for inspections and
- Following up the shipment.

2.13.2 New Product Development

New product development is a process which is designed to develop, test and consider the viability of products which are new to the market in order to ensure the Growth or survival of the organization. This process starts from idea generation and continue till pricing. Flow chart of new product development is given below.

2.13.3 Flow chart of New product Development

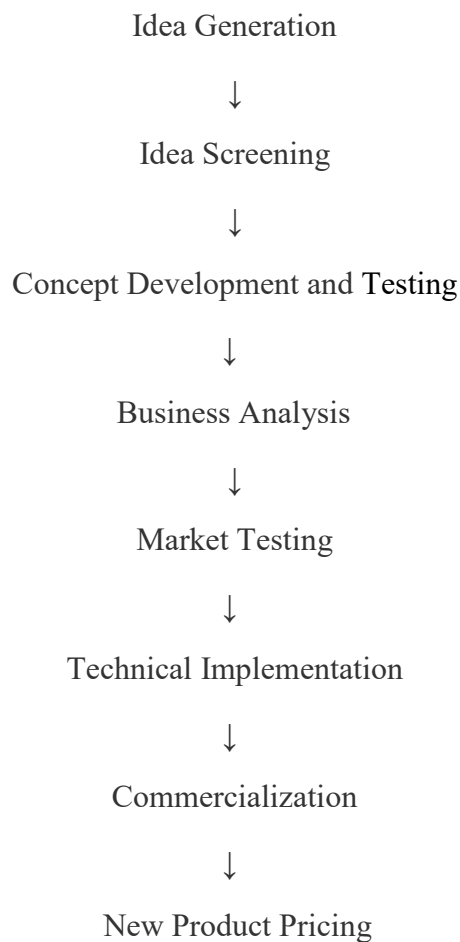


Fig 2.9: Flow Chart of New Product Development

2.13.4 New Product Development

New product development is a process which is designed to develop, test and consider the viability of products which are new to the market in order to ensure the Growth or survival of the organization. This process starts from idea generation and continue till pricing. Flow chart of new product development is given below.

2.13.5 Flow Chart of New Product Development

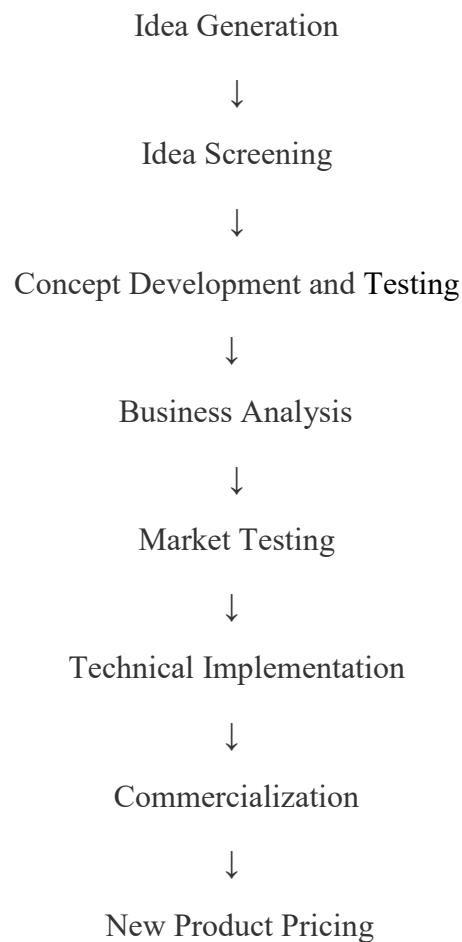


Fig 2.10: Flow Chart of New Product Development

2.13.6 Working Procedures of a Knit Merchandise

A merchandiser must have to maintain his order by the following two ways if he/ she want to deliver his order in timely. The first and most important matter is “Fabrics follow up” and the second one is “Order execution”.

Fabric follow up:

Fabric follow up contains the following issues:

1. Yarn booking and requisition,
2. Fabric booking,
3. Lab dip develop,
4. Local accessories booking,
5. Knitting follow up,
6. Lab dip approval,
7. Fabrics dyeing follow up and in-house.

Order execution:

The second and final important matter to send the shipment in timely is “Order execution”

Order execution contains the following features:

1. Pattern making,
2. Print and embroidery development,
3. Fit sample making,
4. Comments,
5. Cutting the fabric,
6. Print and embroidery,
7. Sewing,
8. Finishing and QC check,
9. Shipment.

Costing Of the Product:

The following points are considered for costing any dyed product in KNIT CONCERN LTD.

1. Total dyes & chemical cost
2. Total utility cost
3. Salary
4. Payment
5. Transport cost
6. Lunch
7. Entertainment cost
8. Miscellaneous cost
9. Government cash incentive

2.13.7 Cost Analyzing

Price of the Product: Generally price of product is determined by the required profit adding to the total expenses. So, Price of products= (Direct expenses + Indirect expenses + Factory Overhead) + Required profit.

Price Range of Different Products:

T-Shirt =

\$0.75 - \$4.50

/Pcs Polo

Shirt =\$2.00

- \$6.50 /Pcs

Kids Wear ==\$0.75- \$2.15 /Pcs

Costing of the Product:

Let price of yarn is \$ 3.00/ kg.

Process loss of yarn for knitting (10%) = \$0.30

Knitting fabric cost = \$3.30

Cost of dyes & chemicals = \$2.50 Process loss for

dyeing (12%) = \$0.30 Dyed fabric cost = \$ 6.10

Packing cost = \$0.05

Production cost of fabric=\$6. Fabric price (with 25% margin) =\$

Fabric consumption/ doz. =

$(\text{Body length} + \text{Sleeve length}) \times \text{Chest length} \times 2 \times \text{GSM} \times 12 / 10000000$

Garments specification:

Body length=78 cm

Sleeve length=33 cm

Chest length=62 cm

GSM=210

Fabric consumption/ doz. = $\{(78+33) \times 62 \times 2 \times 210 \times 12\} / 10000000 =$

3.469 kg

Fabric consumption/doze (with 10% wastage) = 3.816 kg

Body fabric cost / doz. = $\$(7.79 \times 3.816)$

= \$29.73

Cost of collar& cuff/doz = \$ 4.00

Cost of Trims=\$ 2.25

Cost of Trims (with 5% Process loss) = \$2.36

Production Cost of Garments/ doz=\$36.09

Garments Price/doz (with 25% Profit) =\$4

2.13.8 Marketing Strategy

Marketing strategy is a very important factors to sale the products to the buyer . If the marketing strategy is not so developed, it will be very hard to reach the goal . In case of garments marketing the dealings with the buyer is a very important factor.

In KNIT CONCERN GROUP mainly senior marketing officers, merchandiser & higher officials deal with the buyer. There are some fixed buyers of the industry. The buyers give their orders continuously all over the year . The marketing officers & the merchandisers communicate with the buying houses to collect the orders. By both side understanding the rate & the order quantity are fixed.

2.13.9 Buyer

KCL is 100 % export-oriented industry. All the goods produced in this industry are exported into various foreign countries. Name of the main buyers of this mill are given below:

- H&M
- OKAIDI
- CAMAIEU
- CARREFOUR
- JULES
- DECATHLON
- SPRIT
- QUICK SILVER
- BIZBEE
- KNIT LINE
- S.OLIVER
- AMS INTERNATIONAL
- RIPCURL
- BETTER BARCLAY

KNIT CONCERN LTD E.T.P.:

- Cost of the project is nearly 8, 00, 00,000 BDT.
- Fully Biological E.T.P.
- Manufactured by Water Treatment Technology (W.T.T.) of ITALY.
- 60 lac liter storage capacity
- 30 lac liter processing capacity

Plant Equipment:

1. Screen Brush
2. Lifting Pump
3. Storage and Homogenizing Tank
4. Neutralization
5. Distributor
6. Biological Oxidation
7. Sedimentation Feeding Tank
8. Sedimentation
9. Sludge Return Pump
10. Sludge Thickener
11. Blowers
12. Chemical Reagents
13. Flow Meter
14. Main Switch Board
15. Air Left
16. Sedimentation Feeding Tank
17. Sedimentation
18. Sludge Return Pump
19. Sludge Thickener
20. Blowers
21. Chemical Reagents
22. Flow Meter
23. Main Switch Board
24. Air Left

Different chemical used in E.T.P.:

- ✓ Sodium Hypo chloride :
- ✓ Sulfuric Acid
- ✓ Polyelectrolyte
- ✓ Nutrient salt
- ✓ De-colorant
- ✓ Anti-foam

Object of ETP:

- To remove coloring matter.
- To control PH.
- To maintain proper value of BOD and COD.

Manufacturer Company Name: Panta Rei Srl

Country of Origin: Italy

Capacity: 125 m

Process Sequence:

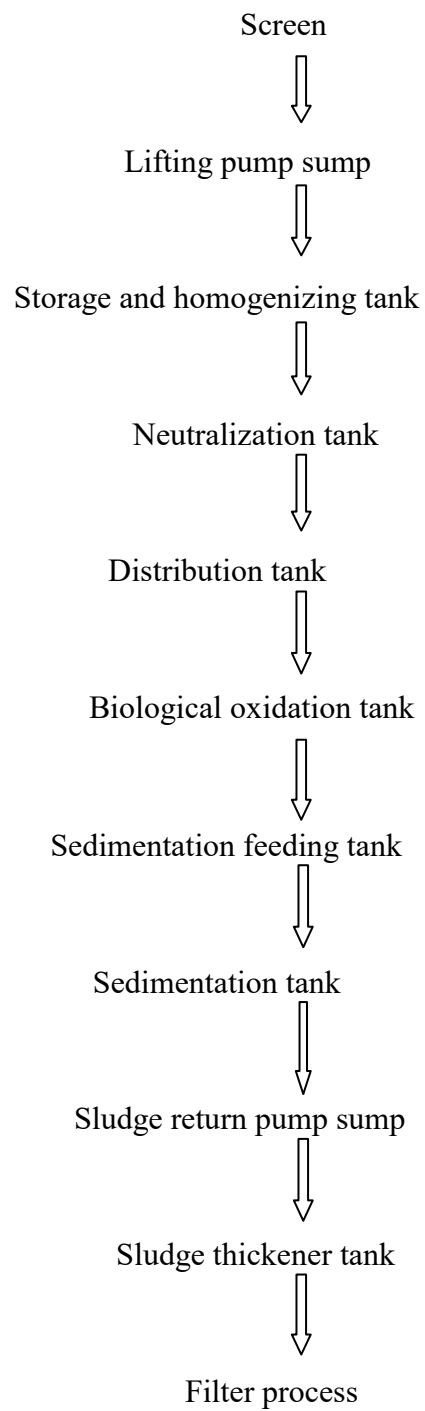


Fig 2.12: Process Sequence

Function of different chemicals

- ✓ 98% H₂SO₄ : Neutralize the water by controlling pH
It is auto dispensed in the neutralization tank.
- ✓ Polyelectrolyte : Used for sedimentation/sludge coagulation
It is used auto/manually in sludge thickener tank.
- ✓ Deodorant : Used for removing color.
It is used auto/manually in sludge thickener tank.
- ✓ Anti-foaming agent : Used for reducing/controlling foam.
It is used auto/manually in the oxidation tank.
- ✓ Sodium hypochlorite : It is used to killing harmful bacteria/insect.
It is used in the Biological Oxidation tank.
- ✓ Nutrients : when bacteria become weak it is added to a certain
quantity It is added in the
oxidation tank

Standard Testing Parameter

Table 2.2: Standard Testing Parameter

Parameter	Govt. Tolerance (PPM)	Inlet (before ETP)	Outlet (PPM)
BOD	50	281	23
COD	200	356	200
TDS	2100	3200	1580
TSS	150	204	36
ELECTRIC CONDUCTIVITY	1200	6430	3160
DO	4.5-8	0.1	4.6
CHLORIDE	600	-	>200
PHOSPHATE	8	2.6	2.2
NITRITE	50	.8	0.5
PH	6-9	10.3	8.1
TEMP	40-45	50	35

Cost of different utility:

- 1 unit electricity-2.60Tk
- 1 kg steam-0.50Tk
- 1Ton water-7.30Tk

Remarks:

For smooth running of a factory utilities are unavoidable. It has no direct use but help in the production so utility should have the proper characteristics to met the production parameter.

Chapter 3: Methodology

3.1 Introduction

The world economy relies heavily on the textile and knitwear industries, which are pillars in terms of economic growth, job creation, and international trade (Chowdhury et al., 2019). The Knit Concern Group has become a significant player in this rapidly evolving industry by setting itself apart with a focused approach to the production of knitwear and related goods. In the larger framework of the textile and knitwear industries, this thesis undertakes a thorough investigation of the Knit Concern Group.

3.2 Background of the study

The global textile and knitwear business is a crucial player in the economy, creating jobs and fostering economic growth (Hasan et al., 2016). The Knit Concern Group, a prominent player in this rapidly evolving industry, specializes in the production of knitwear and related goods. Its activities cover a range of phases in the textile supply chain, from locating raw materials to distributing completed goods (Şen, 2008).

With a wide range of products that serve both domestic and foreign markets, The Knit Concern Group has a significant impact on the industry. Their dedication to quality and innovation has made them a prominent player, making a significant contribution to the sector's expansion and sustainability (Today, 2013).

3.3 Objective

The goal of this study is to improve the Knit Concern Group's operations within the textile sector. Evaluating supply chain management, quality control, and manufacturing processes are among the goals of the investigation. One of the objectives of strategic improvement is to suggest industry-best practices-aligned, context-specific tactics. The goals of the evaluation include setting up KPIs, keeping an eye on implementation, and offering insightful commentary on the topic of operational excellence. The goal of the study is to offer succinct and useful suggestions for improving the Knit Concern Group's operations.

3.4 Literature Review

A major driver of economic growth and job opportunities, the textile sector is a vital component of world trade (Bhidé, 2022). This enormous industry includes a wide range of tasks, from the processing of raw materials to the creation of final goods. Comprehending the wider textile sector offers a fundamental comprehension of its importance and influence inside the Knit Concern Group. The Knit Concern Group is a major player in the knitwear

industry; hence its activities are intrinsically linked to the broader textile scene. This synopsis provides the background information needed to assess the group's responsibilities and difficulties in the ever-changing textile sector (Periyasamy & Periyasami, 2023).

A sizable portion of the textile industry, the knitwear sector is made up of important organizations and individuals who influence market dynamics. Among them is the Knit Concern Group, a significant organization with a broad range of products covering several knitwear categories (Anik, 2014). draw attention to how crucial these important figures are to advancing innovation and satisfying consumer wants. Important insights into market influence and industry trends can be gained by comprehending the competitive environment and the Knit Concern Group's strategic posture within the knitwear industry. (Azmeah & Nadvi, 2013).

The manufacture of knitwear is one aspect of textile manufacturing that encounters operational issues that affect quality and efficiency. Concerns about operational inefficiencies, quality control problems, and supply chain disruptions are common (Davis, 2022). These are industry-wide issues, not exclusive to any one organization. A thorough investigation of these issues is necessary for the Knit Concern Group in order to pinpoint particular problems and create focused remedies (E. 2023, October 2).

In the textile sector, improving operations is a never-ending goal. Best practices can be the foundation of strategies that are beneficial to organizations like the Knit Concern Group. In order to improve operational efficiency, (Lam & Postle, 2006). stress the need of process optimization, technology adoption, and personnel training. The Knit Concern Group can better tailor solutions to its own operational setting by examining the successful application of these methods in similar businesses (. Berg et al., 2021.)

Chapter 4 : Finding & Conclusion

4.1 Finding & Discussion

Area	Question's	Answer
Supply Chain management	What is the typical lead time for suppliers to deliver raw materials?	It takes 25 days or less for fabric that is made in-house at the factory; 10 days for accessories that are imported; and up to 40 days for the estimated time of arrival.
	Do different kinds of raw materials have different lead times?	The distinction lies in whether the materials come from manufacturers who are local suppliers or importers from countries like China, Turkey, India, or Pakistan.
	How frequently do vendors fulfill delivery obligations?	Suppliers make every effort to deliver on schedule because, in the event that they don't, they risk fines or having to offer a discount. However, there may be a 10-day delay owing to unforeseen circumstances such as natural disasters, war between Russia and Vietnam, or the release of goods from local C&F.
	How much of the raw materials that suppliers send you are flawed?	Consequently, prior to in-house the raw material fabric Initially, a 4-point inspection system is used, with 10% of accessories falling within the acceptable quality limit (AQL), and anything beyond 10% is rejected. In order to reduce rejections, suppliers already provide 10% more goods than needed, and merchandisers and procurement departments also order 5% more than needed. In the worst case, 5% of the goods may be flawed.

	How long does it typically take to complete an order and receive the product?	A typical order cycle consists of two or four distinct seasons, such as summer, spring, winter, and autumn.
	Does the order fulfillment process have any bottlenecks that require attention?	making timely orders and internal orders to ensure that the production line doesn't stop for lack of raw materials.
	In what way would you measure the degree of cooperation and correspondence with important vendors?	It's still a good communication technique in the best of circumstances.
quality control	What percentage of the knitted goods that the factory produces have defects?	A total of 5% defects, known as tolerance, are permitted. Being the best-Knit composite factory, we strive to accomplish it every time.
	What differences exist in product quality between various production lines or processes?	Knit concern carries necessities like undergarments. Knit goods like t-shirts, pants, and hoodies don't have many major manufacturing process or line quality issues, but lingerie, which is a critical item, does have some workmanship issues.
	How often do customers return items or file complaints about the quality of the products?	It is less than 1% because there are no returns if there is any difficulty accepting the knit discount.
	Do the kinds of problems that customers report follow any patterns or trends?	It's true that some issues are frequently brought up. When it comes to customer complaints about knit products, the composite factory has noticed certain patterns and trends, like fading colors, uneven sizing, and shoddy stitching. As a sign of its dedication to producing high-quality goods and satisfying customers, the factory is addressing these problems by taking preventative or corrective

		action.
manufacturing processes	What is the knit composite factory's average production output per machine?	Daily Production= 7000 kg Approximate daily production capacity= 10000 Kg So, monthly production= 7000*30 kg Monthly production capacity= 10000*30 kg Then, monthly production efficiency= $(7000*30*100)/(10000*30) = 70\%$
	What is the uptime (percentage of time) of manufacturing machines?	Typically, each shift has eight hours of uptime per day. It operates in two shifts a day, depending on order rush. The remaining time is spent relaxing.
	To what extent does the cost of production change between batches or production runs?	Production varies depending on the item. For example, lingerie items require precise workmanship and require a lot of raw materials, particularly fabric, which makes them expensive. Examples of these items are long pants and hoodies. Since fabric makes up 90% of all clothing, item costs also vary depending on the type of fabric.
	To what extent are machinery and labor resources used effectively in the manufacturing processes?	Being a well-known factory, 100% of the labor and machine resources are used in the manufacturing processes during the seasons when production for winter orders is required. It reduces to a maximum of 70% efficiency during the dreary season.

4.2 Department wise Finding

SI. Section/Area	No. Days	Get to know about
Knitting	2	Mapping the Knitting floor Layout, Get to know about Knitting Machineries, In-Depth Knowledge about Knit fabrics, Defects of knit fabrics
Dyeing	2	Get to know about: Dyeing Machineries, Dye bath preparation, Dyeing Recipe
Washing	2	Washing process, Washing recipe
Sample	2	Sampling Sequences,
Cutting, CAD & CAM	4	Automatic Cutting , Semi-automatic cutting , Manual Cutting technics
Sewing	6	Sewing line layout , Sewing process , Sewing Machineries
Finishing	4	Finishing technics, After finishing inspection, Finishing to dispatch
Merchandising	3	Order receiving, Sample developming ,Procurement supply chain management Production Excecution , Process shipment
I.E & Planning	3	In line Production Execution , Daily Production Target Achieve, Monthly Production target achieve , Allocating line for production

4.3 Conclusion

Industrial training bridges the knowledge gap between theory and practice, which makes it a crucial component of textile education. Without a doubt, this industrial training has been very helpful to me in learning about textile technology, industrial management, machinery, production processes, and how to survive in this industrial world. I learned that Knit Concern is a contemporary, export-focused knit composite industry during my two months as an intern there.

Due to its superior products, the industry has already established a solid reputation in international markets. They have a state-of-the-art, fully furnished textile testing laboratory. It has been rare for us to witness many poor dyeing jobs during our training. If there was an issue, it was promptly resolved with the assistance of knowledgeable and competent labor. They employed high-quality chemicals, dyes, and yarn in their manufacturing. The management and administration are efficiently run. The mill is equipped with everything needed to provide 24-hour, convenient support for production. I consider myself extremely fortunate to have had the opportunity to finish my internship in this factory.

References

- Berg, A., Chhaparia, H., Hedrich, S., & Magnus, K. H. (2021, March 25). *What's next for Bangladesh's garment industry, after a decade of growth?* McKinsey & Company. <https://www.mckinsey.com/industries/retail/our-insights/whats-next-for-bangladeshs-garment-industry-after-a-decade-of-growth>
- Today, T. (2018, April 29). *Challenges of Bangladesh knit sector and the way out*. Textile News, Apparel News, RMG News, Fashion Trends. <https://www.textiletoday.com.bd/open-forum-discussion-challenges-knit-sector-held-dhaka>
- Lam, J., & Postle, R. (2006, July 1). *Textile and apparel supply chain management in Hong Kong*. International Journal of Clothing Science and Technology. <https://doi.org/10.1108/09556220610668491>
- E. (2023, October 2). *Challenges and opportunities in the textile industry*. Escarre. <https://www.escarre.com/en/overcome-challenges-textile-industry/>
- Davis, R. (2022, February 18). *Rachael Davis*. <https://www.textileworld.com/textile-world/features/2022/02/supply-chain-challenges/>
- Azmeh, S., & Nadvi, K. (2013, November 1). *'Greater Chinese' Global Production Networks in the Middle East: The Rise of the Jordanian Garment Industry*. Development and Change. <https://doi.org/10.1111/dech.12065>
- Anik, F. (2014, May 25). *Knit Concern Group Industrial Attachment*. Primeasia. https://www.academia.edu/6024119/Knit_Concern_Group_Industrial_Attachment
- Periyasamy, A. P., & Periyasami, S. (2023, September 8). *Rise of digital fashion and metaverse: influence on sustainability*. Digital Economy and Sustainable Development. <https://doi.org/10.1007/s44265-023-00016-z>
- Bhidé, A. (2022, April 19). *The Questions Every Entrepreneur Must Answer*. Harvard Business Review. <https://hbr.org/1996/11/the-questions-every-entrepreneur-must-answer>
- Today, T. (2013, January 1). *FONG'S One-stop GREEN innovation; for Knit Concern*. Textile News, Apparel News, RMG News, Fashion Trends. <https://www.textiletoday.com.bd/fongs-one-stop-green-innovation-for-knit-concern>
- Şen, A. (2008, August 1). *The US fashion industry: A supply chain review*. International Journal of Production Economics. <https://doi.org/10.1016/j.ijpe.2007.05.022>
- Hasan, K. M. F., Mia, M. S., A., & Ullah, M. S. (2016, June 1). *Role of Textile and Clothing Industries in the Growth and Development of Trade & Business Strategies of. . .* ResearchGate. <https://doi.org/10.5923/j.textile.20160503.01>
- Chowdhury, N. (2021, July 22). *Internship report on Knit Concern Limited*. Mbstu. https://www.academia.edu/es/50180301/Internship_report_on_Knit_Concern_Limited