

**COMPREHENSIVE STUDY ON KNIT GARMENTS MERCHANDISING IN
APPAREL INDUSTRY**

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**This Report Presented in partial Fulfillment of the requirements for the
degree of Bachelor of Science in Textile Engineering**

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This project title “Comprehensive Study On Knit Garments Merchandising In Apparel Industry” submitted by Md. Fayzur Rahman and Md. Mafuzul Gani and Md.Kamruzzaman to the Department of Textile engineering, Daffodil international university, has been accepted as satisfactory for the partial Fulfillment of the requirements for the degree of Bachelor of Science in Textile Engineering and approved as to its style and contents. This presentation has been held on 9 October, 2011.

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DECLARATION

We hereby declare that, this project has been done by under the supervision of Md.Abdullah Al-Mamun, Assistant Professor, Department of TE, Daffodil international university. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ACKNOWLEDGEMENT

By the grace of almighty Allah we have completed the project report “Study on knit garments merchandizing in apparel industry” successfully.

Our special thanks to our supervisor Abdullah-Al Mamun Assistant Professor, Dept.of textile engineering, Daffodil International University, who motivated, encouraged and helped us in preparing the report.

We like to convey our thanks to Md.Mafuzur Rahman for the cordial and friendly support during the initial work. Special thanks to our respected Department Head Professor Dr.Mahbubul Haque for his continuous encouragement and valuable suggestions.

Our cordial thanks to H.R.Textile Mills Ltd as they helped us in understanding the practical processes.

While preparing the report we have taken help from various references so our cordial thanks to them. Finally we hope that the report will help in understanding the “Study on knit garments merchandizing” in apparel industry in a clear and concise way.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

Merchandising is that part of marketing that brings together a series of marketing techniques as well as product promotion techniques in shops. Synthetically we can call merchandising the art of selling. This syntagme refers to aspects like the interior and exterior design of a shop, the merchandise Display as well as the practiced selling methods and the services offered.

Keywords

Merchandising, product promotion, marketing techniques, shopping services the term “merchandising” was taken over from English and according to the definition given by well known specialists it stands for “that part of marketing which encompasses the commercial techniques which allow the presentation in the best material and psychological conditions of the product or Service intended to be sold.” In other words, “merchandising” can also be described as having the perfect products, at the perfect price, in the perfect place, at the perfect time thus determining the perfect sale through the perfect approach for the target Customers of the shop. Synthetically, we can say that “merchandising” is the art of selling based On the relationship between the customer and the seller which implies the Utilization of very numerous and at the same time very diverse techniques. Selling is a complex act with multiple aspects: provisioning, exposition, Information, which is carried on in well dimensioned and appropriately equipped Commercial spaces, the commercial employees being asked to assure the success of this demanding operation by underlying the complex qualities of the merchandise.

Letter of transmittal

06 October 2011

Md. Abdullah-Al Mamun

Supervising Teacher, Dept. of textile engineering,

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Re: Letter of transmittal.

Dear Sir,

We are very glad to submit this project on “Study on the activities of a merchandiser in knit garments industry”. That you have assigned to us. We tried to put our best effort make this project properly according to your instruction.

We hope that, you would kindly consider any mistake on our part in preparing this assignment.

Sincerely yours,

1. Md.Fayzur Rahman	ID- 073-23-678
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Supervising teacher’s sign

Md. Abdullah Al Mamun

CONTENTS

CHAPTER:1.0 INTRODUCTION.....	8
1.1: History of Bangladesh Garmens Industry.....	8
CHAPTER :2. LITERATURE REVIEW.....	13
2.1. KNIT FABRIC:.....	13
2.2. FABRIC TYPES	13
2.3. Most Common Knit Readymade Garments:.....	13
2.4. Thesis Location:	13
2.5. Garments Process Flowchart:	14
CHAPTER:3. MERCHANDISING	15-46
3.1. Definition of Merchandiser:.....	15
3.2. Function of A Merchandiser:	16
3.3. Process flow chart for The Merchandising	16
3.4. Qualities of A Merchandiser:	18
3.5. Letter of credit(L/C) :.....	20
3.6. Types of Letter of credit(L/C):	21
3.7. Care Instructions	25
3.8. Final Inspection:.....	32
3.9. Specimen local accessories list	32
3.10. Trims & Accessories:.....	35
3.11. Approx Sewing Thread Consumption Of Different Items	43
3.12. Machine Wise Sewing Thread Consumption/Inch	43
3.13. Fabric Consumption Calculation For 1 Dozen Men's T-Shirt:	44
3.14. Consumption Calculation For 1 Dozen Polo Shirt	45
3.15. Consumption Calculation For 1 Dozen Trousers:	46
CHAPTER :4. RESULT AND DISCUSSION.....	47-48
4.1. Costing of 1 Dozen T- Shirt:.....	47
4.2. Costing of 1 Dozen Polo Shirt:	47
4.3. Costing of 1 Dozen Trousers:	48
CHAPTER:5. SEA FREIGHT AND AIR FREIGHT.....	49-51
CHAPTER:6.PRINTING.....	52-58
CHAPTER:7.CONCLUSION.....	59
CHAPTER:8.APPENDIX.....	60
CHAPTER:9.REFERENCE	61

1.0 INTRODUCTION:

Textiles and clothing will always be essential goods for human beings. Spinning and weaving were the main activities that drove the Industrial Revolution in the 18th century. Since then the textile industry has been a leading industry in the initial phase of industrialization in many countries in different periods of time in the world. Bangladesh is an important producer & exporter of knit RMG product. There are about 4500-5000 garments factories running in Bangladesh. Growth of garments factories started in Bangladesh around 1980. But now nearly 82% of our foreign currency is earned from RMG export. At present Bangladesh is producing & exporting more than 60 items of garments. Garments are exported to USA, Canada, Japan, Australia, Middle East and many other countries in the world. Cheapest labor cost is the biggest advantage for Bangladeshi garments producers & exporters.

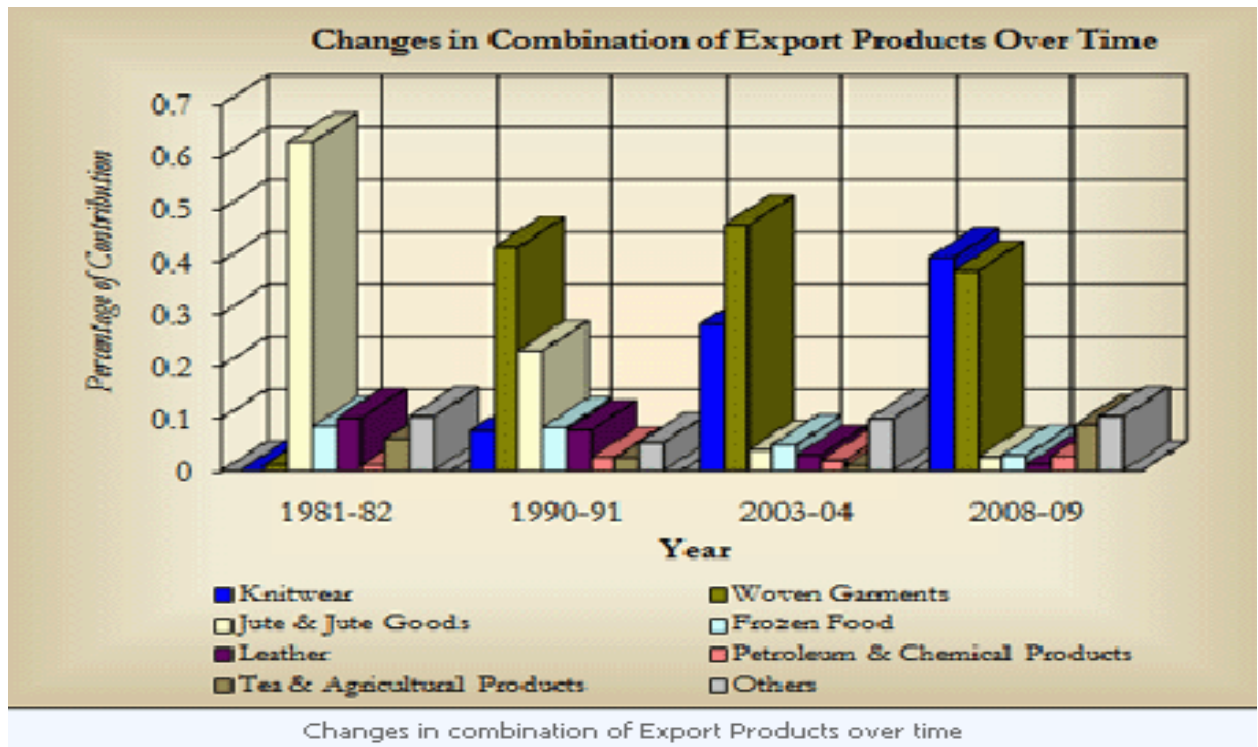
Merchandising is one of the most important parts for garments trade. Without merchandising this trade never be fulfill. Merchandiser deals or handles all the things from buyer to production. He is the centre for all the tasks. After getting an order, merchandiser calculate all the things, what he need to complete this order & make a nice plan by which he can do the shipment in time with buyer's requirement. In factory level, merchandiser makes all the orders for accessories needs for an order like; fabric need, sewing thread, button, washing if necessary, carton, polybag, shipment arrangement etc. Actually merchandiser make looks on the whole progress.

Practical Knowledge is very much essential for the education of textile engineering and technology. Practical Knowledge makes us capable and perfect to apply theoretical knowledge in practical life.

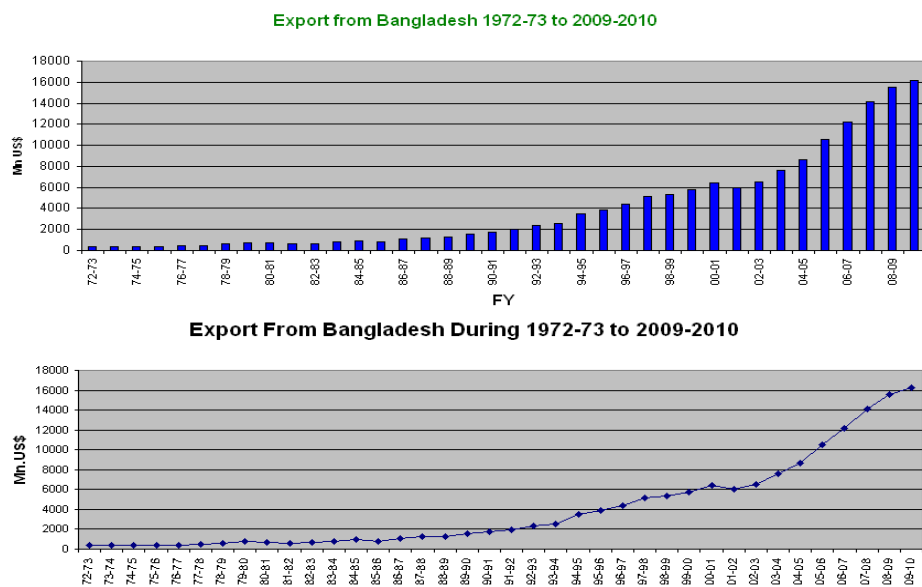
We acquire knowledge on knit Garments Merchandising, Garments production, Quality control, Operation, Marker making, Cutting &Finishing sector. We tried our best to learn more about this Project that will help our future practical life.

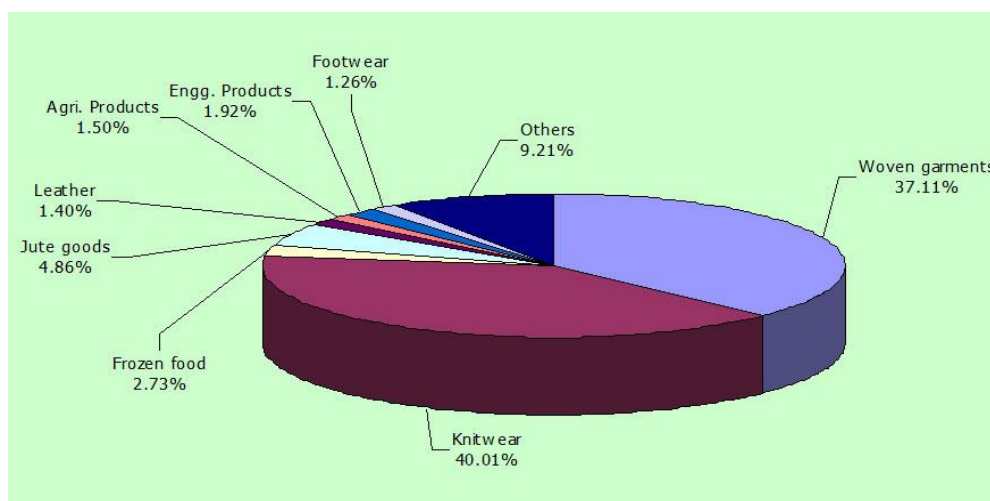
1.1: HISTORY OF BANGLADESH GARMENTS INDUSTRY:

The RMG business started in Bangladesh in the 70s but it was then merely effort, the first consignment of knitwear export as made in 1973 and the first consignment of woven garments was made in 1977. In 1981-82 the contribution of woven garments in the total export was 1.10%. Afterwards it is a story of sustained success for the Bangladesh RMG sectors. The knitwear sector has grown over the years in geometric progression and become the prime driving force of Bangladesh's export earnings. Within a decade the contribution of woven to the export basket became 42.83% (1990-1991) and the knitwear sector's contribution 41.79% to national export earnings at the end of FY 2008-09(July-April).



The entrepreneurs of the knit sector stepped forward with their expertise in the late 80s. With their earnest efforts they were able to export US\$14.84 million in 1990-90. Out of this, US\$ 2.02 million was exported to US. The trend continued in the knit sector because of the market access opportunities provided to the LDCs under the generalized systems of preference (GSP) benefit.





This is the rejuvenated beginning of the epic story of Bangladesh knitwear sector that in true sense has been possible due to massive industrialization in a sustainable way with effect on all probable human development aspects which is the encouraging part of the story. The growth of knitwear sector is increasing at an increasing rate. The cumulative average growth rate of the sector is 20%, and it is continuously grabbing more portions in the export pie of Bangladesh. This is mainly attributed to the facilities provided under the EC GSP and ROO. The knitwear sector is heavily driven by the favorable policies and took the opportunity to develop a strong backward linkage for the sector.

Bangladesh's RMG exports to world, calendar year 2009 & 2010

Value in Million US\$

Month	ALL COUNTRIES								
	Woven (MN US\$)		Growth%	Knit (MN US\$)		Growth%	Total (Woven+Knit)		Growth%
	2009	2010		2009	2010		2009	2010	
January	584.24	570.26	-2.39	562.94	535.06	-4.95	1147.18	1105.32	-3.65
February	532.57	560.46	5.24	466.87	481.85	3.21	999.44	1042.31	4.29
March	542.13	615.74	13.58	480.61	552.81	15.02	1022.74	1168.55	14.26
April	437.79	505.9	15.56	479.96	545.38	13.63	917.75	1051.28	14.55
May	493.41	555.98	12.68	578.59	632.32	9.29	1072.00	1188.3	10.85
June	522.62	622.43	19.10	619.66	727.93	17.47	1142.28	1350.36	18.22
July	521.78	671.28	28.65	651.85	798.66	22.52	1173.63	1469.94	25.25
August	490.09	645.39	31.69	552.46	790.06	43.01	1042.55	1435.45	37.69
September	364.76	473.57	29.83	449.63	592.56	31.79	814.39	1066.13	30.91
October	307.76	559.27	81.72	440.46	706.75	60.46	748.22	1266.02	69.20
November	439.78	534.87	21.62	487.27	644.94	32.36	927.05	1179.81	27.26
December	458.49	752.68	64.16	426.27	778.95	82.74	884.76	1531.63	73.11
Total:	5695.42	7067.83	24.10	6196.57	7787.27	25.67	11891.99	14855.10	24.92

BANGLADESH'S RMG EXPORTS TO WORLD, JULY-DECEMBER of 2009 & 2010:

Value in Million US\$

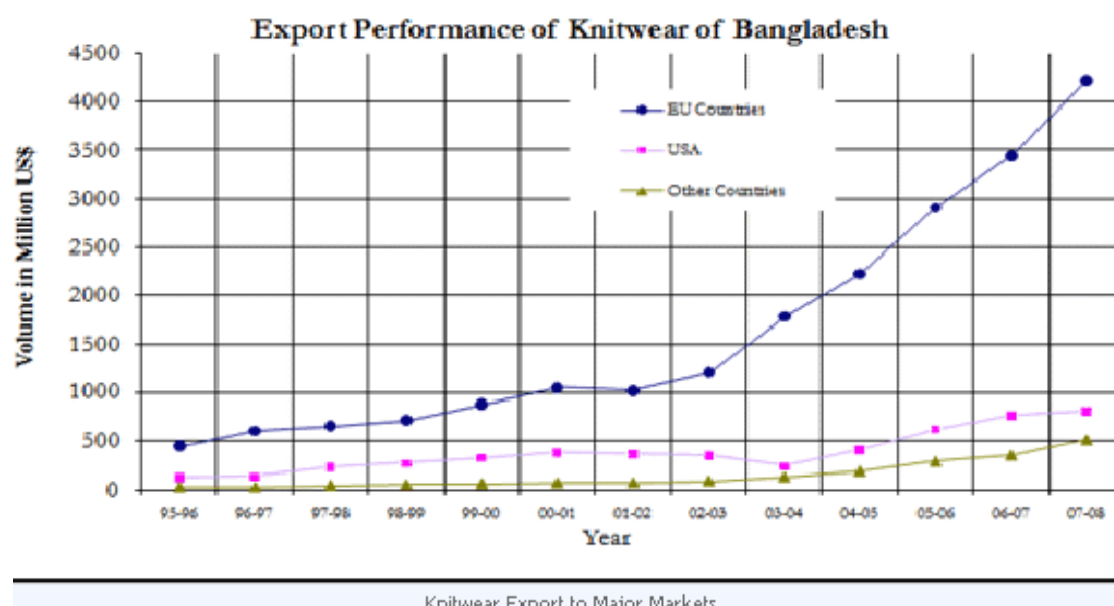
Month	ALL COUNTRIES								
	Woven (MN US\$)		Growth%	Knit (MN US\$)		Growth%	Total (Woven+Knit)		Growth%
	2009	2010		2009	2010		2009	2010	
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Total:	2582.79	3637.06	40.82	3007.78	4311.92	43.36	5590.57	7948.98	42.19

BANGLADESH'S RMG EXPORTS TO WORLD, DECEMBER of 2009 & 2010

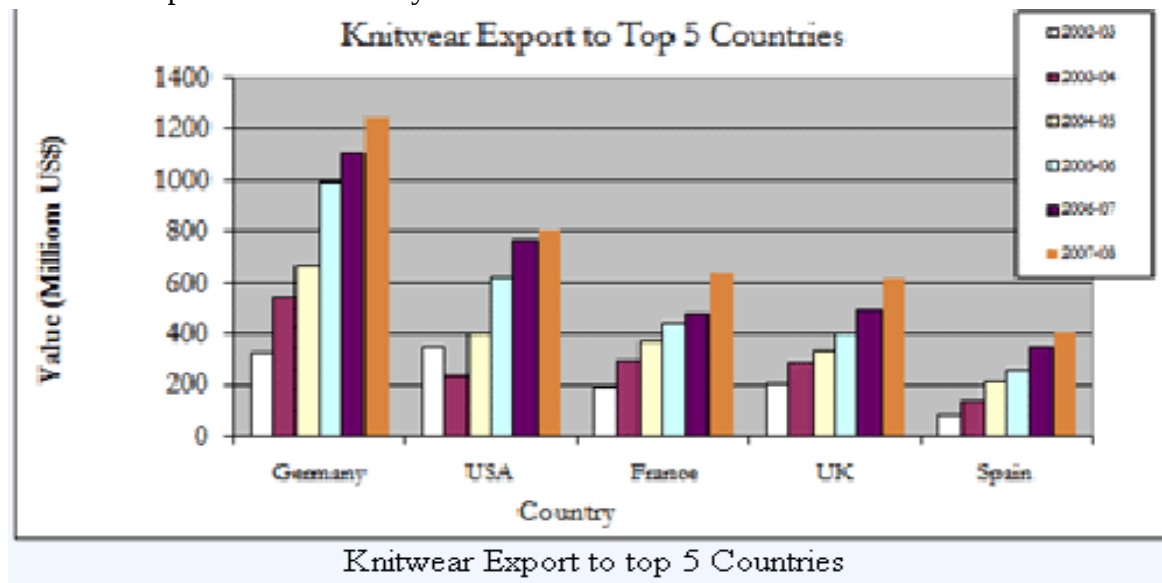
Value in Million US\$

Month	ALL COUNTRIES								
	Woven (MN US\$)		Growth%	Knit (MN US\$)		Growth%	Total (Woven+Knit)		Growth%
	2009	2010		2009	2010		2009	2010	
December	458.49	752.68	64.16	426.27	778.95	82.74	884.76	1531.63	73.11

The EU is the main export region of Bangladeshi knitwear constituting 76% (us\$4.2 billion) of total knitwear export followed by the USA (14.59%, i.e.US\$807 million) in the year 2007-2008. This is mainly attributed to the facilities provided under the EC GSP and favorable ROO. The knitwear sector is heavily driven by these favorable policies and took the opportunity to develop a strong backward linkage for the sector where the value addition is about 75% .The two-stage transformation requirement of ROO in 1999 boosted market penetration in the EU further, it contributed a growth of 101.19% since 2000-01.

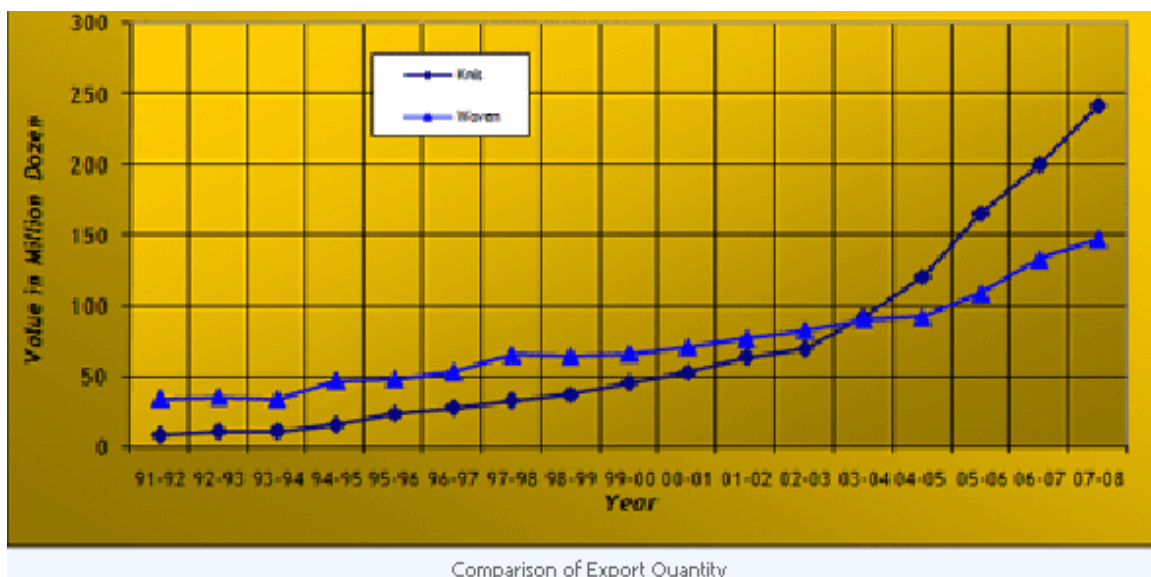


Bangladesh RMG sector has successfully passed some critical tests and is now sailing with masts: knit and woven. The sub-sector is now in healthy competition among them to take the role of leadership within the country.



In FY 2003-04, knitwear for the first time exported with 91.6 million dozens. Knitwear is still leading in terms of quantity exported and is widening the gap day by day. Export quantity of knitwear items increased to 241.59 million dozens which is 163.74% higher than the year 2003-04 to 2007-08. On the month of December of the FY s 2008-2009, total knitwear export was 146.5 million dozens which is 30.58 million dozens higher than the same period of last year.

Comparison of Export Quantity



Bangladesh knitwear is performing a well increase in terms of quantity which is a clear indication of increase of capacity in this sector. In the year 2007-08, the contribution of woven wear to the export earning was 36.17% and in knitwear was 38.97% .In the current year, the performance of both the sector are as follows:

- Knitwear export US\$ 5231.01 million FY 2008-09(July-April)
- Woven export US\$4902.48 million FY 2008-09 (July- April)

Therefore the contribution of knitwear in national export increase is 57.82%.

2. LITERATURE REVIEW

2.1: Knit fabric:

A structure produced by interloping one or more ends of yarn or comparable material.

2.2: Fabric types

- WEFT KNITTED FABRIC
 - ❖ Single Jersey:
 - Single jersey plain
 - Pique
 - Locoest
 - Fleece
 - ❖ Double Jersey:
 - RIB:
 -  1x1 Rib Or Plain Rib
 -  (2x2)Rib
 -  (2x1)Rib
 -  (5x5)Rib
 -  (5x3)Rib
 -  Waffle
 -  Flat Back Rib
 - ❖ Pointal
 - INTERLOCK:
 -  Plain Interlock
 -  Mesh
 -  Thermal
 -  Drop Needle

2.3: Most common knit readymade garments:

The Garments section consumes fabrics entirely from its own source. The Garments Section has the capacity of producing various Knit Garments as follows:

-  T-Shirts(Long Sleeve & Short Sleeve)
-  Polo Shirts
-  Ladies Wear
-  Sports Wear
-  Tank Tops(Gents& Ladies)
-  Kids Wear
-  Sackets
-  Ladies Maxi
-  Trousers etc.

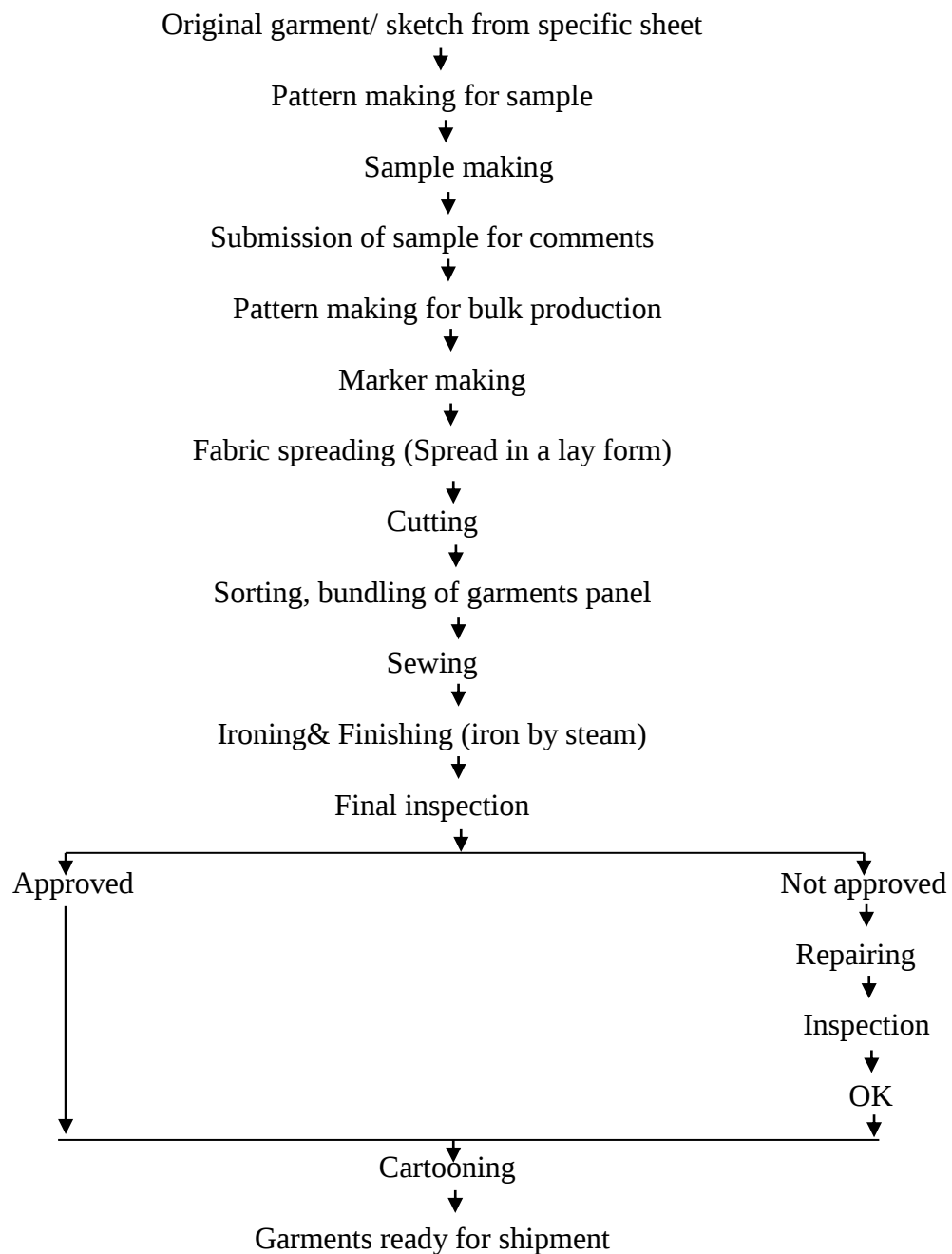
2.4 Thesis location:

H.R Textile Mills Ltd (Pride Group)

Most common buyers:

1. ZARA (US)
2. Marks & Spencer (UK)
3. TERA MATIC (US)
4. BERSHKA (US)
5. S.Oliver (Germany)
6. G-Star(Netherland)
7. Decathlon (US)
8. Esprit (Germany).

2.5: GARMENTS PROCESS FLOWCHART:



3. MERCHANDISING:

Effects of merchandising:

Merchandising is one of the most important parts for garments trade. Without merchandising this trade never be fulfill. Merchandiser deals or handles all the things from buyer to production. He is the centre for all the tasks. After getting an order, merchandiser calculate all the things, what he need to complete this order & make a nice plan by which he can do the shipment in time with buyer's requirement. In factory level, merchandiser makes all the orders for accessories needs for an order like; fabric need, sewing thread, button, washing if necessary, carton, polybag, shipment arrangement etc. Actually merchandiser make looks on the whole progress. Normally, the production people are always try to do work in delay, thus many trouble can come for the shipment. But, merchandiser always makes a good follow-up to work in time with right quantity & right quality. In the other hand, merchandiser deals with the buyer's about order approval & comments.

At last, we can say that, merchandising is the heart of garments trade. Without this garments trade is valueless. So this part is more important in our future life.

3.1. Definition of merchandiser:

The main role of a garments merchandiser is to collect garments export order (export L/C), produce the garments, export the garments and earn profit, to perform those functions successfully needs lot of knowledge, experience & tremendous effort for a merchandiser. The term merchandising is defined as follows:

The man, who is involved in Garments trade, is a merchandiser. The function of a Merchandiser is known Merchandising. The term Merchandising has been derived from the word Merchandise which means goods that is bought and sold.

Merchandising as commonly used in marketing means maximizing Merchandise sales using product selection ,design ,packaging, pricing and product display that stimulates consumers to spend more .This includes disciplines in pricing and discounting physical presentation of products and displays and the decisions about which products should be presented to which customers at what time.

MERCHANDISER IS AN ORGANIZER:

Merchandiser is he or she, who builds up a relationship with the buyer and acts as a seller. He plays a vital role in an organization in a sense that he bears more responsibility than other in regards to execution of an order. The responsibility which he bears on the job is as follows:

1. He represents as a buyer to a factory.
2. He represents as a seller to the buyers.
3. he inspects quality as a buyer(from the buyer's point of view)

4. He or she negotiates a price for the sellers
5. He looks at deal from sellers point of view
6. He looks into the business to flourish more in the future
7. He or she tries to offer the deal more competitive without compromising the quality
8. His or her object is to satisfy the buyers to progress more of the future business
9. His or her aim is to impress the buyer by means of:
 1. Right products
 2. Right qualities
 3. Right quantities
 4. Right time &
 5. Honesty.

3.2: FUNCTION OF THE MERCHANDISER:

1. Procuring of Garments order:
 - Receiving order inquiry
 - Garments Costing
 - Garments Price quotation
 - Price bargaining
 - Order confirm
 - Confirm schedule.
2. Procuring of raw materials:
 - Preparation and calculation of fabric and accessories required.
 - Selection of appropriate suppliers, possible date of arrival in the factory
 - Costing and payments
 - Sending standard specification of desired materials sending procuring information to the stores
3. Production of Garments:
 - To know order quantity, shipment date, Garments production planning
 - Pre-shipment inspection schedule final inspection schedule
4. Shipment of Garments:
 - Mode of transportation (sea, air.....),
 - Shipping lines (own/buyer),
 - Export documents
5. Receiving of payments for Garments

RESPONSIBILITIES OF MERCHANDISER:

Responsibilities of Junior Merchandiser (In a factory):

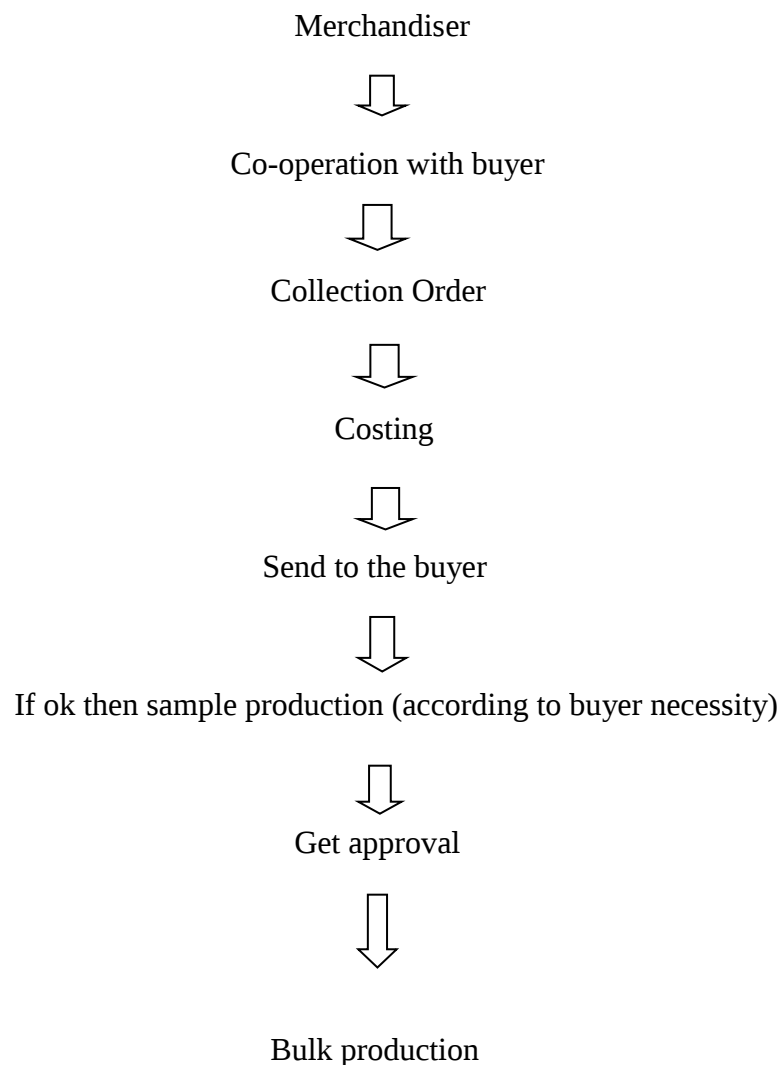
- Main task is "production monitoring"
- Collect "inventory report" from store
- Swatch making & getting approval from buyer
- Arrange preproduction meeting in order to prepare a schedule for smooth production
- Place order to different production unit

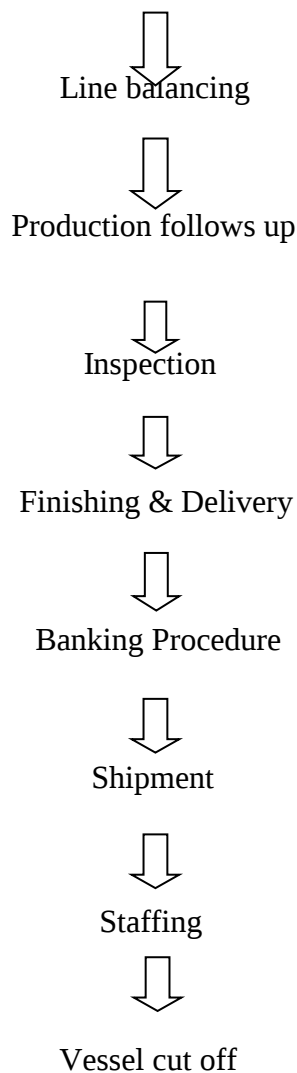
- Collect "Daily Production Report & Daily Quality Report"
- If any shortage in store, arrange locally.
- Arrange final inspection

Responsibilities of Senior Merchandiser (In a factory):

- Sample development
- Price negotiation
- L/C opening
- Opening summery
- Sourcing
- Material collection
- Production planning
- Production monitoring
- Quality assurance
- Arrange final inspection
- Arrange shipment

3.3. PROCESS FLOWCHART FOR MERCHANDISING:





3.4. QUALITIES OF A MERCHANDISER:

- Good knowledge in English, Mathematics, Computer literacy and e-mails internet.
- Good knowledge about fiber, yarn, fabric, dyeing, printing, finishing, dyes, color fastness, garments production, etc.
- Clear conception of the usual potential quality problems in the garments manufacturing.
- Good knowledge of the usual raw materials inspection systems & garments inspection system
- Knowledge of the quota system used in each of the production countries, duty rates, custom regulation, shipping and banking documentation etc.
- Right consumption knowledge of various goods
- Costing knowledge of raw materials
- Order getting ability
- Excellent power of motivation to improve public relations.
- Sincere& responsible
- Hard worker

Negotiation with buyers:

The most critical work is the procurement of garment export order. Normally garment export order is found from the potential garment importers called garment buyer. Anybody wants to collect garments export order, should be able to convince the buyer. When the buyer is convinced about garment production, garments quality, garments costing and shipment ability of a garments exporter, he or she can think about issuing garments export order.

Without clear confidence among buyer & exporter from both sides, may be a risky business deal. If a garment exporter can continuously deal with only three or four buyer with buyer's satisfaction, it will be sufficient enough to run garment production & garment export business smoothly round the year.

A successful negotiation outcome does not generally occur through luck, but by following a clear process. The process reflects the different levels of knowledge of the subject of negotiation, various parties and the way they communicate at various stages in the negotiation. The following is an outline of steps essential to effective negotiation:

1. Researching the needs of both parties:

The greater the knowledge a buyer has of their own and the supplier's requirements, the better able they are to construct an acceptable solution. The buyer must be clear about both the department mark-up to be placed on the product cost and the intended retail selling price so that she or he can judge the viability of the supplier's products.

2. Preparation:

Effective preparation is also vital to successful communication. It is essential that the buyer also has identified the maximum and minimum positions that she will accept for a range of factors including:

- product price
- Order size, lead- time.

3. Offer:

The buyer and supplier can make specific proposals to set the boundaries of the negotiation

4. Discussion:

2.10: Type There will be areas on which one side can move than more than the other and vice versa. It is important for the buyer to make a note of which ones provide the greatest and least opportunities for flexibility.

After receiving the garment export order, without wasting any time, it is essential to prepare a schedule for the jobs to be done for safe execution of the export order. The main jobs for the execution of an export order are as follows:

- Details analysis of export L/C
- Preparation of a time schedule for the export L/C

- Collection of fabric& accessories for the garment to be exported[source, quantity of the items, cost of the items, receiving data of the items, quality& quantity, Inspection of the items, etc]
- Distribution of responsibilities for the jobs & duties
- Production plan
- Inspection of the produced garments for quality, quantity, packing & other requirements of the buyer.
- Preparation of banking & shipment formalities
- Continuous follow-up progress
- Others.

3.5. LETTER OF CREDIT (L/C):

Business transactions usually begin with a purchase order placed by a buyer with a seller. It is very easy to understand, the order, or fax received from the buyer, is not something very reliable and secure. Although the order should be treated as an agreement binding both parties, the buyer and the seller, it is not a guarantee or an instruction for the seller to use to obtain payment for the merchandise shipped. For this reason, the “L/C” comes into the picture.

Letters of credit (L/C):

Letters of credit (L/C) is in general a conditional document extended by the bank in connection with presentation of export value. L/C plays a very dominant role in this matter. On receipt of this document from the buyer, the exporters become sure that they would obtain foreign currency after the peaceful shipment of the consignment directed by the buyer in the L/C. and for monetary transactions in this connection the negotiation banks stand as a symbol of surety for the exporters. Negotiating bank act on behalf of the exporter and is held liable or responsible for realization of exporter’s money from the L/C opening bank.

A credit may be advised to a beneficiary through another bank (the advising bank) without engagement on the part of the advising bank, but that bank shall take reasonable care to check the apparent authenticity of the credit which it advises.

All credit will always clearly indicate whether they are available by sight payment, by differed payment, by acceptance or by negotiation. Moreover every credit must nominate the bank (nominated bank) which is authorized to pay (paying bank) or to accept drafts (accepting bank) or to negotiate (negotiating bank), unless the credit allows negotiation by any bank (negotiating bank). The nominated bank unless is the issuing bank or the confirming bank, its nomination by the issuing bank does not constitute any undertaking by the nominated bank to pay, accept or negotiation.

When an L/C issuing bank instructs a bank (advising bank) by any telegrams mission to advise a credit or a amendment to a credit, and intends the mail confirmation to be the operative credit instrument, for the operative amendment, the tele-transmission must state

“full details to follow” (or words of similar effect) or that the mail confirmation will be the in that case, operative credit instrument or the operative amendment. The issuing bank must forward the operative credit instrument or the operative amendment to such advising bank without delay.

There are some methods of payment of export value. These are as follows:

1. through letters of credit
2. through advance T.T remittances
3. Deferred payment
4. C.A.D basis etc.

Of all the methods referred to above, letter of credit method is most popular and it is in fashion.

3.6: TYPES OF L/C:

Letters of credit may be of different kind and nature:

1. Revocable L/C
2. Irrevocable L/C
3. Confirmed letter of credit
4. Confirmed and irrevocable letter of credit
5. Transferable or divisible letter of credit
6. Back to back letter of credit
7. Red clause letter of credit
8. Sight letter of credit
9. Usance letter of credit
10. Revolving letter of credit
11. Stand by letter of credit

All letter of credit therefore, should clearly indicate whether they are revocable or irrevocable. In the absence of such indication the credit shall be deemed to be revocable.

(1)A revocable L/C: May be amended or canceled by the issuing bank at any moment and without prior to the beneficiary.

In case of revocable credit, however, the L/C issuing bank is bound to:

a) Reimburse a branch or bank with which a revocable credit has been made available for deferred payment, if such branch or bank has, prior to receipt by it for notice of amendment

or cancellation, taken up documents which appear on their face to be accordance with the terms and conditions of the credit.

b) Reimburse a branch of bank with which a revocable credit has been made available for sight payment, acceptance or negotiation, for any payment, acceptance or negotiation, for any payment, acceptance or negotiation

made but such branch or bank prior to receipt by it for notice of amendment or cancellation, against documents which appear on their face to be accordance with the terms and conditions of the credit

2) An Irrevocable L/C: Constitutes a definite undertaking of the issuing bank, provided that the stipulated documents are presented, the term and conditions of the credit are complied with:

The full name of “L/C” i.e. irrevocable letter of credit which means once it is issued by the bank for the buyer and accepted by the beneficiary (the seller) , it cannot be cancelled or withdrawn by the buyer or the opening bank, unless with the consent of the beneficiary. In short, once the buyer opens the L/C from his bank to cover the goods he has purchased, he will have to pay for the goods when the seller ships the goods exactly as per as the terms stipulated in the L/C. Therefore, as far as the seller is concerned, the sooner he has the L/C on hand, the safer he is.

3) Confirmed letter of credit: This is such a credit for which exporter’s bank gives all shorts of surety for the advance of payment.

4) Confirmed and irrevocable letter of credit: Which combines the quality of clause

5) Transferable or divisible L/C: A Transferable credit is a under which the beneficiary has the right to request the bank called upon to effect payment or acceptance or any bank entitled to effect negotiation to make the credit available in whole or in part to one or more other parties(second beneficiary)

A credit can be transferred only if it is expressed designed as “transferable” by the issuing bank. Terms such as “divisible”, “fractional” assignable” and “transmissible” and nothing to the meeting of term” transferable” and shall not be used, in that case the bank requested to effect the transfer (transferring bank), whether it has confirmed the credit or not shall be under no obligation to effect such transfer except to the extent and in the manner expressly consented to by such bank. Bank charges in respect of transfers are payable by the first beneficiary unless otherwise specified.

A transferable L/C can be transferred once only. The credit can be transferred only one the terms and conditions specified in the original credit, with the exception of the amount of the credit.

6) Back to back L/C: This type of L/C is opened against the original master L/C.

(7) Red Clause L/C: In this credit, the export's bank is directly to advance his dues even before they produce all export documents to the bank. And some clause is attached there. The manufacture must have maintained this clause.

(8) Sight L/C: It means when the shipper ships the goods covered by the L/C, and presents the document to the bank for negotiation, the bank (the negotiation bank) will credit the proceeds to the shippers account immediately after checking and finding the documents in order. When the documents are sent by the negotiation bank to the L/C opening bank, the L/C opening bank will effect payment to the negotiation bank immediately. such L/C usually say "AT SIGHT" which means "pay when the bank sees the documents".

(9) Usance L/C: It means L/C with time allowed for the opening bank to make payment of a foreign bill of exchange. Or, put in another way, payment from the L/C opening bank to the negotiation bank will only be made after a period of time as stipulated in the L/C. The length can be worked out between the buyer and the supplier, sometimes 60 days, sometimes 90 days or 120 days.

10. Revolving L/C: It means that the beneficiary can draw money from such L/C up to the amount specified by means of documents, and after drawing , the amount drawn will automatically be replenished and is available for another drawing another drawing and so on.

Various types of L.C. are present in business system. Some recognized processes are:

- 1) MASTER /MOTHER L.C
- 2) BACK TO BACK L.C
- 3) SIGHT L.C

(Note: in Bangladesh sight L. C OR irrevocable L / C is mainly used)

- In this trade initially cash money is not used. L. C is the main process for buying & selling. When a business deal is made for buying & selling between buyer & merchandiser then the buyer gives permission to his bank to open an L.C. of approx amount & send it to merchandiser's bank. Then this bank informed to merchandiser that an L.C. is accepted. This L .C is called MASTER L.C.
- Then merchandiser takes decision about the manufacturer for collecting raw materials .when merchandiser choose supplier then he tell the supplier to send a pro-forma invoice. After getting p .I. merchandiser tell to his bank to open an L .C send to the supplier's bank. This L. C is opened from mother L .C which is given to merchandiser. This L.C is called back to back or b to b L.C.
- When supplier sends the products to merchandiser, then he send a acceptance copy to his bank & a copy to the supplier. Then the supplier can able to get cash from his bank. At the same way merchandiser send the product to the buyer or after shipment he also able to get cash from bank. Shipment of goods is done by B.L (bill of

leading).this system is called SIGHT L.C.SIGHT L.C. consists of MASTER & B TO B L.C¹

Documentation for shipment:

- Packing list
- Commercial invoice
- ERC(export registration certificate)
- Bank account.
- Bill of Lading.

- **FOB: FREE ON BOARD** (Free on Board) is simply the Supplier delivers the goods to his nearest Port and hands them over to the Freight Forwarder nominated by the Buyer. Buyer then pays the freight and arranges Insurance
- **CNF: CLEARING & FORWADING**
- **CIF: COST INSURANCE & FREIGHT** (Cost Insurance Freight) means that the Supplier delivers the goods to his own Freight Forwarder who then ships the goods to the destination Port. Seller pays freight and insurance. From a Buyer's point of view, CIF is better as he does not have to worry about arranging shipping from Supplier to his home Port.
- **DDP :DELIVERED DUTY PAID**
- **DDU :DELIVERDED DUTY UNPAID**

Terms of trade:

C&F (cost and freight)

- The seller/supplier agrees to contract the freight and pay "cost and freight" for loading the goods, cleared for export, on board a vessel and the charges to ship the goods to destination. The buyer bears the risk of the goods from the time they pass the ship's rail at the port of shipment and pay for the insurance coverage, and for the unloading costs at the port of destination.

CIF (cost, insurance, freight)

- The seller's price includes all charges, freight and insurance up to the point where the ship carrying the goods arrives at the port of destination; the goods must be cleared for export by the seller. From that point the buyer has to bear all charges and risks, including unloading costs.

CM

➤ This refers to the manufacturing cost and this term means "cut and make". The buyer supplies all the materials to the manufacturer.

CMQ

- This term means "cut, make and quota" and is similar to 'CM' except that the manufacturer has to supply the quota as well.

FOB

- This term means "Free On Board". The supplier is responsible for all charges (including export licenses, export taxes, etc.) and risks until the goods have passed over the ship's rail at the port of shipment; the merchandise must be cleared for export. The buyer contracts and pays for the freight and bears all risks for loss or damage to the goods as soon as the merchandise passes the ship's rail. The buyer also pays for all import duties and clears the goods through customs at the point of destination.

FOB Airport (FOA)

- This is similar to the term FOB except that the mode of transportation is an air carrier. The supplier fulfills his obligations after he has delivered the goods to the air carrier. The goods must be cleared for export by the supplier.

Export Licence

- In Hong Kong, export licenses are needed for all garments and textile products. The licenses are issued by the Trade Department.

Packing List

- This is a document that indicates the contents of each individual carton/ package in the container. The packing list includes the cubic measurement of the cartons/package, the weight, the number of cartons/packages, the breakdown of the goods by size/color/quantity. This document is prepared by the seller or the ship owner, and the buyer can specify which information should be included.

BILL OF LADING (BOL):

Bill Of Lading (BOL)

It is a major document if the goods are dispatched by sea.

The document represents:

- A formal receipt for the goods
- The evidence of the contract of carriage of the goods between the shipper of the goods and the shipping company
- The document of title to the goods
- A bill of lading may include the following details:

➤ a description of the goods in general terms not inconsistent with that in the letter of credit

➤ identifying marks and numbers, if any

➤ the name of the carrying vessel

- evidence that the goods have been loaded on board
- the ports of shipment and discharge
- the names of shipper, consignee (if not made out "to order"), and name and address of the "notifies" party if any
- whether freight has been paid in advance or is payable at destination
- the number of original bills of lading issued
- the date of issue
- the departure date of carrying vessel or aircraft

Types of B/L

Straight bill of lading	Non negotiable bill of lading. Consigned directly to importer. Consigned directly to third party.
Memo bill of lading	Needed for documents and. Revenue purpose. Short shipment and advance.
Express bill of lading	Non negotiable of lading. Consigned directly to third party. Hard copy is not required by shipper.

Shipping terms:

➤ Consignee

The person whose name appears on the bill of lading or airway bill as the party to whom the goods are to be delivered by the carrier

➤ FCL (full container load)

A fully loaded container which may be in weight or cubic measurement terms, contracted by one shipper, and conveyed to one consignee and to one destination

➤ LCL (less container load)

A consignment of cargo which does not fill a full container, grouped with other consignments for the same destination.

➤ Shipper

This is the person whose name appears on the bill of lading or airway bill as the party who has contracted the carrier to dispatch the goods.

➤ Shipping Marks

These are marks essential to identifying cargo and linking that cargo with specific documents. Because these marks are important as identifiers, the marks and numbers should be as simple as possible. Shipping marks include the abbreviated name of buyer, reference number, destination, package number, and container number (if applicable).

➤ Garment on Hangers (GOH)

The garments are packed into the container on hangers.

3.7. CARE INSTRUCTIONS

Machine Wash Cycle

Icons:	What it means:
	Regular/Normal Cycle with regular agitation and spin speed may be used.
	Use Permanent Press/Wrinkle Resistant washer setting (which has a cool down or cold spray before the reduced spin).
	Use Gentle/Delicate washer setting (slow agitation and/or reduced wash time).
	Hand wash only
	Do not wash.
	Do not wring by hand or use rollers on wringer washer. Hang dry, drip dry or dry flat.
Water Temperature	
Icons:	What it means:
	Maximum water temperature 200°F/95°C.
	Maximum water temperature 160°F/70°C.
	Maximum water temperature 140°F/60°C.
	Maximum water temperature 120°F/50°C.
	Maximum water temperature 105°F/40°C.

•	Maximum water temperature 85°F/30°C.
Tumble Dry Cycle	
<i>Icons:</i>	<i>What it means:</i>
	Machine dry.
	Use Normal Cycle setting.
	Use Permanent Press/Wrinkle Resistant Cycle setting.
	Use Gentle/Delicate Cycle setting.
	Do not tumble dry.

Heat Setting	
<i>Icons:</i>	<i>What it means:</i>
	Set dryer at any heat.
	Set dryer at High heat.
	Set dryer at Medium heat.

	Set dryer at Low heat.
	No heat/air.
	Do not dry (used with do not wash).

Special Instructions

Icons:

What it means:

	Line dry/hang to dry - hang damp from line or bar and allow to dry.
	Drip dry - hang wet on plastic hanger and allow to dry with hand shaping only.
	Dry flat - lay garment on flat surface.
	Dry in the shade.

Bleach Symbols

Icons:

What it means:

	Use any bleach (when needed).
	Use only non-chlorine bleach (when needed).
	Do not bleach.

Iron - Dry or Steam	
<i>Icons:</i>	<i>What it means:</i>
	Iron - Ironing is needed.
	Iron using High temperature setting.
	Iron using Medium temperature setting.
	Iron using Low temperature setting.
	Do not iron or press with heat.
	No steam - iron without using steam.
Dry-clean - Normal Cycle	
<i>Icons:</i>	<i>What it means:</i>
	Dry clean.
	Dry clean using any solvent.
	Dry clean using any solvent except trichloroethylene.
	Dry clean using Petroleum solvent only.

	Do not dry clean.
Special Dry clean Instructions	
<i>Icons:</i>	<i>What it means:</i>
	Low heat.
	Short cycle.
	Reduce moisture.
	No steam finishing.

PURPOSE OF QUALITY CONTROL:

- It will affect the sale ability of the product.
- It will affect the service ability of the product
- It improves the manufacturing quality
- It will help to certify the performance of the company.
- It will help to maintain total commitment to organized design.
- It will help to reduce wastage of goods.
- It will help to get better order from buyer.

3.8. FINAL INSPECTION:

1. ITS will conduct final inspection per AQL 2.5 major & AQL 2.5 minor.

AQL TABLE (Inspection Table)

SL No	Lot/	AQL	Max no	AQL	Max no	AQL	Max no
-------	------	-----	--------	-----	--------	-----	--------

	Quantity(GMTS size in units)	1.5	defective allowed	2.5	defective allowed	4.0	defective allowed
1	51-90	8	0	20	1	13	1
2	91-150	32	1	20	1	20	1
3	151-280	32	1	32	2	32	3
4	281-500	50	2	50	3	50	5
5	501-1200	80	3	80	5	80	7
6	1201-3200	125	5	125	7	125	10
7	3201-10000	200	7	200	14	200	14
8	10001-35000	315	10	315	14	315	21
9	35001-150000	500	14	500	21	315	21
10	150001-190000	800	21	500	21	35	21

3.9. SPECIMEN LOCAL ACCESSORIES LIST:

Local accessories suppliers are available in Bangladesh. Qualities are varying according to market place & price. Some companies are BUYER nominated.

For example: 1) Plastiform

2) Bright trim etc.

Approx. price range:

Hanger : 1.95-3.30 dollar
Papers hang tag : 40cent-1.5 dollar.
Price tag : 30 cent-80 cent
Poly bag : 45cent-1.5dollar (Depending on size & thickness)
Carton : 95 cent- 2.0 dollar
(Note: price is varying according to market price)

Trims

Sewing thread : 80-95 cent (per cone)
Button : 1.4-3.0 dollar/grows (144 pcs =1 gross)
Rivet : 80 cents-1.5 dollar/gross
Hole button/chock button: 8 dollar- 10 dollar/gg (1728pcs=1gg; greater gross)
Zipper : 2.0dollar-4.0dollar/dozen (pant)
8 dollar-13dollar (jacket)

(Note: the price is depend on the basis of zipper quality that is cotton, nylon, polyester etc)



Daffo

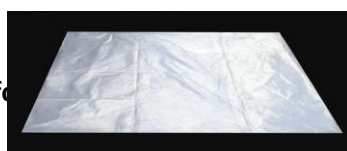


Figure: Accessories

BUTTON

40 Ligne = 1 inch = 2.54 cm = 25.4 mm

⇒ 1 ligne = 0.635 MM

1. Pearl button
2. Horn button: It is also polyester button
3. Chalk "
4. Logo "
5. Polyester "
6. Imitation leather
7. Polyester imitation button
8. Nylon button
9. Jeans button
10. Snap button: 2 ports & 4 ports
11. Press button
12. Polymath button : It is made of polyester & metal.
13. Cord button : It is made of cord.
14. Coconut button
25. Wooden button
26. Real Shell button
27. Rhine stone button : It is made of metal & stone

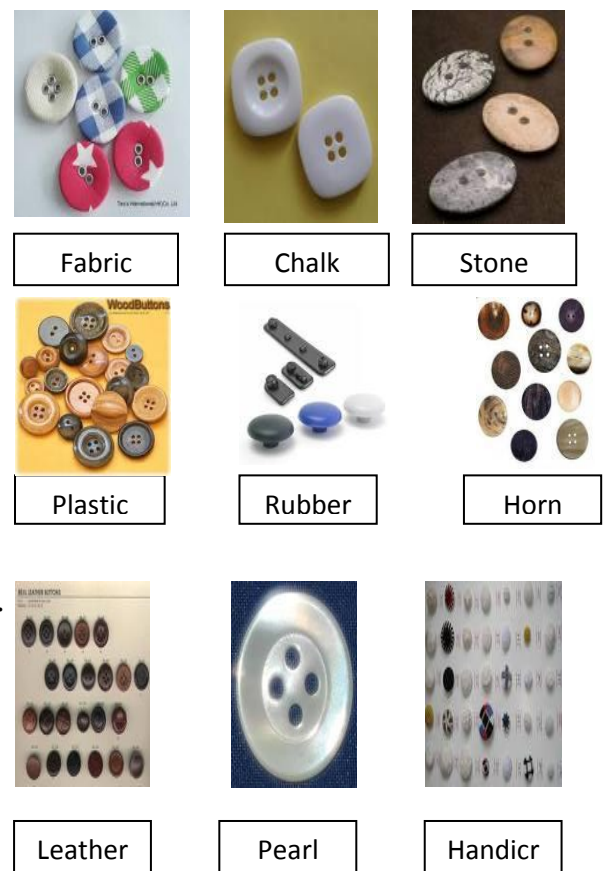


Figure: Button

Type of zipper

1. Depend on end 1. Open end Zipped:
 - (a) Right insertion of sleeve & left puller (Men's)
 - (b) Left insertion of sleeve & Right puller (Women's)
2. Depend on teeth size:
 1. 3 size, 2. 4 size, 3. 5 sizes

It depend on teeth length it 3 mm then size 3.

3. Depend on tape: 1. Polyester 2. Cotton
4. Depend on puller: 1. Double puller 2. Single
5. Depend on slider lock: 1. Auto lock 2. Semi locks 3. Non lock
6. Depend on teeth material:
 1. Nylon: shiny rainbow, shiny gold, shiny silver, antic brass.
 2. Metal: brass, antic brass, nickels brass, aluminum, pewter.
 3. plastic on darling: ivory, translucent, shiny gold, silver rainbow
 4. Plastic on darling: ivory, translucent, shiny gold, silver rainbow.

Quality:

1. AZO Free
2. NICKEL Free
3. Non magnetic.
4. Non toxic
5. Zipper teeth is not shrink so zipper tape S/B shrink free.
6. FBRIC S/B max 3% Shrinkage otherwise garment.
7. like wavy & difficult for the zipper Slider.
8. To go up and down.

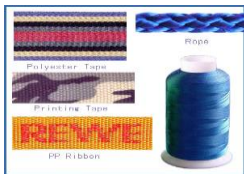


Figure: Zipper

3.10. TRIMS AND ACCESSORIES:

Introduction:

To full fill the design objectives we need different kind of materials. Fabrics are the main material, which used for garment manufacturing. We need other materials also, which make the garments aesthetic, functional and commercially required. Usually other than fabrics these materials used for making garments are called trims and accessories’.

Trims:

The raw materials used in sewing room other than fabric are called Trims.

On the other hand we can say that which materials are directly attached with the fabric to make a garment are called trims. Like: Threads, buttons, lining, Interlining, zippers, labels, care labels, etc. (Interlining is used as shape forming / preserving materials.).

Accessories:

The materials, which are used to make a garment attractive for sale and packing, other than fabrics and trims, are called Accessories.

List of Trims and accessories:

SL	Trims	SL	Accessories
1	Label (S)	1	Poly bag
2	Button	2	Elastic bag
3	Zipper	3	Mini Poly bag
4	Padding	4	Master Carton
5	Interlining	5	Inner carton
6	Down	6	Size clip
7	Elastic	7	P. P. band
8	Thread	8	Tag pin
9	Twill Tape	9	Brass pin
10	Stopper	10	Collar stand
11	String/ Draw Cord	11	Safety pin
12	Piping Cord	12	Gum tape
13	Emblem	13	Arrow sticker
14	Logo print	14	Scotch tape
15	D- Ring	15	Barcode Sticker

16	Swivel Hook	16	Defect indicator
17	Eyelet/ Grommet	17	Tissue paper
18	Collar Stay	18	Back board
19	Cord Bell	19	Neck board
20	Buckle	20	Butterfly
21	Rivet	21	Numbering stickers
22	Weaving belt	22	Hanger
23	Hook & Eye	23	Size sticker
24	Velcro tape	24	Carton pad
25	Seam sealing tape	25	Both side tape
26	Shoulder pad	26	Plastic staple
27	Cable (Steel ware)	27	Iron seal
28	Adjuster	28	Clip
29	Rocco	29	Ball Chain
30	Elastic Threads	30	Size Tag
31	Shoulder Tape	31	Carton Sticker
		32	Safety Sticker
		33	Plastic clip

1. Main Label: .25 - .40 USD/dz
2. Size Label: .06 - .09
3. Wash care label:.06 - .20
4. Polybag: .40 - .55
5. Carton: .20 - .25
6. Sewing Thread: .35 -.50
7. Gum Tape: .20 - .25
8. Flag Label

Print:

1. Pigment
2. Rubber

3. Plastic Salt
4. High Density
5. Sugar Print
6. Gel Print
7. Glitter Print
8. Discharge Print
9. Reactive Print.

Embroidery:

Per 12000 Stitch = .35-.38 USD (Normal)

= .40 - .45 USD (Appliqué)

Embroidery thread consumption Meter/ Body= Embed. Stitch X .006

Price of Embed. Thread= 1.30 USD/ Cone Normal

Thread contain = 3000 meter/ cone or 2000 meter / cone

Wash:

1. Normal: 1.80 USD/dz
2. Enzyme: 3.0 USD/dz
3. Pigment: 3.5 USD/kg
4. Acid wash: 3.5 USD/kg
5. Silicon Wash: 2.0 USD/dz

CM:

1. Tee Shirt: 4 USD/dz
2. Polo Shirt: 6-9 USD/dz
3. Tank Top: 2.5-3.5 USD/dz

PACKING ACCESSORIES:

The Accessories which are used for garment packing during garment shipment to buyer are called packing accessories. Packing accessories are depended on garment packing and folding etc which is instructed by buyer. Poly bag, packing board, tissue paper, hanger, scotch tape, gum tape, carton etc are part of packing accessories.

Packing should be varying (as per buyer garment packing instruction) in different orders as per instruction of buyer garments packing. , The number of one carton garments it is weight on depend carton quality. Understand quality of carton follow 3 ply, 5 ply, and 7ply. The number of carton is high ply number it is very much it is hard and strong. The sea frights depend on dimension of the export carton and the air frights depend on dimension of the export carton or gross weight of the carton.

Type of carton:

1. Depend on paper : 1.khaki carton or brown carton

2. Duplex carton
3. Box carton
2. Depend on stitching : 1. Stitching carton
 2. Now stitching /gum pasting carton or metal free carton
3. Depend on ply : 1. 3 ply carton
 2. 5 ply carton
 3. 7 ply carton
4. Depend on liner : 1. both side liner cartons
 2. outside liner carton
5. Depend on size :1. Master carton
 2. Inner carton

Carton measurement:

Formula (1) = $\frac{(l+w)(w+h) \times 2 \text{ in cm}}{100 \times 100}$ (without wastage)

Formula (2) = $(l+w+6) \times (w+h+4) \times 2 / 10000$ (include wastage)

Price = $\frac{(l+w)(w+h) \times 2}{100 \times 100} \times \text{rate per square meter}$
 = rate/pc

Example, here, l=54cm, w=33cm, h=18cm,

From (2) = $(54+33+6) \times (33+18+4) \times 2 / 10000$
 = 0.99 Square Meter.

Quota a price for a Carton::

Formula:

$(L+W+6) \times (W+H+4) \times 2 / 10000 \times \text{Rate (Include Wastage)}$

Here,

Let, L=54cm, w=33cm, H=18cm, Rate=0.73(\$)

From Formula,

$$\frac{(54+33+6) \times (33+18+4) \times 2 \times 0.73}{10000}$$

=0.719 (\$)/PCS

Rate for 7 PLY = .90USD [For GMTS Export Natural 7 Ply Used

5 PLY = .69 USD (.55X 5/7) (Less Wt Master Carton)

3 PLY = .53 USD (It is used as inner carton)

NOTE: Some time some buyer wants top & bottom inside in the carton. It should be in 3 Ply.

Carton should be made of 7 ply to be exported. Carton is tested by carton bursting machine.

We have selected apparel industry for our experiment these are:

1. H.R Textile Ltd

We have observed the followings:

- ❖ sample development process
- ❖ fabric consumption calculation
- ❖ thread consumption

Sample development in H.R Textile Ltd:

According to buyer requirement the sample is developed in sample section. Sample section is the main point of the garments. Because the bulk production depends on the sample, If sample making is not correct, the whole purpose of the production would be damaged.

TYPES OF SAMPLE:

- ◆ Proto sample
- ◆ Style fit sample.
- ◆ Counter sample.
- ◆ Pre-production sample
- ◆ Final sample.
- ◆ Size set sample.
- ◆ Photo sample
- ◆ Shipping sample etc.

Knitted wear with dummy in sample section:

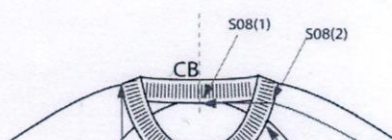


Figure: Different Sample

HOW TO MEASURE KNIT TEES, POLOS & FLEECE

VERY IMPORTANT:
for "S08-SLEEVE LENGTH FROM CENTER BACK"
use only this 3-point measure way
S08(1)-CB neck seam
S08(2)-shoulder @ top of armhole
S08(3)-bottom opening edge

S02-FRONT ARMHOLE (STRAIGHT)



**HOW TO MEASURE
KNIT TEES, POLOS & FLEECE**

3.11. Approx sewing thread consumption of different items:

No.	Product name	Consumption
-----	--------------	-------------

01	Basic t- shirt	125meter
02	Basic polo shirt	175
03	Tank top	50meter
04	Fleece/Sherpa jacket	250meter
05	Kids/girls dresses	300-450meter
06	basic long sleeve woven shirt	150meter
07	Basic short sleeve woven shirt	125 meter
08	basic long trouser/pant	350meter

3.12. Machine wise sewing thread consumption/inch:

1.plain m/c	1 needle	2.5 inch
2.plain m/c	2 needle	5 inch
3.over lock	3 thread	13.25 inch
4. over lock	4thread	16.75inch
5.over lock	5 thread	18.75inch
6.flat lock	3 thread	16.75inch
7.flat lock	5thread	22.25inch
8.bar tack stitching	Per operation	Generally 7 inch

Some conversion unit

Conversion system

1 Yard	=	0.9144 Meter
1 Foot	=	0.3048 Meter
1 Foot	=	30.48 cm
1 inch	=	2.54 cm
1 Meter	=	1.09 Yard
1 Meter	=	3.28 Foot
1 CM	=	0.032 Foot
1 CM	=	0.393 Inch
1 Square Inch	=	6.45 Square CM
1 Square Meter	=	0.836 Square CM

3.13. Fabric consumption calculation for 1 dozen men's t-shirt:

For a Men's T-Shirt:

a) G.S.M (Given by buyer)	Body	: 145-150
	Neck/Rib	: 180-200

- b) Sewing & seam allowances (Not given by buyer) – 1.50-3cm
 c) Wastage % (Not given by buyer) – 7%
 d) Measurement chart (given by buyer)

Measurement Chart:

Parameter	Given	Estimated with sewing allowance
a) Chest	96cm	102cm
b) HPS	65cm	70cm
c) sleeve length	20cm	25cm
d) Arm hole	46cm	49cm
e) Neck	58cm	61cm
f) Neck width	2+2=4cm	7cm
g) Bottom hem	2cm	

Formula:

$$\text{Cpd} = \frac{L \times W \times 12 \times \text{GSM}}{10000000} \text{ kg}$$

Where, Cpd = Consumption per dozen

L = Length

W = Width

$$\begin{aligned} \text{A) Cpd (body)} &= \frac{L \times W \times 12 \times \text{GSM}}{10000000} \text{ kg} \\ &= \frac{70 \times 102 \times 12 \times 150}{10000000} \text{ kg} \\ &= 1.28 \text{ kg} \end{aligned}$$

$$\begin{aligned} \text{B) Cpd (Sleeve)} &= \frac{L \times W \times 12 \times 2 \times \text{GSM}}{10000000} \text{ kg} \\ &= \frac{25 \times 49 \times 12 \times 2 \times 150}{10000000} \text{ kg} \\ &= 0.44 \text{ kg} \end{aligned}$$

$$\begin{aligned} \text{C) Cpd (Neck)} &= \frac{L \times W \times 12 \times \text{GSM}}{10000000} \text{ kg} \\ &= \frac{61 \times 7 \times 12 \times 180}{10000000} \text{ kg} \\ &= 0.092 \text{ kg} \end{aligned}$$

$$\begin{aligned} \text{So, total Cpd} &= (A + B + C) \\ &= (1.28 + 0.44 + 0.09) \text{ kg} \\ &= 1.81 \text{ kg} \end{aligned}$$

$$\begin{aligned} \text{Actual Cpd} &= \text{Total Cpd} + 7\% \text{ wastage} \\ &= (1.81 + 7\%) \\ &= 1.94 \text{ kg} \end{aligned}$$

So, the fabric consumption for men's T-shirt is 1.94 kg per dozen.

3.14. Consumption calculation for 1 dozen polo shirt:

Here,

a) G.S.M. (given by buyer)

body	→	145 – 150
Collar (12pcs)	→	400
Cuff (12 x 2)	→	300

b) Sewing & seam allowance → 1.50 – 3cm

c) Wastage % → 7%

d) Measurement chart (given by buyer

Measurement Chart:

Parts Name	Given	Estimated
a) Chest	96 cm	102 cm
b) HPS	65 cm	70 cm
c) Sleeve length	20 cm	25 cm
d) Arm hole	46 cm	49 cm
e) Collar length	46 cm	46 cm
f) Collar width	7 cm	10 cm
g) Cuff length	26 cm	10 cm
h) cuff width	3 cm	5cm

Formula:

$$\begin{aligned}
 \text{A) Cpd (body)} &= \frac{L \times W \times 12 \times \text{GSM}}{10000000} \text{ kg} \\
 &= \frac{70 \times 102 \times 12 \times 150}{10000000} \text{ kg} \\
 &= 1.28 \text{ kg}
 \end{aligned}$$

$$\begin{aligned}
 \text{B) Cpd (Sleeve)} &= \frac{L \times W \times 12 \times 2 \times \text{GSM}}{10000000} \text{ kg} \\
 &= \frac{25 \times 49 \times 12 \times 2 \times 150}{10^7} \text{ kg} \\
 &= 0.44 \text{ kg}
 \end{aligned}$$

$$\begin{aligned}
 \text{C) Cpd (Collar)} &= \frac{L \times W \times 12 \times \text{GSM}}{10^7} \text{ kg} \\
 &= \frac{46 \times 10 \times 12 \times 400}{10^7} \text{ kg} \\
 &= 0.22 \text{ kg}
 \end{aligned}$$

$$\begin{aligned}
 \text{D) Cpd (Cuff)} &= \frac{L \times W \times 12 \times 2 \times \text{GSM}}{10^7} \text{ kg} \\
 &= \frac{30 \times 5 \times 12 \times 2 \times 300}{10^7} \text{ kg} \\
 &= 0.108 \text{ kg}
 \end{aligned}$$

$$\begin{aligned}
 \text{So, total Cpd} &= A + B + C + D \\
 &= (1.28 + 0.44 + 0.22 + 0.108) \text{ kg} \\
 &= 2.05 \text{ kg}
 \end{aligned}$$

$$\begin{aligned}
 \text{Actual Cpd} &= 2.05 \text{ kg} + 7\% \\
 &= 2.19 \text{ kg}
 \end{aligned}$$

So, fabric consumption for 1 dozen polo shirt is 2.19 kg.

3.15. Consumption calculation for 1 dozen trousers:

For Trouser,

- a) G.S.M. (given by buyer) $\longrightarrow$ 180 - 250
- b) Sewing & seam allowance $\longrightarrow$ 1.50 – 3cm
- c) Wastage % $\longrightarrow$ 7%

Measurement Chart:

Parts Name	Given	Estimated
a) Waist	112 cm	114 cm
b) Side seam (length)	107 cm	114 cm
c) Thigh (width)	66 cm	72 cm
d) Front rise	28 cm	
e) Back rise	36 cm	
f) Leg Opening (bottom)	46 cm	

Formula:

$$\begin{aligned}
 \text{Cpd} &= \frac{L \times W \times 12 \times \text{GSM}}{10^7} \text{ kg} \\
 &= \frac{114 \times 2 \times 72 \times 12 \times 200}{10^7} \text{ kg} \\
 &= 3.93 \text{ kg}
 \end{aligned}$$

$$\begin{aligned}
 \text{Actual Cpd} &= (3.93 + 7\%) \text{ kg} \\
 &= 4.2 \text{ kg}
 \end{aligned}$$

So, fabric consumption for 1 dozen Trousers is 4.2kg.

4. RESULT AND DISCUSSION

4.1. Quota a price for 1 dozen T- shirt:

Pre-requisites:

	<u>Unit price</u>	<u>Costing</u>
1. Fabric consumption 1.94 kg/dz	\$7.0/kg	\$13.3

2. Accessories	\$3/dz	\$3/dz
3. CM (cost of manufacturing)	\$4/dz	\$4/dz
	<u>Total</u>	<u>\$20.3</u>

A) Direct cost (raw materials)/dz = \$20.3

B) Indirect cost (15% to 20% of direct cost)

Indirect cost = \$20.3 x 15%
= \$3.04
Total = \$20.3 + \$3.04
= \$23.345

C) Profit @10% = \$23.345 x 10%
= \$2.3345

Therefore, total cost = \$23.345 + \$2.3345
= \$25.68

So, the cost for 1 dozen men's T-shirt is \$25.68

4.2. Quota a price for 1 dozen Polo shirt:

Pre-requisites

	<u>Unit price</u>	<u>Costing</u>
1. Fabric consumption 2.19 kg/dz	\$7.0/kg	\$15.33
2. Accessoires	\$3/dz	\$3
3. CM	<u>\$6/dz</u>	<u>\$6</u>
	Total	\$24.33

A) Direct cost (raw material)/dz = \$24.33

B) Indirect cost = 15% - 20% of direct cost
= \$24.33 x 15%
= \$3.65

Total cost = A + B
= \$24.33 + \$3.65
= \$27.98

C) Profit at 10% = \$27.98 x 10%
= \$2.80
= \$27.98 + \$2.80
= \$30.78

The total cost for 1 dozen polo shirt is \$30.78

4.3. Quota a price for 1 dozen Trousers:

Pre-requisites

	<u>Unit price</u>	<u>Costing</u>
1. Fabric consumption 4.2 kg	\$7.0/kg	\$29.4
2. Accessories	\$3/dz	\$3

3. CM		$\frac{\$6/\text{dz}}{\text{Total}}$	$\frac{\$6}{\$38.4}$
A) Direct cost (raw material)/dz	= \$38.4		
B) Indirect cost	= 15% - 20% of direct cost = \$38.4 x 15% = \$5.76		
Total cost	= A + B = \$38.4 + \$5.76 = \$44.16		
C) Profit at 10%	= \$44.16 x 10% = \$4.42 = \$44.16 + \$4.42 = \$48.58		

The total cost for 1 dozen trousers is \$48.58

Comprehensive study on Knit Garments Merchandising:

Merchandising is a very important term for textiles, especially for garments trade. From this project we get all the information about merchandising and its importance in garments sector. Here also included the activities & qualities of a merchandiser which will be very helpful to continue this job. Here also included some technical knowledge about the fabrics & accessories, which is very important for this trade. Now-a-days in many buying house & garments factory hiring foreign people to continue the work smoothly, because of the lackage of available efficient stuffs in Bangladesh. We should try to make our manpower from our own country as they can compete with the foreign stuffs and they can do their own jobs without the help of foreigners. We hope, one day we will be able to do our own jobs by our own & that time our country will be more benefited which we really deserve.

5. SEA FREIGHT AND AIR FREIGHT:

Although most orders for garments are placed by buyers on FOB basis, with buyers to pay for freight at the shipping destination, it is still necessary for the shipper or the agent to know how to calculate sea freight and air freight as buyers always need to know how much freight the merchandise cost per dz. If you are required to sell on CIF basis, (with the shipper to prepay for freight at the shipping port) you will need to calculate the freight accurately for your own costing.

1. Sea freight:

Sea freight is usually charged based on volume—how much per CBM (cubic meter)—very rarely by weight as “density cargo”. In fact ANERA (Asia North America eastbound

rate agreement) has designed the freight tariff more based on the usual value of the type of goods, than the usual weight of them, taking into consideration that for low value merchandise they should give a low freight rate in order to make it possible for the importers to buy goods overseas. However, for high value merchandise, they should charge a high freight rate, as it is believed that the buyer can afford to pay more on freight. They have designed the freight tariff in such a way that everybody can do business and there is sufficient profit for the shipping lines.

Container size	Calculated Capacity	Practical capacity	Container FCL rate	FCL rate for CBM	LCL Rate per CBM
20" Capacity	29.5 CBM	27 CBM	3500	130	160
40" Normal	61.32 CBM	54 CBM	5000	92	160
40" Hi Cube	69.15 CBM	62 CBM	6500	92	160

Note: FCL: Full container loading

LCL: Loose container loading

If you ship very heavy goods as loose cargo because the size of the shipment is very small, the shipping lines will charge you by weight or by volume whichever is higher.

1 CBM (100 cm X 100 cm X 100 cm) = 1000 Kg

2. Air freight:

Unlike sea freight, the airlines have decided to charge for the heavy merchandise (high density goods) by weight and lightweight merchandise (low density goods) by volume. However, as airplanes can take less weight than ocean liners, the way they

Set the standard, in the garment industry, when you ship goods by air, you have a 70% chance to be charged by weight, about 30% chance by volume.

The followings are the relationship between weight and volume as set by IATA (International air transport association).

- From most shipping locations in the Far east to the U.S. destinations and Canada 7000 cubic cm = 1 kilo.
- From certain locations in the Far east to the U.S. destinations and Canada 6000 cubic cm = 1 kilo

Therefore when you have low density goods to ship by air, in order to determine if you should try to make the cartons as small as possible to save freight. First you check with the local air forwarding agent by asking him in the country where you are, how many cubic cm is

considered 1 kilo in weight. They will tell you either 7000 or 6000. This is the answer you need.

Then you physically check the weight and measurements of the goods packed for the air shipment. Now we have the 3 answers as follows, for example:

- a. The country is Bangladesh and the formula is 6000 cubic cm = 1 kilo
- b. The measurements of the cartons are 50cmX 60cmX 40cm
- c. The gross weight of the cartons is 16 kilo per carton.

Now let us find out if we should try to make the cartons smaller to save air freight by doing the following calculation,

Multiply 5 by 60 by 40 = 120000 cubic cm.

120000 cubic cm divided by 6000= 20 kilo

Now you know, by volume the one carton is of 2 kilo, but by actual weight the carton is of only 16 kilo. You also know the airline will charge whichever is higher; in this case, they will charge you for 20 kilo, by volume. If the air freight rate is 2.80 per kilo this carton will cost you \$ 56.00.

Now, in order to save some money, let us try to make the carton smaller, usually by cutting the height of the carton. Let's say we have succeeded in cutting down the height by 5 cm, and see how much money we can save.

**** Original size of the carton: 50 X 60 X 35 cm (=20 kilo)**

**** Now cut down to 50 X60 X 30 cm= 105000 cubic cm.**

105000 / 6000 = 17.5 kilo

Now by using the new carton, we have saved 2.5 kilo and this carton will cost only \$ 49.00 (17.5 Kilo X 2.80)

Shipping Terms:

1. CM: Cost of making/ cutting and making
2. FOB: Freight on board
3. C & F: Cost and freight / Clearing and forwarding
4. CIF: Cost, insurance and freight
5. CIFI: Cost, insurance, freight and interest
6. CIFE: Cost, insurance, freight and exchange
7. COD: Cash on delivery
8. CWO: Cash with order
9. FOW: Free on wagon
10. Franco: (...Named Port of Shipment)
11. FOB: Free on Board (...Named Port of Shipment)
12. CFR: Cost and Freight (...Named Port of Destination)

13. CIF: Cost, Insurance and Freight (...Named port of Destination)
14. CPT: Carriage Paid To (...Named Place of Destination)
15. CIP: Carriage and instruction paid to (...Named Place of Destination)

16. DAF: Delivered at frontier (...Named Place)
17. DES: Delivered Ex Ship (...Named Port of Destination)
18. DEQ: Delivered Ex QUAY (...Named Port of Destination)
19. DDU: Delivered Duty Unpaid (...Named Place of Destination)
20. DDO: Delivered Duty Paid (...Named Place of Destination)

Country and port:

Country	Port & price	Buyer
Germany	Hamburg	New Wave Mode Lab
Sweden	Gothenburg	Cellbes Post Order AB
Spain	Barcelona (1500)	Geologistics Barcelona S.A.
Italy	Geneva	Samar Spa
Sweden	Barcelona	Rueca Europea S. L.
France	Leharve (1200)	
U.K.	Liverpool (1400)	
Germany	Quaken Bruech (1645)	Centerline mode Vertriebs GMBH
Netherlands	Rotterdam	

6. PRINTING:

Printing

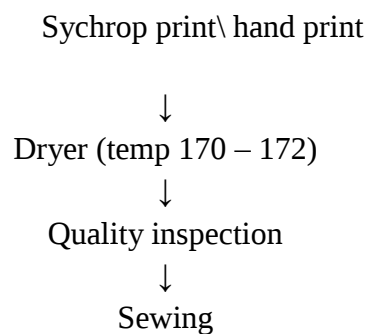
The printing is described as localized dyeing, dyes or pigment are applied locally or discontinuously to produce the various designs. Printing is the production of all active designs with well defined boundaries made by the artistic arrangement of a motif is one or more colors. Printing is a process for reproducing text and image, typically with ink on paper

using a printing press. It is often carried out as a large-scale industrial process, and is an essential part of publishing and transaction printing. Screen printing is a printing technique that uses a woven mesh to support an ink-blocking stencil. The attached stencil forms open areas of mesh that transfer ink as a sharp-edged image onto a substrate. A roller or squeegee is moved across the screen stencil, forcing or pumping ink past the threads of the woven mesh in the open areas. Screen printing is also a stencil method of print making in which a design is imposed on a screen of silk or other fine mesh, with blank areas coated with an impermeable substance, and ink is forced through the mesh onto the printing surface. It is also known as silk screening or serigraphy.

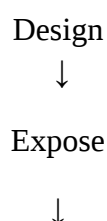
Steps of printing:

1. Preparation of the fabric to be printed.
2. Preparation of the print paste.
3. Making an impression of the print paste on the fabric.
4. Drying of the printed fabric.
5. Steaming of the printed fabric. After treatments (soaping etc)

Printing process:-



Steps of printing section:



Color



Develop sample

Process of after production primary printing inspection:-

Approval



Strike of Approval



Hand over (Measurement Chart)



Pre-production meting



Quality Report



Total Production Summary

Technical Specifications:-

Machine Overall size 1250 x 1000 x 1150mm

Frame Size 1000 x 800 x 40mm

Light Source 3000 W

Net Weight 300kg



Exposing m/c



Curing m/c



Heat transfer m/c

Steps in design to screen:-

Screen mode (50-60 min dryer temp 70 c)



Exposing m\c



Cold water (5 min)



After them spray gun develop



Dryer (30-40 min)



Re-wash



Dryer (20 min)



Re-expose (20 min)



Hard & applied



Design complete

Remove to Screen: -

Stripe powder to Wash

Difference between Automatic Print & Hand Print:-

Automatic Print	Hand Print
1. Accuracy	1. No Accuracy
2. Limited Production	2. No Limited Production

3. Production is high	3. Production is Low
4. Depends on m/c capacity	4. It is manually print
5. Capacity is 9 colors	5. Variety colors print

Types of print:

- | | |
|--------------------------------|------------------------|
| (1) Pigment print. | (7) Glitter print |
| (2) Water base plastisol print | (8) Metallic print |
| (3) oil base plastisol print. | (9) Reactive print |
| (4) Flock print | (10) Burn print |
| (5) Foil print. | (11) Discharge print |
| (6) Puff print. | (12) Magic color print |
| (13) Glow in the dark print | |

Printing use in "H.R. Textiles Mills Ltd":

Pigment print:-

Pigment used in textile printing is mainly synthetic organic materials, except for carbon black, titanium dioxide and anatase types copper & aluminum alloys & sometimes iron oxide. When choosing these synthetic pigments, the price, the fastness properties, the brilliance & the coloring power of the many produce available are all taken into consideration. Pigments are various organic & in organic insoluble substances, which are widely used in surface coating.

Requirements of Pigment print:-

1. Pigment must have mixing ability.
2. Pigment should be non toxic.
3. Pigments have good covering power.

Chemical in use:-

@Water- 80kg
 @Binder- 15kg
 @Thickener- 5kg
 @&color

Time:-

@ 7.5 pieces/min

#Fault:-

@Color shade

@Design

@Placement design ok

Flock print:

The flock technique of printing designs with an adhesive and sprinkling with fine bits of wool or silk was probably first adapted to wallpaper. Fiber dust use with gum

Chemical in use:

@Powder with gum.

@Fixer add gum

@Fixer-1% & gum-100%

**#Time**

@7.5 pieces/min

#Fault:-

@Color shade

@Design

@Placement design ok

@Gum mistake then flock mistake

Foil print:-

Print some pattern with the foil on the fabric or paper for shinny effect. Foil print is the foil paper. it is heat transfer

Chemical in use:-

@Gum mix binder.

@Heat press foil.

@Time 10-15 sec & temp -160-165 c

#Time: -

@ 7.5 pieces/min.

@Fault:-

#Color shade

#Design

#Placement design ok

#Gum mistake then foil mistake& heat problem then print problem.

Glitter print:-

Glitter is the powder from. Fixer must be use.

>>>Chemical in use:-

@Binder – 100

#Glitter powder ----- 30-50

#Color in use

#Fixer— 1-2 %

#Time:-

@ 7.5 pieces/min.



@Fault:-

#Color shade

#Design

#Placement design ok

#Fixer cannot be use then glitter is damaged print.

>>>Discharge print:

Discharge means out of fabric colors. Activator must be use.

>>>Chemical in use:-

#White & clear

@Activator -->6-10%

@Time:-

#7.5 pieces/min.

#Fault:-

@Color shade

@Design



@Placement design ok
@Fabric must be discharge.
@White fabric is no print.

7. CONCLUSION:

During this thesis program we had tried to our best to done our duty. The officer's co-operation our in every steps, It is completely a new experience in our life, which will be very effective in our service life.

In this period we realized that practical experience is more valuable for service life. In this program contents some secret subject of factory is included. To collect this information like history of project development marketing strategy, costing of products etc. is a great problem as it is a secrete, For this reason we could not give correct information the report but try to understand those strategies which are important segments in our practical life.

We learned sample development, apparel costing, quality, banking, buyer negotiation by thesis .We learn how much fabric required 1 doz garments. How much thread required for 1 doz garments sewing and costing calculation etc. Bangladesh is a developing country .in this country unemployment problem is slightly overcoming by our garments or apparel sector. A huge number of people are working in this sector. Initially, the situation of this sector is not so good but now a day this sector is earning a lot of foreign currency, around 75%-80% of our total economic growth which is making our economic sector stronger. And merchandisers are those people who are working here day to night in order to develop this sector. Merchandisers' goal is to collect order, execute, develop the best & supply the best.

8. APPENDIX:

Figure:	Page
1. Change in combination of export product over time.....	9
2. Export from Bangladesh 1972-73 to 2009-2010.....	9
3. Export performance of knitwear of Bangladesh.....	11
4. Knitwear export to top 5 countries.....	12

5. Comparison of export quantity.....	12
6. Different Types of Button ,Accessories.....	33
7. Different Types of zippers.....	34
8. Knitwear with dummy in sample section.....	39
9. How to measure knit tees,fleece,&polos.....	40-42
10: Different types of printing.....	56-58

Table:

1. Bangladesh RMG export to world calendar year 2009-2010.....	10
2. Bangladesh RMG export to world July-December 2009-2010.....	11
3. Care instruction.....	27-31
4. AQL table (inspection table).....	32
5. Approx sewing thread consumption of different items.....	43
6. Machine wise sewing thread consumption/inch.....	43
7. Sea freight table.....	49
8. Difference between automatic print & hand print.....	53
9. Country & port.....	51

9. REFERENCE:

- H.R Textile Ltd
- www.bkmea.com
- Class lecture
- Garments Merchandising (M.A Kashem)
- Garments Manufacturing Technology (Md. Saiful Azam)
- Garments Production Management (Md. Omar Faruk)
- Technology Transfer in fibers textile & apparel (Gerand Korel Boon)

