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Supply Chain Management in Readymade Garment Industry of Bangladesh

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Abstract

The export-oriented readymade garment (RMG) manufacturing is one of the suitable examples of Supply Chain Management (SCM). The industry has some distinctive features, which differentiate it from other businesses. Wage, Supply chain, Lead time, and Compliances are among the most important features of this business. Each of four features is interrelated and interdependent. Among these features, effective Supply Chain Management (SCM) is the core one. A chain is as strong as all of its rings are. In RMG business there is a very strong correlation between business value chain and supply chain. The supply chain is mostly controlled by the buyers who control the business. Only lowest wage can't ensure the business. Without proper management in supply chain, it is not possible to comply with the lead time given by the buyer. The supply chain can be categorized into two phases: Macro level- part of global supply chain and Micro level - the supply chain system within the manufacturing unit. In supply chain system, it can be materials, information or it can even be supply of business (volume of business). Object of the study is to identify the interest group in supply chain, analyze the importance and difficulties of SCM and find out the solutions to overcome those difficulties.

Qualitative approach has been used and more emphasis given on primary data focusing on woven garments. In woven garments most of the items are imported including fabrics. So the scope of the research is within woven garments units. People having experiences for decades in various positions were interviewed in-depth. Political instability and workers unrest, disrupted road communication and power supply, inefficient pprt management are major issues to make the chain strong. Upgrading business model from CM based to FOB, direct marketing, elimination of middle men and reducing the dependency of materials on other countries, use of technology managing inventory can help to establish an effective supply chain system.

Keywords: Readymade Garment, Supply chain, Lead time, compliance.

Introduction

RMG manufacturing is one of the suitable examples of SCM. For example, design and development is done by any developed country like Germany, raw materials are sourced from developing countries like China, and merchandises are manufactured in Least Developed Countries (LDC) like Bangladesh and finally goods are sold to different developed and developing countries of the world. In RMG business value chain, manufacturing is in the lowest segment with highest risk. That's why this manufacturing function was never static in any particular region or country. Manufacturing RMG, as a labour intensive industry, always followed the countries where the lowest wage of labour was available. Interestingly, this low waged manufacturing industry has played as a "start up" industry of many developed countries. Before 1960s, developed countries like the UK and the USA used to procure garments from domestic firms. The following table shows the relocation of RMG production from high wage regions to low cost production regions. Improvement of global communication system and international trade policies made this shifting easier and quicker.

Table 1: Relocation of production

From	To	Period
North America and Western Europe	Japan	In the 1950s and the early 1960s
Japan	The Asian Tigers –South Korea, Taiwan, Hong Kong and Singapore	In 1970s.
The Asian Tigers	Other developingcountries Philippines, Malaysia, Thailand, Indonesia and China +	Mid1980s through the 1990s
Developing + LDCs	Sri-lanka, Bangladesh, Pakistan, India, Cambodia Vietnam and Myanmar	The 1990s

Among the four main stages of business modes, our participation is mostly in preliminary or entry stage i.e. CMT wheremaker gets cutting, making and trimming cost. Sometimes, buyers procure the materials from any third country and send it to the manufacturer on FOC (Free of Charges) basis and pay only cutting, sewing and trimming cost. Since most of the big retailers have their own offices in Bangladesh, they take the responsibility of trimming sourcing. Basically RMG in Bangladesh works on CM basis. The second stage of business mode is called Free on Board (FOB), from raw materials sourcing to delivery up to loading point where the responsibility goes to the factory. The price factory offers to the buyer includes raw materials cost + CMi.e. the price of fabrics, accessories including cutting and making charges. The possibility of earning is little more in FOBmode than CM or CMT. The RMG business

in our country is based on these two types of modes - CMT and FOB, where FOBratio is very low.

Other two stages are Original Design Manufacturer (ODM) and Original Brand Manufacturing (OBM). Unfortunately, these, high value segments, third and forth stages, remain far away to be reached by the industry even after three decades. Table 2 shows the difference between customer's buying price and manufacturer's charges in value chain.

Table 2: Global Value Chain andour value retention in per dozen)

Brand	CM/dz	FoB/pc	Price Tag/pc
1	$ 19.00	$ 7.55	$ 40.36
2	$ 18.5	$ 5.50	£ 12.00
3	$ 21.00	$ 8.60	£ 30.00
4	$ 15.50	$ 6.12	£12.00
5	$ 14.5	$ 6.88	$ 68.00
6	$ 21.00	$ 7.82	$ 62.00
7	$ 35.00	$ 6.28	£20.00
8	$ 16.5	$ 5.49.00	$ 59.50
9	$ 17.50	$ 6.80	Lira 44.30
10	$ 18.00	$ 6.80	SA r 180.00

In whole supply chain, Bangladesh does the manufacturing job but does not manufacture basic raw materials of the garment. Our competitors like China and India has their own sources of materials. Vietnam, Cambodia, needs only one week to receive the materials from Shanghai. So, lead time is another important issue of RMG business.

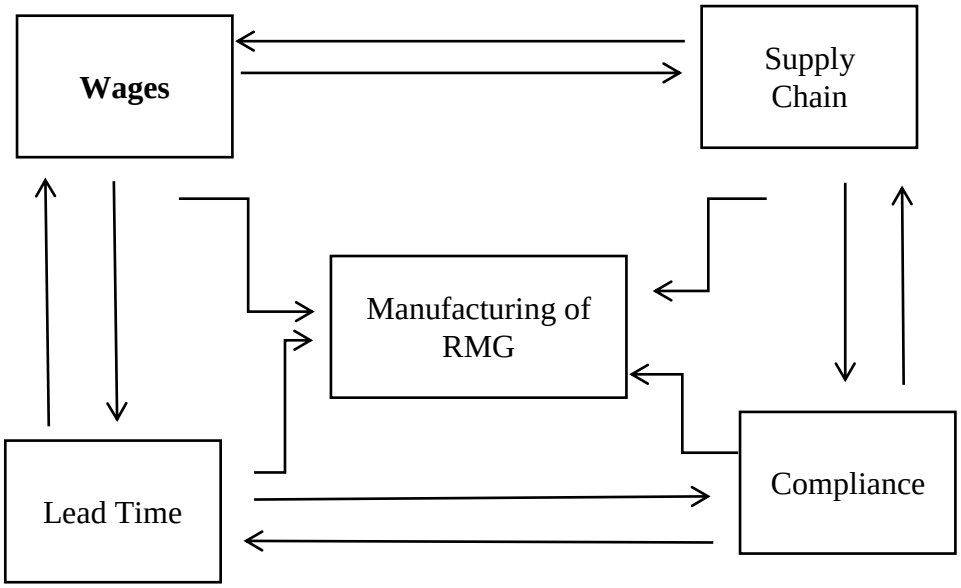

Diagram 01: main features and their interdependency in RMG business

Depending on style criticality and materials to be used, this time frame ideally was 120 – 150 days. On the contrary, this period has been shrunken remarkably. With the reduced time frame, production has to

take huge pressure. Political instability - hartals, strikes, workers unrest, port congestions, customs deficiency, shortage and failure of power and gas etc has been eating up the one forth of lead time. Moreover, failure of raw materials schedule along with partial or wrong delivery is a common phenomenon of the supply chain. For the business, the most challenging issue of the present time is supply chain.

As part of the international supply chain, a factory can't do whatever it needs to do to meet the lead time. The other main feature of the industry is compliance. The factories' activities are strictly controlled by the Code of Conduct (CoC) and they are also under constant monitoring by the buyers' nominated representatives. Materials are not available at the right time, compliance doesnot permit excessive work or no compromise with lead time. All this is really a quandary for the RMG industry.

Why Supply Chain Management is so Important

Apart from the ultimate consumer and manufacturer, there are many other parties in between, involved in RMG business. In many cases a work order comes to a manufacturer through four to five different hands/ phases. For example, A buyer in USA (ultimate customer/brand owner) confirms the business with an agent of that country. That agent has another agent in Hong Kong. Now many agents have their office in India. The agent in India has another agent in Bangladesh which is called “local agent”. That local agent communicates with the manufacturer. Tazreen Fashions where devastating fire incident took 113 lives of garment workers in 24 Nov 2012 had been working with Wal-martInc through an agent in New York named Success Apparels NY. Success Apparels NY gave the order to Simco Dresses Ltd Bangladesh, Simco Dresses Ltd made a contract with Tuba Fashions, Tuba fashions got the job done with Tazreen Fashions. Thus the things are getting done in our RMG sector.

Wal-Mart ⇩ Success Apparels NY ⇩ Simco Dresses Ltd ⇩ Tuba Fashions Tazreen Fashions	An ultimate Customer/ Brand owner ⇩ An agent of USA ⇩ Agent/ Office in Hong Kong ⇩ Agent/Office in India Agent in Bangladesh/ local agent Manufacturer

Each work order has its own schedule. The period from the order placement to shipment is called lead time. Amanufacturer chalks out a

critical path to complete the work within that lead time. Usually, buyers allow 60-90 days for awoven garment order, where principal materials are imported. On the other hand, it is only 30-60 days for knit items asfabrics are mostly procured from local sources. In most of the cases, buyers are uncompromising in their lead time. Local Problems are not the buyers' concern; rather sometimes they take the advantage of the situation.

One small materials missing or delayed mismatch full order at stake. One single order delivery schedule failing jeopardizes the whole production plan. Unplanned and earlier importation of material increases inventory level. Delayed in-house of materials create line gap. Both the situations have a negative impact on finance. On the other hand, if the finished goods are not shipped on time due to not getting the approval factory has to pay the bills of BTB L/Cs against bank loan with high interest. So factory always tries to avoid delay shipment even covering the delay with overtime work which incur double cost of production. When this overtime work does not help then they take the risk of un-authorized sub contract. Excessive overtime work and un-authorized subcontract both are the violation of compliance, another inevitable feature for the industry.

In short the importance of supply chain can be pointed out as below -

a. To keep the manufacturing activities under discipline
b. To accommodate with shorter lead time
c. To avoid over/under inventory
d. To minimize wastage of money
e. To run the company efficiently
f. To ensure sustainable growth

Objectives of the Study

Readymade garment industry has been passing through many difficulties which the industry has never faced before. Devastating fire in Tazreen fashions and Rana Plaza collapse have raised the question of its capability in terms of compliance, fire safety and building integrity. Only minimum wage competitiveness does not guarantee of international business of this kind. Hundreds of factories are closed, thousands of workers have lost their jobs, many factories are running under capacity even after accepting the business at cost price. For the first time growth of our RMG export has fallen down mainly on compliance ground. Non functional supply chain increases production cost. Owners consider any investment on

compliance as another cost. So to ensure compliance there is no way to enforce effective SCM.

Among the four important features proper supply chain is the key to others. All the features is interrelated and interdependent. All of our competitors have the advantage in lead time, they are in better position in supply chain and compliance. Our main competitiveness is low wage. Only wage competiveness alone can't ensure business growth and sustainability.

To meet the short delivery time and to minimize stock level and wastage, to reduce extra load on finance and to gain customer satisfaction there is no alternative to an effective SCM system in place.

In the whole supply chain system the parties involved are- Business provider, Manufacturer of materials, Manufacturer of finished goods and Brands. Moreover, some other parties involved in the chain connect the parties like Freight Forwarder, Career (Main Line Operator), Bank, Customs, Export Promotion Bureau (EPB) Port, Transport, Clearing and Forwarding (C & F) agent etc. It is a difficult job to make an effective coordination among all the parties. Common interest and business relationship can make a strong bondage in macro level SCM. On the other hand, proper planning and co-ordination among the departments inside the company are very important to make the system effective.

My object of the study is to identify the interest group in supply chain, analyze the importance and difficulties of SCM and find out the solutions to overcome those difficulties.

Macro Level Activities

Macro level SCM system involves the parties in different companies of different countries like suppliers, manufacturer, and brands. In global or macro level links, relationship and commitment of different suppliers, services of bank, ports, customs along with transportation, documentation are very interconnected. If the the parties involved work jointly then it is possible to render an effective management system. This is a team work. Non performance by any member of the team is enough to lose the game. We can classify macro level activities into two stages like pre-productionand post-production.

Pre-production Activities

1. Development and Order confirmation Member from Marketing and/or Merchandising team negotiates and confirmsorder based on style, price, delivery date and prepares a critical path to execute the order within the time frame.
2. Sampling and Material booking Based on buyer's given specification sample section makes the samples(prototype) of different types like - development, style, pre-production, size set etc. and sends to the buyer

for their comments and approval. Simultaneously, merchandising team confirms the materials booking with concerned suppliers. For any CM order buyer nominates the supplier and fixes the price; it's the manufacturers' liberty when the business mode is FOB.

3. Master L/C, Sales/Purchase Contract After the confirmation of business, buyer provides with the Letter of Credit (L/C, also called Master L/C) or purchase contract in favour of manufacturer where terms and conditions of the business including unit price, shipment date etc are cited.
4 BTB L/C to procure the materials to be used in garment production manufacturer opens the L/Cs infavour of suppliers which is called back to back L/C.
5. Pre-production meeting After having all the materials along with approval, a pre-production meeting is required among technical, production, quality, and store people in presence of buyers' representative to run the production smoothly. This meeting determines the men, machines and production lines required to meet the target shipment date.

Post-production Activities

When goods are ready, final inspection is offered. If the merchandises pass in inspection then factory send the goods to the port – sea or air, according to mode of shipment.

Macro level Links -

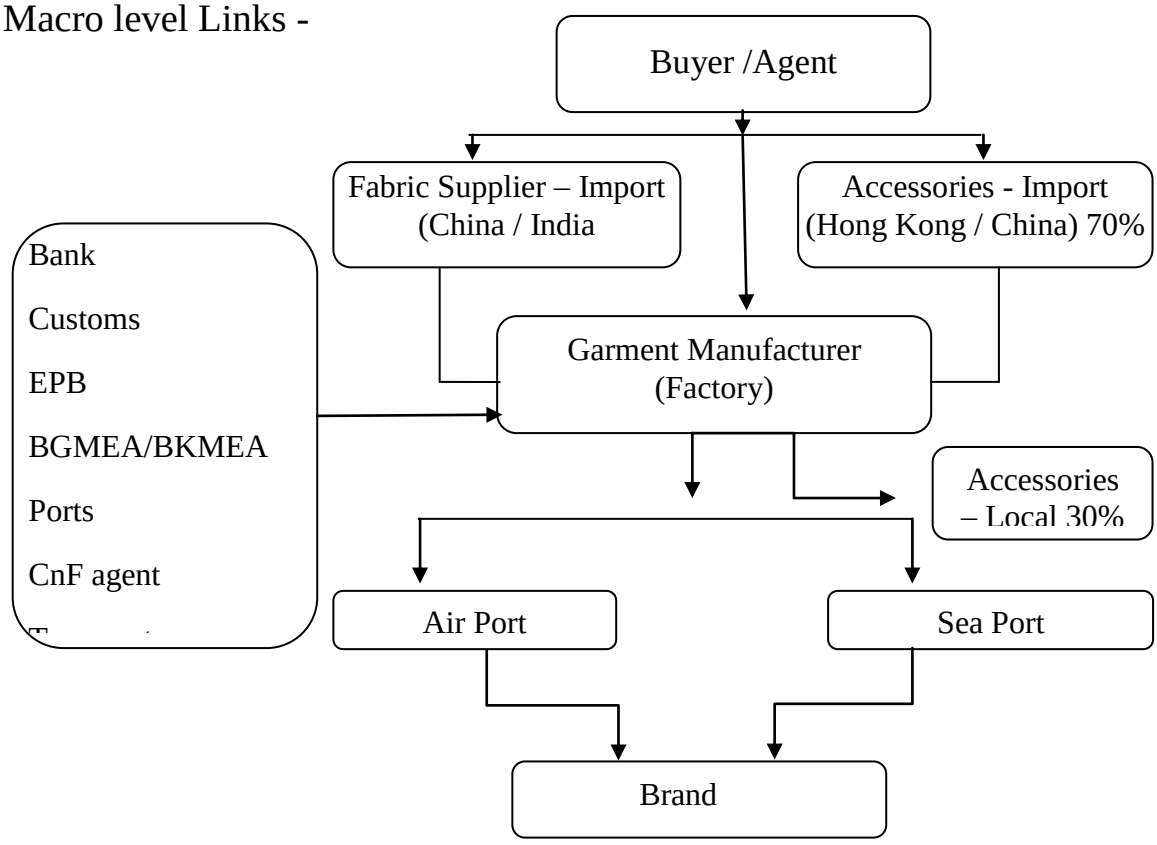

Diagram 02: Links of Macro Level or Global supply Chain

Micro Level Activities

There are basically two types of functions – a) Service, where the persons deal with buyer, suppler, involve in documentation etc are sitting, called Head office b) Production, where production operation activities are performed, called Factory. Even within the production operation there are many departments involved. The links between factories and head office or among the departments of the factories can be classified as micro level.

Production Activities

The total production process can be divided mainly into three sections - cutting, sewing and finishing. The process of sewing, from front placket joint to button joint, is called line, in case of woven top garments. The size and capacity of any factory is determined by the number of lines. This is not irrelevant to mention here that we have huge numbers of factories with small capacity/lines. A plastic button, mismatched sewing thread, shortage of size or care label can stop whole the production line.

Micro Level Links –

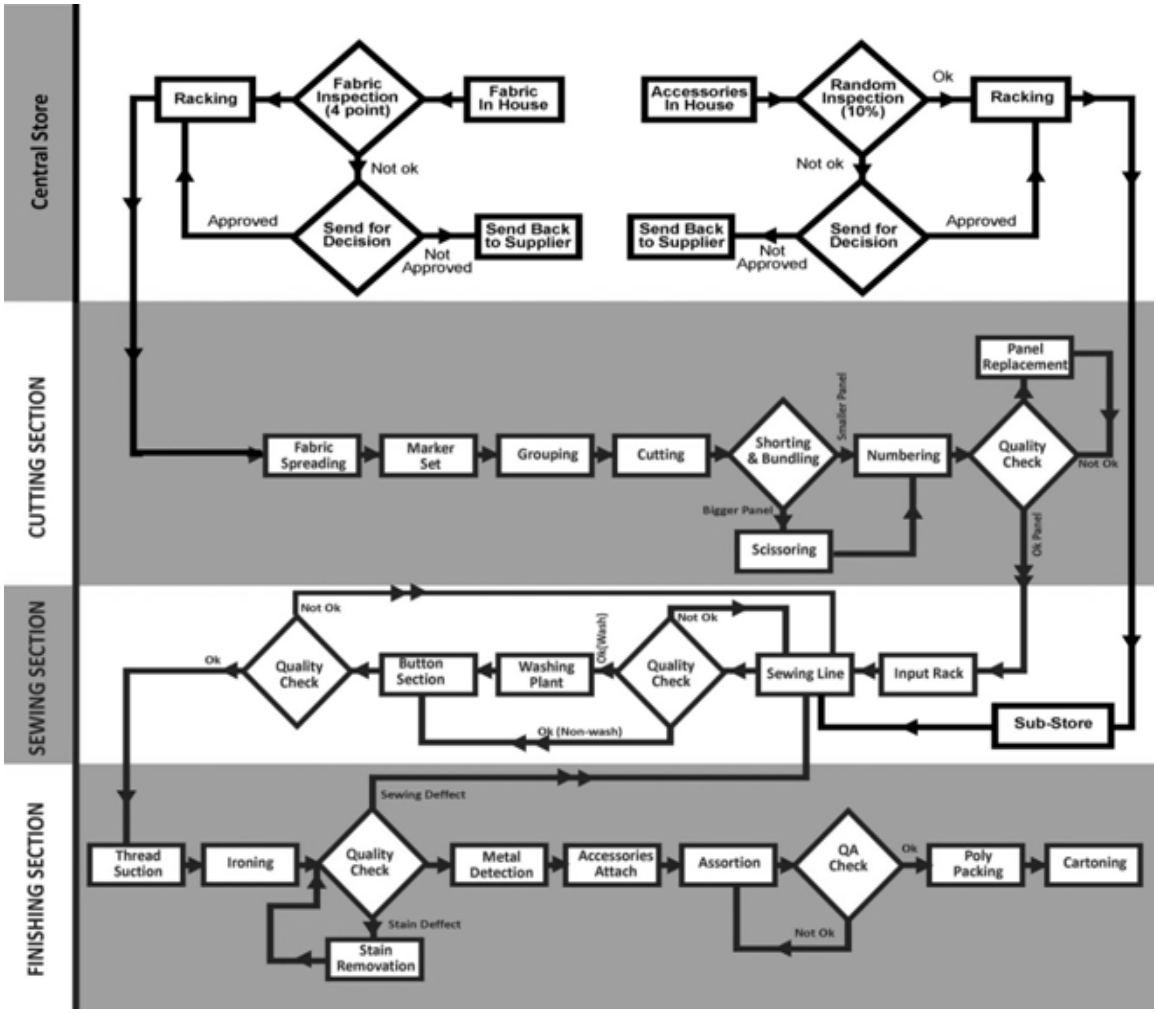

Diagram 03: Supply chain Links of Micro Level or within the Manufacturing unit

An Empirical Analysis

I have already mentioned that RMG is a buyer dominating supply system where garment makers have a very limited role as most of the businesses in our country are of CM based. Unfortunately, even with a limited role in supply chain, factory has to face tremendous pressure to meet the lead time. In this particular business, suppliers are not static and a huge number of suppliers are involved to make a single shirt of a particular style. For the same buyer it's not necessarily that suppliers list and items will the same. The number of suppliers varies depending on style specifications. Mr Kajal, leading a team of merchandisers, informed that there are almost 20 items required for a single shirt.

Table 03: A list of common items/materials

Product	**Items**		
	Main	**Sewing**	**Finishing**
Mens' woven Shirt	Fabric	Thread, Button, Interlining, label (main, size, fit, care, barcode), Zipper , Elastic etc.	Pin, Poly, Carton, Plastic clip, M-Clip, Butterfly, Neck board, Back board, Collar insert, Collar bone, Poly sticker, Tag pin, Carton sticker, Price ticket, Tie (if needed).

A factory dealing with 15 buyers has to handle at least 100 suppliers. Mr. Kajal also said that most of the factories run their operation in traditional system i.e. not having any modern information system. In CMT based order buyer or their local agent control the suppliers. They communicate with them, collect Pro-Forma Invoice (P/I) and forward the same to the factory to open BTB L/C infavour of supplier. Sometimes local materials are sourced by the factory.

To combat with the shrunk lead time industry needs to improve in SCM system. Mr. Nurul Kabir, started his career in 1997 as a merchandiser, now running a buying house, told that buyer wants everything ready and instant. Online costing and biding orders are now common for which they took 2 - 3 weeks. He was allowed 120 days in case of solid fabrics and it was 150 days for yarn dyed. Now he is having 60 -75 days and 90-120 days respectively.

He further added that in repeat orderit is within 45 – 60 days against the garments with local denim fabrics. Another Marketing in-charge of composite-knit division explained how they are to manage shorter lead time. They keep the fabric ready in grey condition. After having the style details they go for dyeing thus they can manage the lead time within 30–

45 days for repeat orders and for fresh order, buyer does not allow 60–75 days which was 90–120 days earlier.

Mr Hoque, almost for two decades with the industry and responsible for marketing, explained this issue differently. In CM orders everything sourced by the buyer, they have an arrangement with the fabric mill. They develop the fabric and send to garment factory on FOC (Free of charge) basis. Factory has to consider transit and production time. Thus they are getting 60 days lead time and in case of FOB orders they need 90 – 120 days depending on fabric quality.

Mr Alam deals with trouser factory which gets 120 days for fresh orders and imported fabric but he is not given more than 75 days for repeat orders with local fabrics and it is 90 days for fresh order with local fabrics. This is important to mention here that in knit and denim fabrics category Bangladesh is almost self reliant. From the above interviews I can compare the lead time extension in two different periods as below –

Table 04: Previous and Present Lead Time

Year	2000	2014
Woven	120 – 150 days (imported)	60- 75 local
		90- 120 imported
Knit	90 -120 days – local	30 – 45 days repeat
		60 -75 days fresh

Mr. Tofazzal, factory manager of twenty one lines, commented that above shortened lead time keeps our production team under huge pressure. Our workers' skills and productivity also increased than that of decades before.

Ms Shohely Shuraya, a merchandiser in a shirt factory deals with five customers of different countries. To manage all those customers she follows a Critical Path System. According to her in more than 90% cases she can't maintain initial plan.

In the critical path she keeps an order status under three phases – a) Plan: She makes plan based on order confirmation with the buyer, it's a both-parties agreement. b) Forecast- after getting the information from fabric supplier on ETD (Expected Date of Departure) she forecasts a date of fabric arrival c) Actual – It's the date of execution of any plan.

Table 05: Deviations among plan, forecast, and actual dates

Order #	Order qty		Input	Production complete	Remarks
1608	8000	PLAN	9-Aug-14	6-Sep-14	4 days earlier from plan but 5 days later from forecasted date
		FORECAST	12-Aug-14	27-Aug-14	
		ACTUAL	16-Aug-14	2-Sep-14	
1609	6000	PLAN	25-Aug-14	22-Sep-14	5 days later from plan but 1 day later from forecasted date
		FORECAST	5-Sep-14	21-Sep-14	
		ACTUAL	11-Sep-14	27-Sep-14	
1610	6500	PLAN	28-Jul-14	25-Aug-14	7 days later from plan
		FORECAST	12-Aug-14	25-Aug-14	
		ACTUAL		2-Sep-14	
1611	6000	PLAN	28-Jul-14	25-Aug-14	20 days later from plan, 7 days later from forecast
		FORECAST	24-Aug-14	8-Sep-14	
		ACTUAL	27-Aug-14	15 Sep 14	
1612	6000	PLAN	28-Jul-14	25-Aug-14	7 days later from plan , 8 days later from forecast
		FORECAST	12-Aug-14	24-Aug-14	
		ACTUAL	16-Aug-14	2-Sep-14	
1613	6000	PLAN	7-Aug-14	4-Sep-14	13 days later from plan 9 days from forecast
		FORECAST	25-Aug-14	8-Sep-14	
		ACTUAL	28-Aug-14	17 Sep 4	
1614	8000	PLAN	2-Aug-14	30-Aug-14	
		FORECAST	23-Aug-14	8-Sep-14	
		ACTUAL	28-Aug-14	20-Sep-14	
1615	8000	PLAN	2-Aug-14	30-Aug-14	25 days late
		FORECAST	24-Aug-14	10-Sep-14	
		ACTUAL	26-Aug-14	25-Sep-14	
1626	6500	PLAN	25-Aug-14	02-Sep-14	Maintained planned date even after 5 days later start
		FORECAST	20 Aug 14	27 Aug-14	
		ACTUAL	30-Aug-14	02-Sep-14	
1627	6000	PLAN	27-Aug -14	03-Sep-14	Maintained planned date even after 9 days later start
		FORECAST	30-Aug-14	05-Sep-14	
		ACTUAL	6-Sep-14	03-Sep-14	

Out of above ten orders none of them was shipped as initially planned. Sometimes factory has to maintain shipment date even after 10 days late start due to buyers fault. The import department provides the vessel position of imported materials against any particular order(s) and updates

the clearing documents' status. Basedon the forecast vessel and tentative clearing date, the production planning department allocates the production line (s) inconsultation with all concerned to catch the buyer's nominated and approved vessel. In chain-production process, the whole function might collapse due to any missing or weak links. At the time of import, if any container rolls over at transit or gets delayed inclearing or piling at ports due to hartal or other political programmes, the production lines will remain vacant. Contrary, buyers make plans to display their products at the showrooms based on their pre-approved vessel's ETA (expected time of arrival). Their advertisements reach the customers accordingly, and if it is for the manufacturers' fault, then they do not usually extend their shipment date. Ultimately, the manufacturers have to complete the air freight at their cost to meet the buyers' ETA. Apart from materials, hartals or agitation programmes multiply absenteeism– a very common problem forthe industry. To cover the target production, a factory has to pay overtime, extra-overtime to the workers. Even this excessive work is not possible as needed, on non-compliance ground.

Difficulties in Supply Chain Management

Mr. Tofazzal, factory manager of twenty one production lines, pointed out the reasons of mismatching supply chain. Due to multiplicity of the stakeholders/middlemen, it takes a lengthy process for any decisions. Pending approval kills the lead time. On the contrary, buyer does not deviate, in most of the cases, from his initial shipment date. The ultimate customers are reluctant and sometimes do not agree to extend the shipment date though buyers' nominated supplier has made the delay. The reasons for mismatching the plan, according to Mr. Tofazzal, are as follows –

Macro Level – beyond Factory Control

1. Delayed and wrong supplies of materials
2. Delayed approval
3. Style changes after confirmation or even production starts
4. Fabric fails in test requirement
5. Pilferage/missing in transit or at ports, especially from airport

Micro Level – within Factory Control

1. Lack of co-ordination among the departments
2. Workers absenteeism and migration

3. Low productivity of our workers
4. Unskilled workers
5. Problem with line balancing
6. Low productivity of our workers
7. Short quantity with critical process
8. Disrupted utility supplies
9. Wrong consumption due to incorrect fabric wash result

Not only the buyer, supplier or factory, there are many other reasons behind to disrupt the supply chain like port congestions, customs bureaucracy, high- ways transit time, political and workers unrest etc.

How to Overcome the Difficulties

Evidences show that in 70% cases it is buyer's responsibility and 30% is manufacturers. Everybody needs to be committed to maintain the given schedule. Factory should be given the needed production lead time which was in initial stage. But in many cases they do not extend delivery date. Direct marketing and elimination of middle men can help to establish an effective supply chain system. It is very difficult to make a combined and coordinated system among the interest groups involved at present. Miscommunication, misinformation at any point hampers the whole process. Apart from those parties, there are also involvements of freight forwarder, career, post, customs, transport etc. in the chain. Moreover, the impact of political instability and workers unrest are another concern to destabilize SCM. Undisrupted road communication, efficient port management, elimination bureaucratic aptitude of customs can help in the advancement of the process. Implementation of technological support can play as a catalyst to overcome the challenges. Without combined effort and firm commitment from all concerned, a performance based supply chain system is not possible. The following measures can be taken to improve the supply chain system in our RMG sector.

Macro Level

1. Initiate positive branding, promotional activities about the sector by the government and associations.
2. Capability of direct marketing and eliminate middlemen from the chain system.
3. Establish better business and trustworthy relationship between buyers and suppliers
4. Reduce dependency on other countries for raw materials

5. Political commitment not to hurt the sector by any quarter
6. Make sure undisrupted utility supplies and develop physical infrastructure
7. Eliminate bureaucratic red tapismfrom customs, port management and other concerned government agencies
8. Minimize corruption, political interference

Micro Level

1. Adapt changing technologies like Lean, ERP, SAP etc
2. Develop coordination between office and factory, among the different departments
3. Take initiatives to increase efficiency of the workers
4. Try to retain the workers and avoid migration
5. Need proper achievable planningand target

Conclusion

A chain is as strong as all of its rings are. Similarly, a chain is as weak as one of its rings is weak i.e. one single ring is more than enough to make the whole chain system dysfunctional. RMG industry in our country so far has been enjoying very clear price competitiveness. The rate of minimum wage in our country is still lowest among our competitors. But we have huge pressure on lead time. Chief labour does not help if they are not efficient. In the evolving of fast fashion, both quantity and time is a big deal. A small quantity with many styles in a short time is not possible without a functional supply chain. Reducing the dependency of materials on other countries is vital to make the chain strong. Only minimum wage competitiveness will not guarantee future business. Without proper management in supply chain, only wage competitiveness can’t ensure sustainable business. So for the sake of the industry, we have no alternative to making an effective SCM.

References

Islam, Mohammad Safiqul, (n.d), "Supply Chain Management on Apparel Order Process: A Case Study in Bangladesh Garment Industry". http://www.ajbms.org/articlepdf/7ajbms2012282716.pdf, Accessed: 11/12/2014

Asgari, Behrooz and Md Aynul Hoque,(2013), "A system dynamics approach to supply cha performance analysis of the ready-made-garment industry in Bangladesh". http://www.apu.ac.jp/rcaps/uploads/fckeditor/RJAPS32-5-Asgari.pdf, Accessed: 10/11/2014

Tanvir, Saiful Islam and Noorul Muqaddim, (2013), "Supply Chain Management"- Offering the New Paradigm for Bangladesh Garment Industry". Journal of Economics and Sustainable Development 0, ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online) Vol.4, No.20, 2013 http://www.iiste.org/Journals/index.php/JEDS/article/viewFile/9822/10027 Accessed: 10/11/2014

Paneru, Naresh,(2011) "Implementation of Lean Manufacturing Tools in Garment Manufacturing Process Focusing Sewing Section of Men's Shirt". oulu university of applied sciences, Uusikatu 2, 90100 OULU http://www.garmentbusiness.biz/upload/lean.pdf Accessed: 10/11/2014

Koprulu, Asli and M. Murat Albayrakoglu, (2007) "Supply Chain Management in the Textile Industry: A Supplier Selection Model with the Analytical Hierarchy Process". ISAHP 2007, Viña Del Mar, Chile, August 3-6, 2007 http://www.isahp.org/2007Proceedings/Papers/Working%20Sessions/Suppliers%20Selection/Supply%20Chain%20Management%20In%20The%20Textile%20Industry.pdf, Accessed: 12/10/2014.