Optimizing profit margin by improvement in supply chain in pre-production activities at Shahi Exports (Unit 12)

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Introduction to Shahi Exports Pvt Ltd (Unit 12)

Shahi Exports Pvt Ltd	
States across India	9
No. of employees	Over 100,000
No. of manufacturing units	65
No. of mills	3
No. of garments per year	Over 144 million

Problem

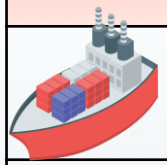
PCD (Planned Cut Date) is not being met due to delay in different preproduction activities

Leads to deviation from the ex-factory date

Air shipment instead of vessel shipment (Comparison for air & vessel shipment is given in the next slide)

Affects profit margin of the company

Reason for this project

Comparison between Vessel Shipment & Air Shipment				
 By Sea			By Air 	
Container Size	**Weight**	**Price**	**Slab Size**	**Price**
20 ft container	25400 kg	$1300	+45 kg	150/Kg
40 ft container	26300 Kg	$2000	+300 kg	130/Kg
			+500 kg	110/Kg
			+1000 kg	90/Kg

For 25400 Kg by Air, it costs = INR 25400x90
= INR 228600
= USD $ 3194.12 **(2.46 times of vessel shipment price)**

Objective

Primary Objective

Finding out the major delay areas in pre production and suggesting solution to reduce the deviation from the planned T&A

Secondary Objectives

- To identify the non-value added activities and suggesting some techniques to improve the supply chain
- To take a survey of the employees and to know whether they are aware of the loopholes or is there any other way they can improve in

Literature Review

- Area of pre-production has been studied by many researchers in the past, have also been highlighted in papers related to Supply Chain Management (Global and Indian).

- Reports from AEPC, IIFT, magazines like Apparel Online

- Journals of Fashion Marketing and Management, International Journal of Textile and Apparel Technology, International Journal of Clothing Science and Technology. Reports from Apparel and Textile Challenge, Industry Forum (UK), Conference papers from Textile Institute (UK), dissertations at Nottingham Trent University (NTU), (Indian Institute of Technology (IIT), and National Institute of Fashion Technology (NIFT) as well as internship reports at the last named Institute.

- Research reports of industry & Buying House

Pre – Production Activities

According to various surveys & reviews (Reference -), Pre- Production activities are-

- Meeting with buyers
- Development of initial samples for the buyer
- Development of fabric sample, bit loom, print and embroidery artwork
- Costing of a garment (complete cost as well as manufacturing cost)
- Pattern making, correction of pattern, pattern grading
- Fit sample, size set sample making and approval from buyer
- Correction of fit samples according to buyer comments
- Approval process
- Production planning, Material planning and line planning
- Placing an order for fabrics, trims, accessories and packing materials
- Testing of fabrics and other raw materials
- Study of approved sample
- Pre-production meeting

Contribute 65%-70% of the total delay

Research Methodology

Problem identification & department study

Establishment of the problem

Designing & conducting a survey to know the major delay reasons

Analysis of survey results & supporting data to propose a solution

Designing & developing An Order Tracking System

Analysis of cost, profit & advantages

Suggesting some ideas to remove some non value added process

Time & Action Calendar

- Time & Action Calendar of the unit was collected
- Data regarding various parameters were collected to compare with the standard time & action calendar and to see that there are deviations in many areas
- Delay chart for randomly selected orders (10 from 4 buyers – Eddie Bauer, Izod, DKNY, Uniqlo)

Sample Size Determination for Survey

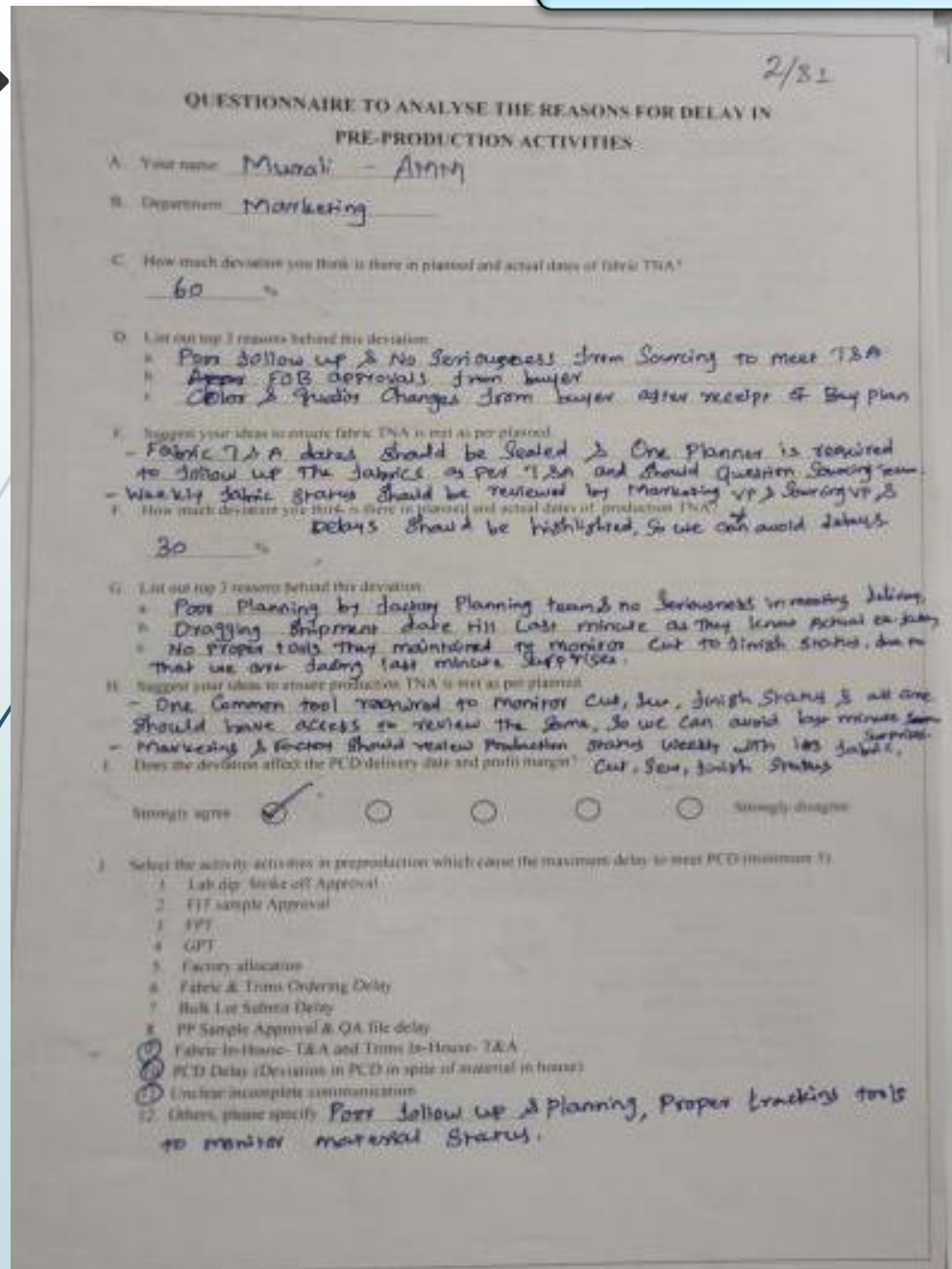
- Population is taken as the total employee strength of the depts related to pre-production activities

Department	Employee strength
Marketing	120
Sampling	98
Planning	40
Sourcing (Fabric)	48
Sourcing (Trims)	30
Store	25
BI	12
Total	**373**

Taking Confidence level 95% and margin of error 3%, we get Sample size- 81

- **Framing the questionnaire – 9 days**
- **Survey – 26 days**

Questionnaire



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QUESTIONNAIRE TO ANALYSE THE REASONS FOR DELAY IN PRE-PRODUCTION ACTIVITIES

A. Your name: Murali - Anna

B. Department: Marketing

C. How much deviation you think is there in planned and actual dates of fabric TNA?
60 %

D. List out top 3 reasons behind this deviation
a. Poor follow up & No Seriousness from Sourcing to meet T&A
b. Approx FOB approvals from buyer
c. Color & Quality Changes from buyer after receipt of Buy plan

E. Suggest your ideas to ensure fabric TNA is met as per planned
- Fabric T&A dates should be Sealed & One Planner is required to follow up the fabrics as per T&A and should Question Sourcing team.
- Weekly fabric status should be reviewed by Marketing VP & Sourcing VP &

F. How much deviation you think is there in planned and actual dates of production TNA?
30 % Delays should be highlighted, So we can avoid delays.

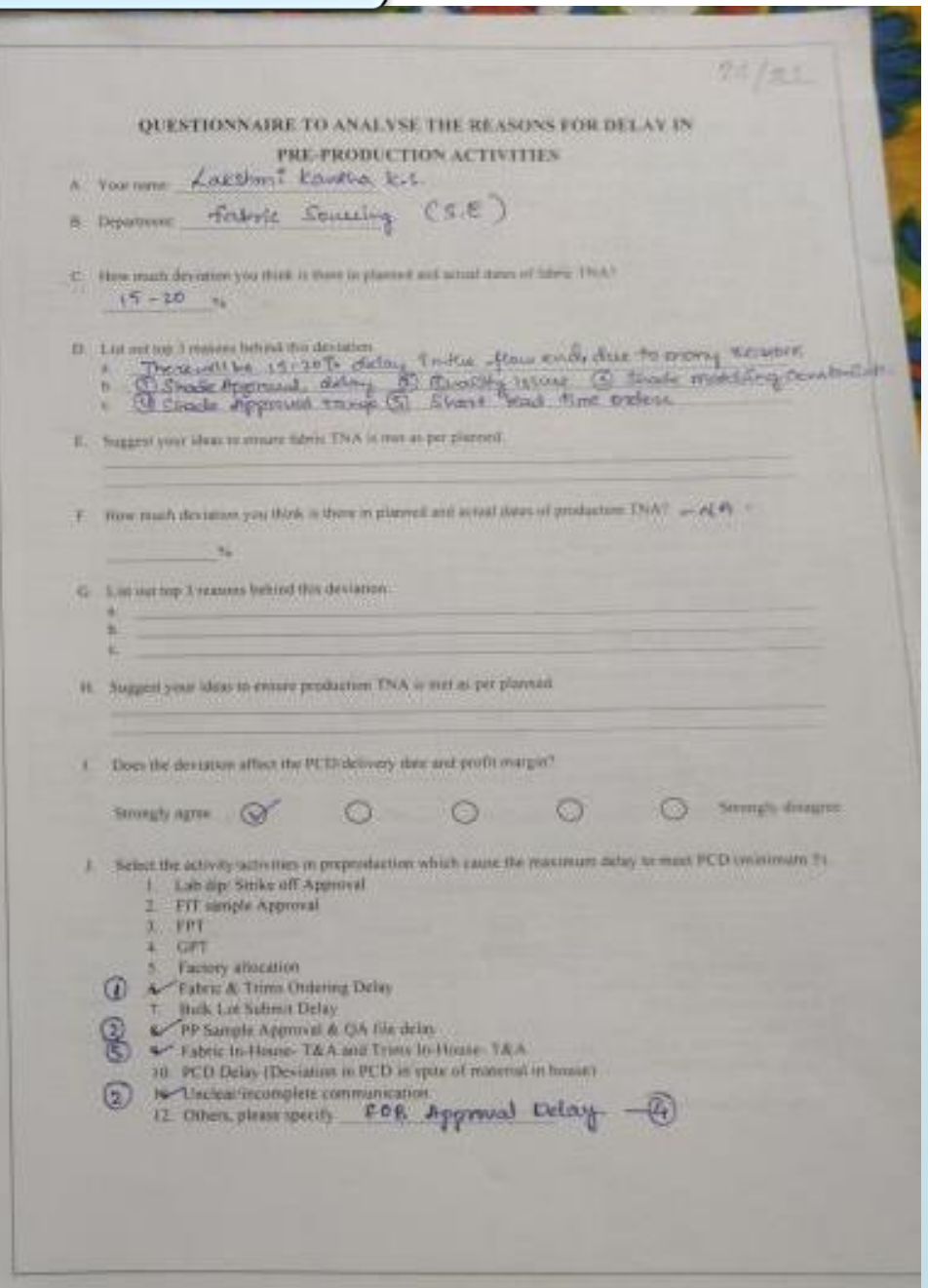
G. List out top 3 reasons behind this deviation
a. Poor Planning by factory Planning team & no Seriousness in meeting delivery.
b. Dragging Shipment date till Last minute as they know actual ex-factory
c. No Proper tools they maintained to monitor Cut to finish status, due to that we are facing last minute Surprises.

H. Suggest your ideas to ensure production TNA is met as per planned
- One Common tool required to monitor Cut, Sew, finish Status & all are should have access to review the same, So we can avoid last minute Surprises.
- Marketing & Factory should review Production status weekly with last status.

I. Does the deviation affect the PCD/delivery date and profit margin? Cut, Sew, finish Status

Strongly agree ✓ ○ ○ ○ ○ Strongly disagree

J. Select the activity activities in preproduction which cause the maximum delay to meet PCD (maximum 5)
1. Lab dip/ Strike off Approval
2. FIT sample Approval
3. FPT
4. GPT
5. Factory allocation
6. Fabric & Trims Ordering Delay
7. Bulk Lot Submit Delay
8. PP Sample Approval & QA file delay
9. (3) Fabric In-House- T&A and Trims In-House- T&A
10. (4) PCD Delay (Deviation in PCD in spite of material in house)
11. (5) Unclear/incomplete communication
12. Others, please specify: Poor follow up & Planning, Proper tracking tools to monitor material Status.



QUESTIONNAIRE TO ANALYSE THE REASONS FOR DELAY IN PRE-PRODUCTION ACTIVITIES

A. Your name: Lakshmi Kavita K.S.

B. Department: Fabric Sourcing (S.E)

C. How much deviation you think is there in planned and actual dates of fabric TNA?
15 - 20 %

D. List out top 3 reasons behind this deviation
a. There will be 15-20% delay in the flow ends due to many reasons
b. (3) Shade Approval delay (2) Monthly issue (4) Shade matching problem
c. (4) Shade Approval issue (5) Short lead time orders

E. Suggest your ideas to ensure fabric TNA is met as per planned

F. How much deviation you think is there in planned and actual dates of production TNA? ~ 4(4)
%

G. List out top 3 reasons behind this deviation
a.
b.
c.

H. Suggest your ideas to ensure production TNA is met as per planned

I. Does the deviation affect the PCD/delivery date and profit margin?

Strongly agree ✓ ○ ○ ○ ○ Strongly disagree

J. Select the activity activities in preproduction which cause the maximum delay to meet PCD (maximum 5)
1. Lab dip/ Strike off Approval
2. FIT sample Approval
3. FPT
4. GPT
5. Factory allocation
(1) 6. ✓ Fabric & Trims Ordering Delay
7. Bulk Lot Submit Delay
(3) 8. ✓ PP Sample Approval & QA file delay
(5) 9. ✓ Fabric In-House- T&A and Trims In-House- T&A
10. PCD Delay (Deviation in PCD in spite of material in house)
(2) 11. ✓ Unclear/incomplete communication
12. Others, please specify: FOB Approval Delay — (4)

Conclusion on analysis of the survey results

A proper order tracking system linked with all the departments will help in more effective order execution.

Streamlining of some of the processes in the critical areas will help in reducing delay.

Order Tracking System - Objective

- To provide a simple and user friendly platform which is interlinked with all the departments
- Anyone can see the current status of one order
- Remarks can be given and necessary actions can be taken.
- Delay of critical activities, system will generate an alert notification.
- Link - http://ots-shahi.000webhostapp.com/shahi
- After the analysis of the survey it is expected that the delay can be reduced by 8 - 10% with a proper follow up system

Order Tracking System - Design

Trims Sourcing	•	Trims Code Updation in FD&A
	•	Trims PDS Updation
	•	Trims Order sent to supplier
	•	Trims PO Approved
	•	Trims FOB received [Link with Merchandising]
	•	Trims Bulk flow start [Link with Merchandising]
	•	Trims Bulk flow end [Link with Merchandising]
	Dates which will be shown in Store:	
Store	•	Fabric Inspection
	•	Trims Inspection
	•	Bulk fabric Issue to production start [Link with production]
	•	Bulk fabric issue to production end [Link with production]
	•	Bulk trims issue to production start) [Link with production]
	•	Bulk trims issue to production end [Link with production]
	Dates which will be shown in LAB:	
Lab	•	Lab dip request sent to mill
	•	Lab dip submitted to Merchandising [Link with Merchandising]
	•	FPT Report sent to Merchandising [Link with Merchandising]
	•	GPT Report sent to merchandising [Link with Merchandising]
	Dates which will be shown in Sampling:	
Sampling	•	Pattern Development (PP)
	•	Sewing & Finishing (PP) [Link with Merchandising]
	•	Inspection & handover to merchant (PP) [Link with Merchandising]
	•	Pattern File Sent to Production [Link with production]
	Dates which will be shown in Production:	
Production	•	Bulk Fabric Inspection in factory
	•	Bulk Pattern & initial marker development
	•	Bulk Cutting end date
	•	Bulk Sewing start date (with inspection)
	•	Bulk Sewing end date (with inspection)
	•	Packing
	•	3rd party inspection
	•	Shipment start

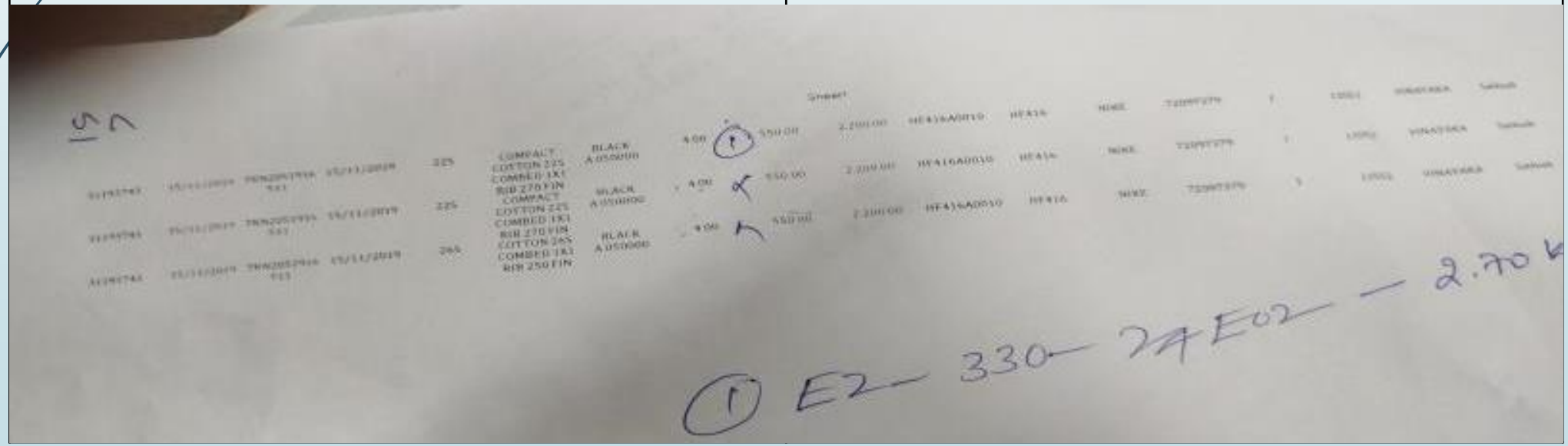
Costing & Conclusion

For Vessel Shipment	Assuming 20% of the qty has to be delivered by air	If we consider air shipment is reduced from 20% to 15%
➢ A 20 ft container can contain around 25,400 kgs ➢ Cost of vessel shipment of 20 ft container is $1300. (INR Rs. 97500).	➢ 20% of 25400 kg = 5080 Kg ➢ Avg air shipment cost is Rs. 90 per Kg (when weight is more than 1000 kg). ➢ For 5080 Kgs, air shipment cost will be = Rs. 457,200	➢ 15% of 25400 kg = 3810 kg ➢ Air shipment cost = Rs. 342,900 ➢ So, per container Rs. (457,200 – 342,900) = Rs. 114,300 can be saved.

- As for trial run, cost for developing the software – Rs. 8000, Renewal of hosting and domain cost – Rs. 1500
- Adding up implementation, training & server maintenance, it can go up to Rs. 15000,
- When implemented & run professionally many other charge will add up and it can go till 60,000 – 80,000 or bit more depending upon the addition of features
- We consider, the whole cost of the software will be 80,000 at first.
- Using this , company can save up to Rs.114,300 in the first vessel shipment
- **Gives a profit of Rs. (114,300 – 80,000) = Rs. 34,300**

Process Streamlining

Current Scenario	Suggested
➢ For fabric stock data, merchant manually goes to store with dispatch details (it is supposed to be updated in the system) ➢ Store people takes min 20 minute (each time) to check rack physically and give data	✓ Training to store people for regular update in the ERP system ✓ Training to merchants to learn the correct path in ERP to find the data ✓ 7 times (3 times updated, 4 times not updated)



Future Scope

Observing the result of the software system & calculate the exact optimization of profit margin

Integrating the software with existing ERP System

Streamlining other processes found from the survey

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Thank You