


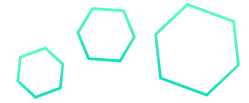
The logo for PIMTE, consisting of the letters P, I, M, T, and E in a bold, blue, stylized font. The letters are blocky with some internal cutouts, giving it a modern, industrial feel.

**PIMTE**

Three light blue geometric shapes (hexagons and a heptagon) arranged in a cluster in the top right corner of the slide.

Textile Machine (Tapeline  
Machine) Assembly -  
Industrial Engineering Study

# Project Background



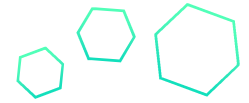
## Objective

- Work Content Calculation for Tapeline Assembly Unit
- Work Standardization using SWCT
- Increasing per month Capacity
- Manpower Deployment for varied demand

## Challenges

- Product is huge in size and cycle time is high
- Product itself is assembly of around 6 Nos of Machines/Units

# Approach



## ■ Project Kick Off

- Existing Facility Walk Through
- CFT Formation

## ■ Data Collection

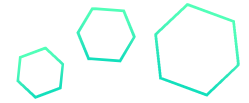
- Team of 6 Engineers - Data Collection in 3 Shifts
- Base Model Data Collection
- Exclusive activity data collection for other model

## ■ Analysis

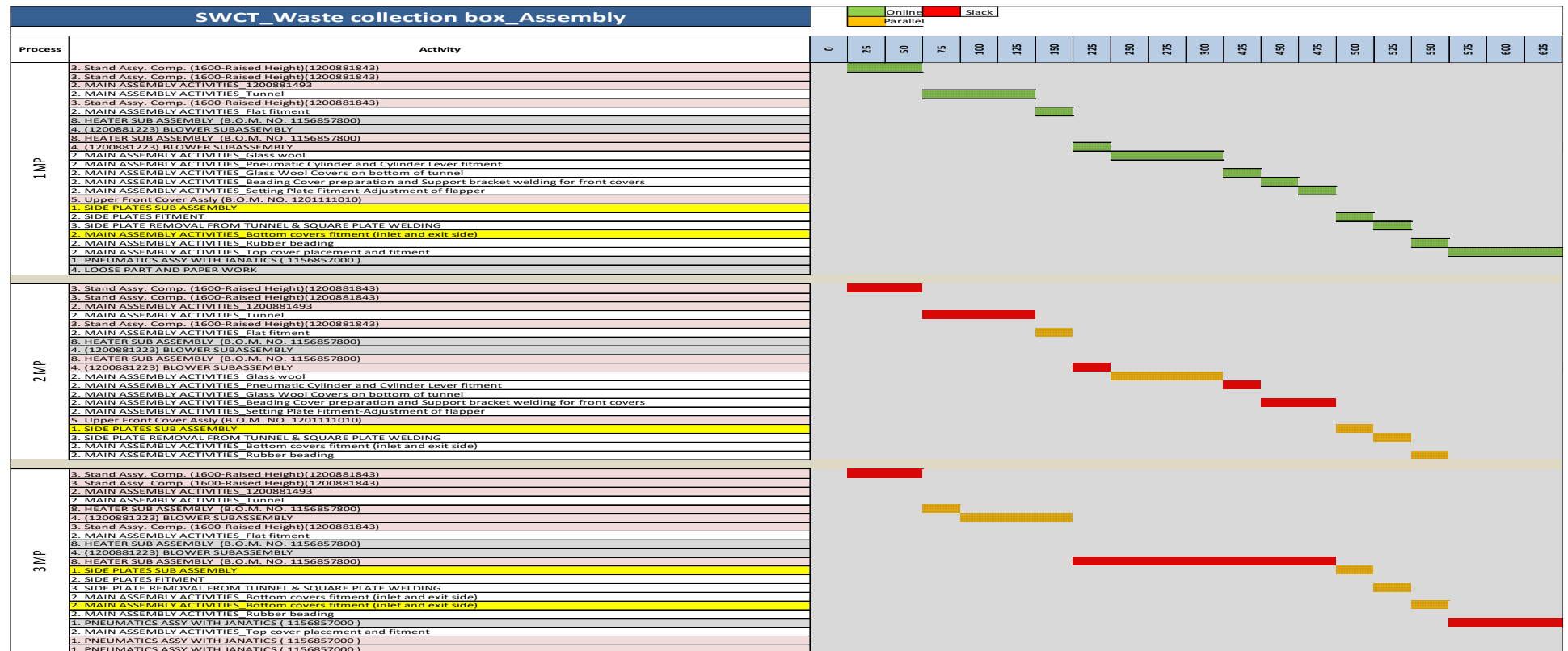
- Work Content Estimation
- SWCT

- 5 ■ Work Distribution using Static Simulation

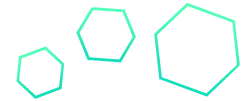
# Analysis



## SWCT – Standard Work Combination Table



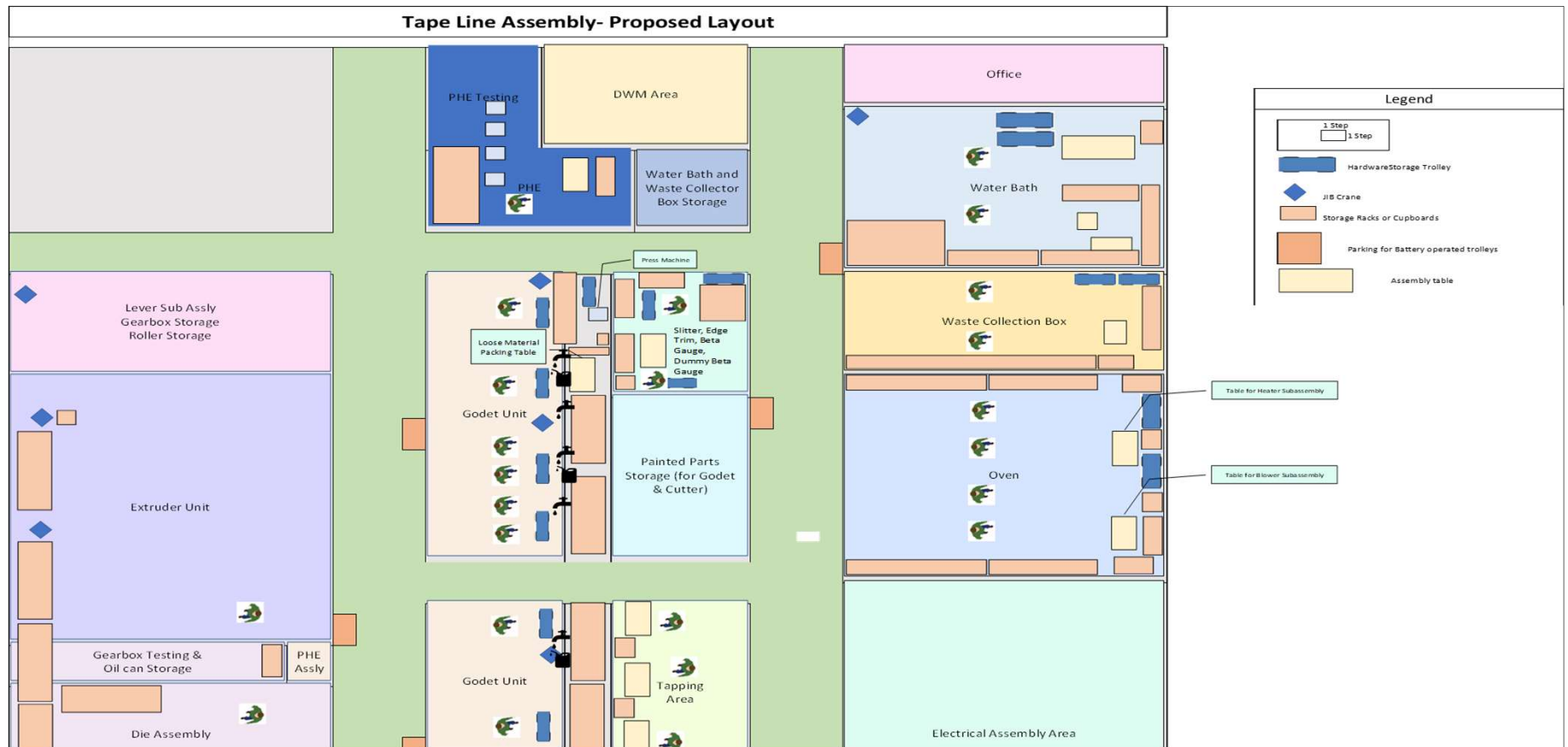
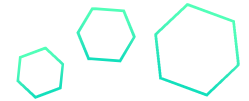
# Analysis



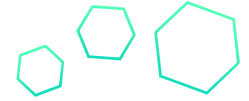
## Static Simulation for Shop Floor Activities for 12 Nos Products/Month

Static Simulation Chart for Shop Floor Activities																					
Time in Min	50	50	50	50	50	50	50	50	65	35	50	50	50	50	50	50	50	50	30	38.75	
DAY	Day 1	Day 1	Day 1	Day 1	Day 1	Day 1	Day 1	Day 1	Day 1	Day 2	Day 2	Day 2	Day 2	Day 2	Day 2	Day 2	Day 2	Day 2	Day 2	Day 3	
Operator/Time (Min)	50	100	150	200	250	300	350	400	465	500	550	600	650	700	750	800	850	900	930	968.75	
1	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	
2	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	WBU	
3	PHE	PHE	PHE	PHE	WBU	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE					
4	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	EDGE TRIM	Dummy Beta	Dummy Beta	Beta Gauge	Beta Gauge
5	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	SLITTER	EDGE TRIM	EDGE TRIM	EDGE TRIM	EDGE TRIM	EDGE TRIM	EDGE TRIM	EDGE TRIM	EDGE TRIM	EDGE TRIM	Dummy Beta	Dummy Beta	Beta Gauge	Beta Gauge
6	Gear Box	Gear Box	Gear Box	Gear Box	Gear Box	Gear Box	Gear Box	Gear Box	Gear Box	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	
7	Gear Box	Gear Box	Gear Box	Gear Box	Gear Box	Gear Box	Gear Box	Gear Box	Gear Box	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	Fibrilator	
8	Tapping	Tapping	Tapping	Tapping	Tapping	Gear Box	Gear Box	Gear Box	Gear Box	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	
9	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	
10	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	
11	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	
12	Oven	Oven			Oven	Oven	Oven	Oven					Oven	Oven	Oven	Oven	Oven	Oven	Oven	Oven	
13	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	
14	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	Extruder	
15	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	Fibrilator			
16	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	INT UNIT	Fibrilator			
17	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit					
18	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit	Holding Unit						
19	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	
20	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	Stretching Unit	
21	Moyo	Moyo	Moyo	Moyo	Moyo	WCB	WCB	WCB	WCB	WCB	WCB										
22	Moyo	Moyo	Moyo	Moyo	Moyo	WCB	WCB	WCB	WCB	WCB	WCB	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	
23	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	Tapping	

# Proposed Layout



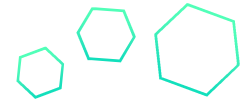
# Findings and Recommendations



- Cycle time improved from 1.3 days/unit to 0.9 days/unit
- 30% Manpower Reduction and 43% Productivity Improvement
- Deployment of operators, as per study, to be done so that the unit runs efficiently.
- Materials and Tools availability to be ensure at each workstation
- Layout Modification are required as suggested.
  - Jib crane for Water Bath Unit
  - Material Storage units to be provided near unit (within 15-20 steps) (All Units)

Production/ month	Working Time/Shift time	Working days/ Month	Days/Unit	Ratio (Production : Day)	Minimum Working Minutes/Day for Req'd Production	No of Shifts Req'd/Day	Existant Condition (20 Nos Production)		Proposed Condition				
							Manpower/Shift	Manpower / Day	Manpower/Shift	Manpower/ Day	Manpower Reduction	Productivity Improvement	Manpower Utilization
28	465	25	0.9	1.12	1041.6	3	29	61	19	57	30%	43%	66%
10			2.5	0.4	372	1	-	-	21	21	-	-	63%
12			2.1	0.48	446.4	1	-	-	23	23	-	-	69%
15			1.7	0.6	558	2	-	-	15	30	-	-	67%
20			1.3	0.8	744	2	29	61	20	40	34%	53%	68%

## Contact Details



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