

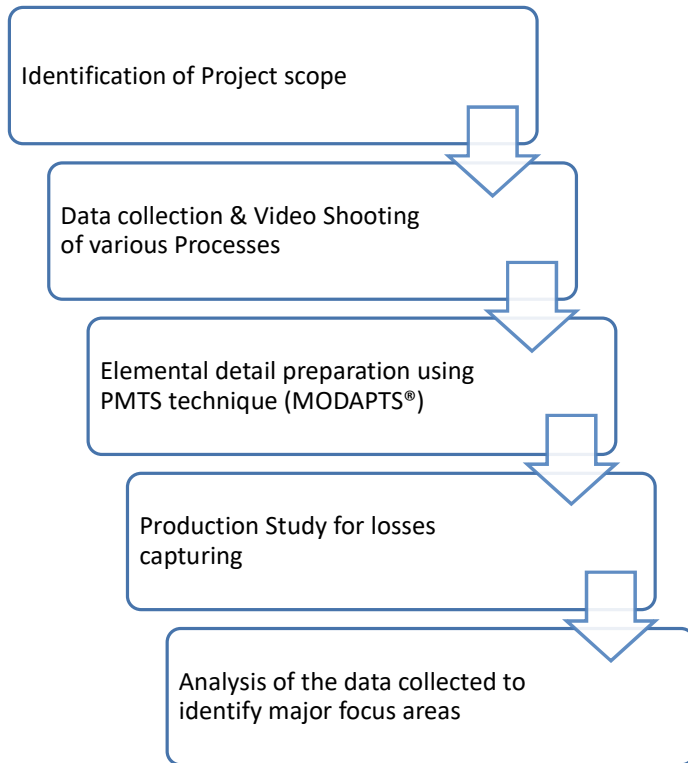
Case Study - Tire Manufacturing Industry



Client's Challenge

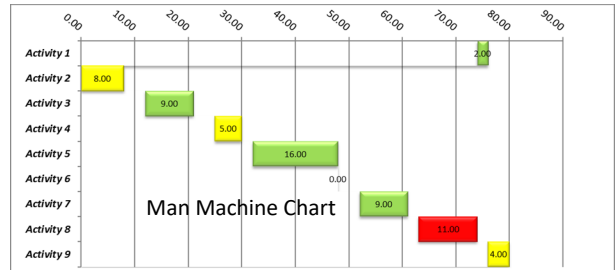
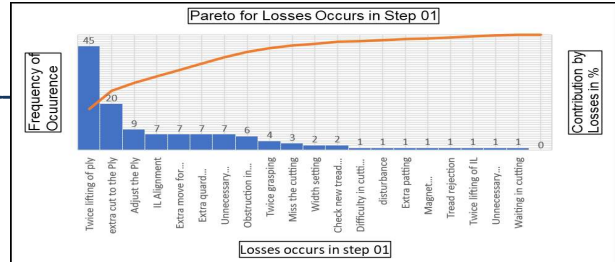
- Inconsistent output on TBM machines
- Resource optimization
- Low Productivity due to fatigue
- Identification and reduction of losses

PMI's Approach

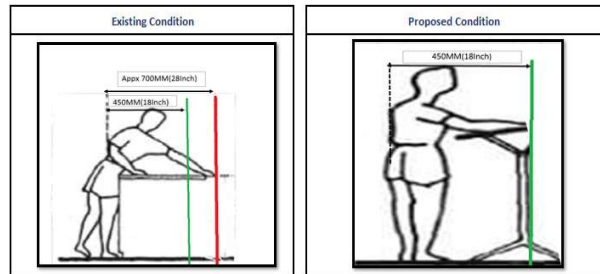


Key Points

- Module for Rotation of Resources (ROR) is delivered to the client
- Potential solution for fatigue elimination
- Focus areas identified to reduced losses



Schematic Layout for the Fatigue Analysis



Results

- Introduce periodic rotation within shift timing with other department
- Variation in cycle time and or impact of fatigue can be taken care of by introduction of fatigue
- Fatigue reduction and productivity improvement from ROR module

Tyre Type	Estimated time	Avg. time with variation - inclusion of all losses	% Variation	Avg. time with variation - excluding non cyclic activity	% Variation
Product 1	64.30	72.5	12.75%	69.8	8.55%
Product 2	72.30	81.3	12.45%	78.4	8.44%
Product 3	75.20	85	13.03%	81.2	7.98%

ROTATION OF RESOURCES MODULE					
No of Machines in working	3	Online	●	Partial Relieving	●
Manpower for 3 Machines	4	Relieving	○		

Time Slot		Manpower			
		A	B	C	D
07:00	08:30	●	●	●	○
08:30	10:00	●	●	○	●
10:00	10:30	●	●	●	●
10:30	11:00	Lunch	●	●	●
11:00	11:30	●	Lunch	●	●
11:30	12:00	●	●	●	Lunch
12:00	12:30	●	●	Lunch	●
12:30	13:30	●	●	●	●
13:30	15:00	○	●	●	●

*Data shown here has been modified to protect client confidentiality