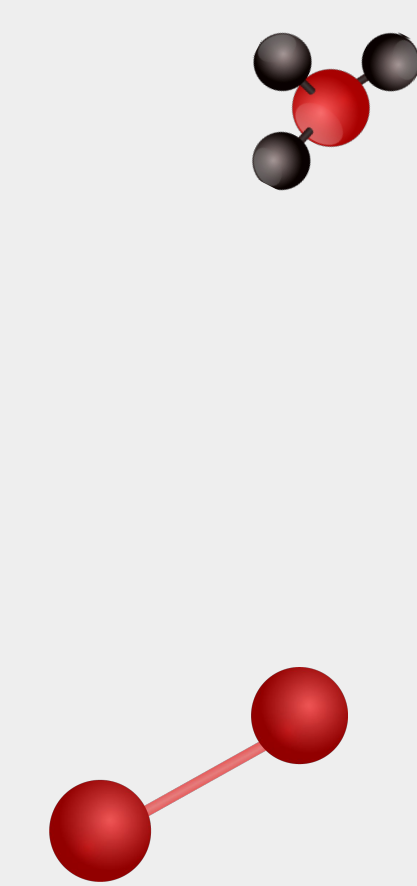
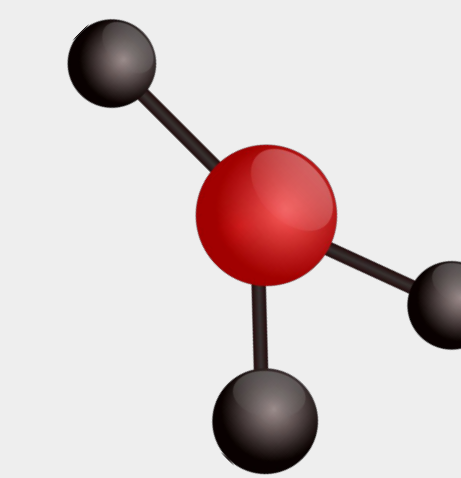
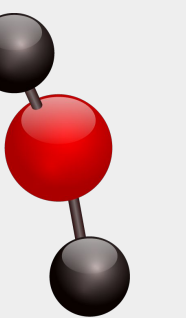




Downtime Reduction at Changeovers



Clay Adkins
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Company Contact: Mark Oakes
Academic Advisor: Sait Tunc

Company Background

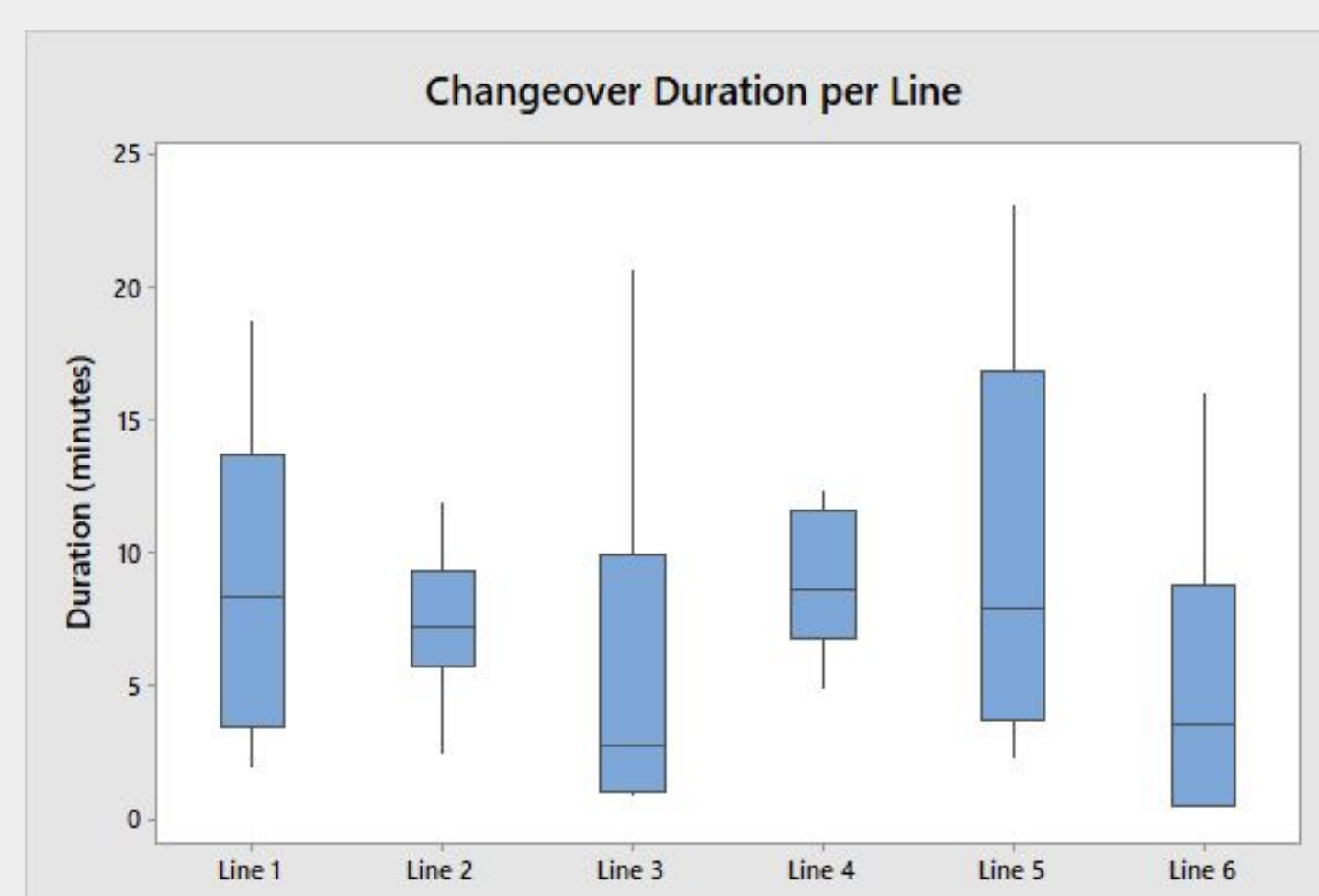
- Global manufacturer of disposable medical devices.
- Richmond facility assembles custom medical trays.
 - ◆ 120 employees
 - ◆ 6 assembly lines
 - ◆ produces about 6000 medical trays a day.



Problem Statement

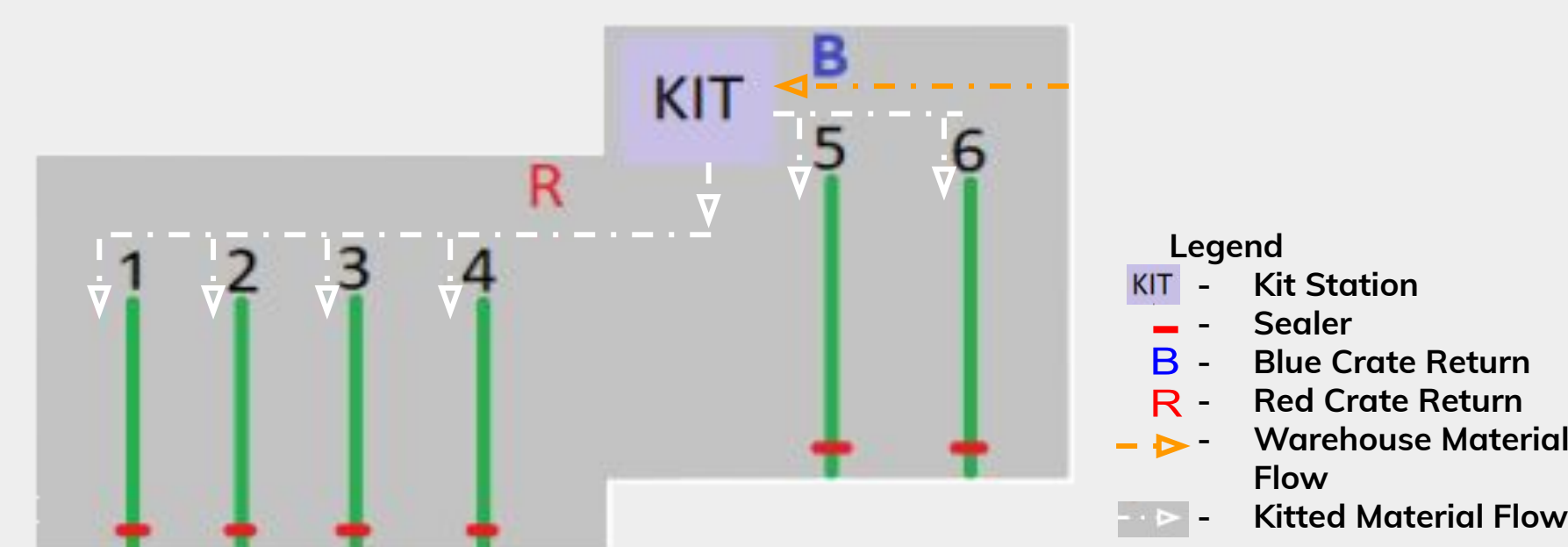
No standard process for changeovers, resulting in significant variation and delay.

- 55 changeovers per day
- 1-15 minute per changeover



Project Background

Facility Layout:



Changeover = the time between the last good tray of the previous Job reaching the sealer and the first good tray of the next Job reaching the sealer

Changeover Requirements:

- Removal of previous Job's bins
- Placement of next Job at operator stations
- Paperwork

Data Collection:

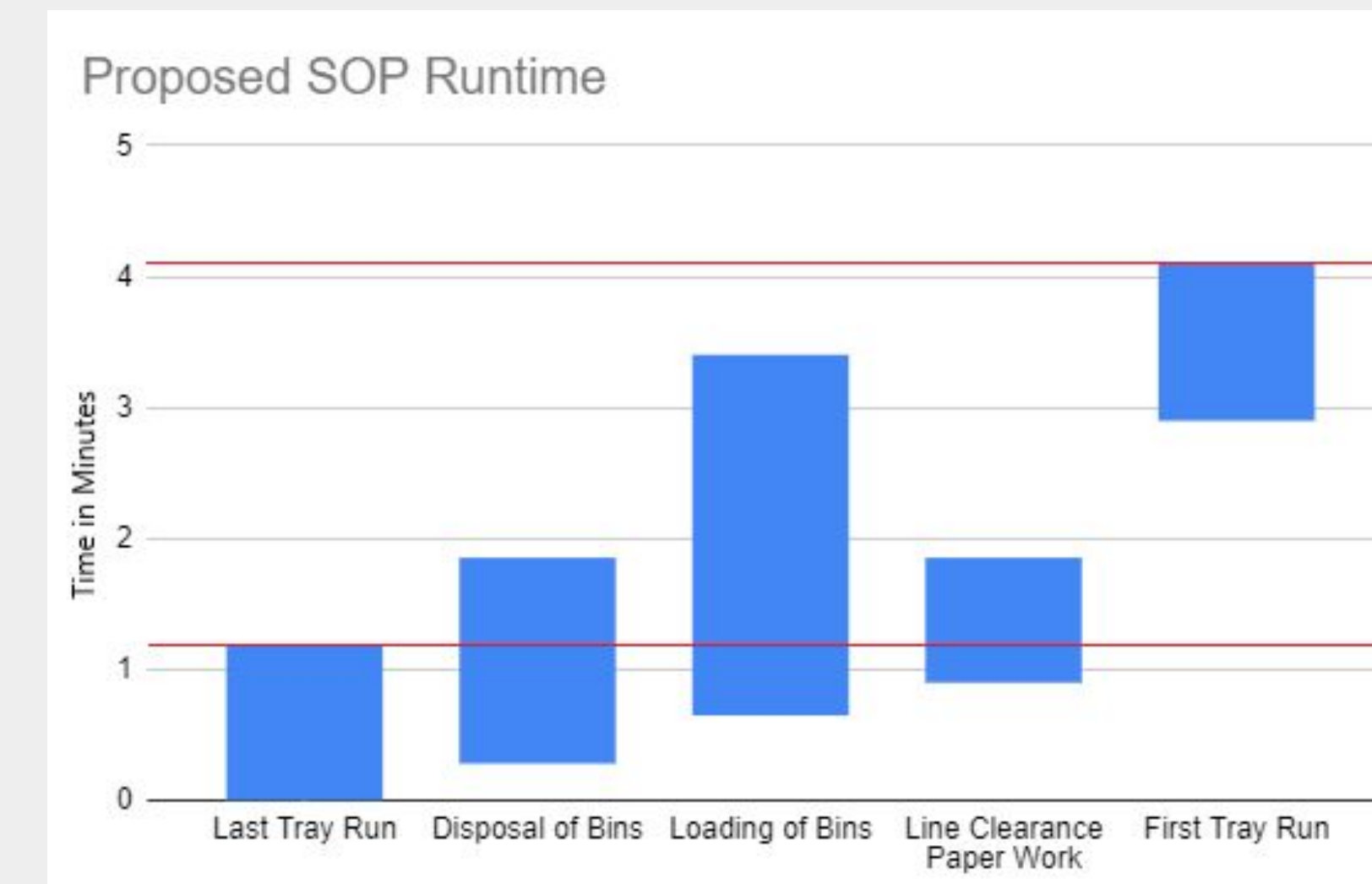
Average = 7:40 minutes
SD = 5:30 minutes

Goal: Reduce average changeover time by 50%

Impact

Estimated Savings: \$320,000/year
New Changeover time = 2:55 minutes

	Start (minutes)	Finish (minutes)	Duration (minutes)
Last Tray Run	0.00	1.17	1.17
Disposal of Bins	0.30	1.83	1.53
Loading of Bins	0.67	3.38	2.72
Line Clearance Paperwork	0.92	1.83	0.92
First Tray Run	2.92	4.08	1.17



Approach

- Time Studies
- Observed effective practices
- Employee interviews
- Industry best practices (SMED)



Implementation

Proposed SOP:

- DISPOSE OF BINS
 - Operators place on cart
 - Line Lead returns cart
- TRANSITION MATERIAL TO STATION
 - Operators front load station from cart
- BEGIN NEXT JOB
- COMPLETE BOM PAPERWORK
 - Follows the 5th completed tray
- CHECK FOR SHORTAGES
 - Count once 10 trays remain
- LINE CLEARANCE PAPERWORK
 - By Line Lead after last tray