



DEFINE

Project Charter

Project Title: WIP Reduction	Start Date: October 2024
Project Number: N/A	Target Close Date: May 2025
Strategic Objective: Reduce cycle times and operational costs, Eliminate waste and unnecessary variability, Ensure timely delivery of products to the customer, Strengthen responsiveness to changes in demand.	
Methodology: DMAIC	Location: Guayama, PR

PROBLEM STATEMENT

In January 2025, the monthly WIP reached **\$5,265,516**, distributed as follows:

- DP (Drug Products): **\$3,076,325** (58.4% of the total),
- VMS (Vitamins, Minerals, and Supplements): **\$2,189,190** (41.6% of the total)

Project Y: **\$2,189,190** M/month

Goal Statement: Improve Inventory by **20%**, from \$5.3M/month baseline to goal \$4.3 by May 2025

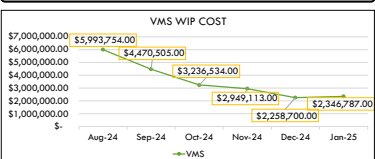
In Scope: VMS-Vitamins, Minerals and Supplements

Out of Scope: All other Process from Halcon Manufacturing

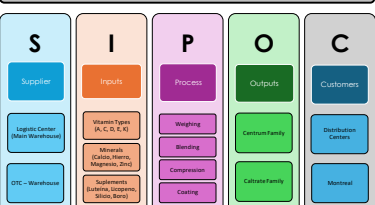
PROJECT TEAM

Project Role	Name(s)	Project Role	Name(s)
Project Leader	Derek J. Rodriguez	Sponsor	Supply Chain: Jessica T. Operation: Salvador P.
Core Team	<ul style="list-style-type: none"> Carolyn Melendez (Master Production Scheduler). Melissa Velazco (Process Specialist OPEX Team). Michael Rodriguez (Senior Associate Business Analyst). 	Finance Rep: GB/MBB/BB Coach: Eddie Ramos	Deployment Champion: Diego Jaime (Production Planning Manager)

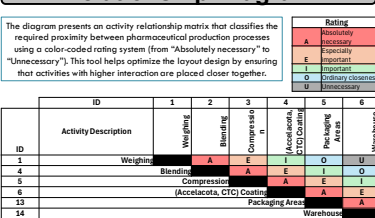
Current Performance



SIPOC

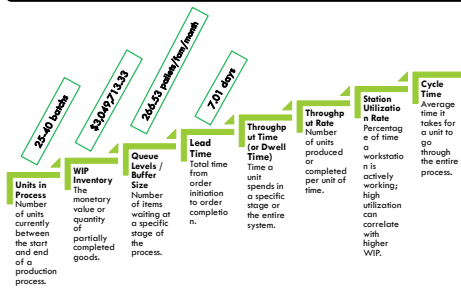


Relationship Diagram

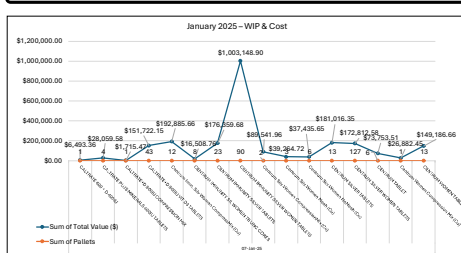


MEASURE

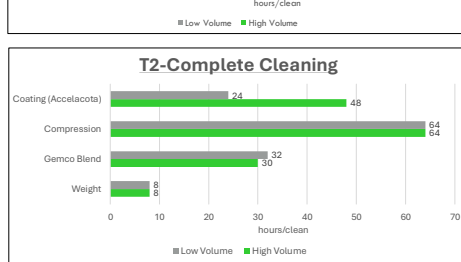
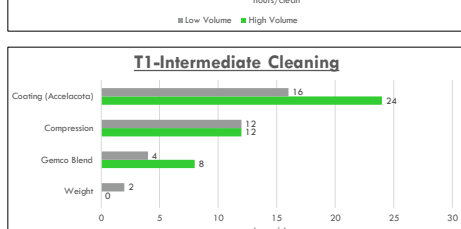
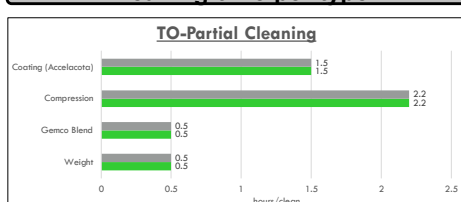
Common Variable to Measure WIP



Run Chart of last month

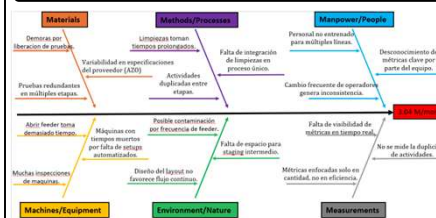


Cleaning time per type

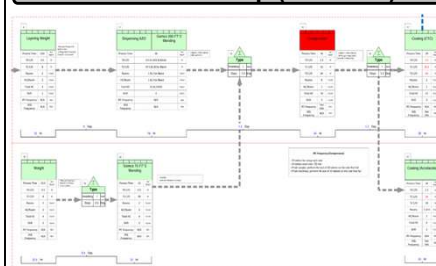


ANALYZE

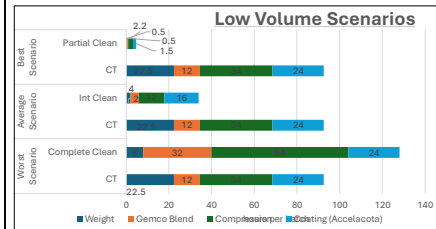
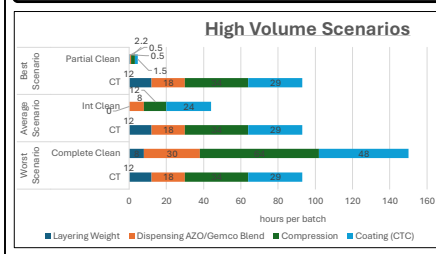
Fishbone



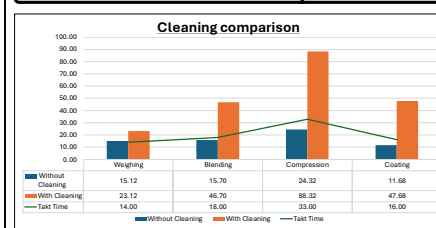
Value Stream Map (Reduced)



Scenarios



Yamazumi Graph



IMPROVE

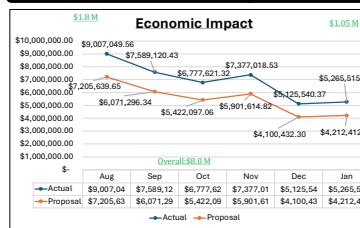
Action Plan

#	Proposed Action	Justification	Expected Impact	Owner
1	Synchronize preventive maintenance with batch planning	Coating presents cleaning times of up to 48 hrs (complete cleaning), which causes WIP accumulation if not aligned with production	Reduction of downtime and improved continuous flow	OPEX
2	Standardize partial cleanings in similar consecutive batches	Partial cleanings only require 0.5-2 hrs compared to 24-64 hrs for complete cleaning	Significant reduction in total cycle time and WIP	Planning & Schedule
3	Redesign layout and weighing flow for high-volume products	Centrum Silver accounts for over 40% of total volume but has weighing processes that exceed 24 hrs per batch	Increase in lead time and workload optimization	OPEX
4	Implement root cause analysis (RCA) in compression of high-variability batches	Compression shows high times (>33 hrs/batch), especially in High Mix	Process stabilization and rework reduction	OPEX
5	Prioritize runs of high-rotation products to avoid accumulation in blending and coating	Pareto shows that 5 SKUs represent over 80% of volume in weighing, blending, and coating	Improved scheduling, intermediate inventory	Supervisor or Manager
6	Use real-time monitoring for station utilization % (OEE / PAS-X)	High utilization in Coating (up to 48 hrs) and Compression does not always correlate with output	Workload balancing and bottleneck reduction	OPEX
7	Design a production strategy by product families	High number of complete cleanings is due to	Fewer setups and interrupted	Planning & Schedule

Do - Project Action Plan CIP#2

#	Action	Owner	Start Date	End Date
1	Create a detailed manufacturing plan for June that includes all cleanings and preventive maintenance (PM).	Dennys Millán / Carolyn Meléndez	May-2025	May-2025
2	Provide a preventive maintenance plan and align it with the supply chain to include it in the manufacturing plan.	Carlos Alzaga / Dennys Millán	May-2025	May-2025
3	Provide a tool replacement plan from the supply chain to include it in the manufacturing plan.	Fabiola De Jesus / Dennys Millán	May-2025	August-2025
4	Consolidate training for Weighing and Staging and implement Capsa carts to strengthen labor flexibility.	Linette Matos / Yomarie Rodriguez	May-2025	TBA
5	Compression academy with subject matter experts (SMEs) for new colleagues.	Carlos I. Cruz / Yomarie Rodriguez	Jun-2025	September-2025
6	Improve the process of identifying equipment using scanning codes for compression (PAS-X).	Miriam González / Evelyn Vélez-Rubio	May-2025	TBA
7	Improve Coating Guns. Root cause analysis (RCA).	Opev/Eng / Operations	May-2025	Jun-2025

Economic Impact



CONTROL

Control Actions

#	Control Action	Description	Frequency	Responsible
1	Implement weekly WIP level review	Validate quantities per SKU vs production schedule	Weekly	Planner + Supervisors
2	Visual control and floor audits	Visually verify product flow at each station	Daily	Line Leader
3	Use of key WIP indicators (KPIs) in dashboards	Monitor WIP levels by family and work center	Continuous	Data & Performance Area
4	Activate automatic alerts	Alerts for excess WIP or stalled processes	Real-time	IT + Production
5	Pull System or WIP cap policies per station	Limit maximum number of units between stages	Defined by Engineering	Production
6	Daily production follow-up meetings	Validate compliance vs plan and deviations	Daily	Manufacturing Coordinator
7	Ongoing training on Lean and flow control	Ensure personnel understand the impact of excess WIP	Monthly	OpEx + Human Resources
8	Forecast and demand model updates	Prevent overproduction due to outdated data	Monthly	Planning + Finance

Examples

- Revisión semanal de niveles de WIP. Formato sugerido: Excel condicionado con Conexión a Power BI.
- Control visual y auditorías de piso. Formato sugerido: Excel condicionado con Conexión a Power BI.
- Indicadores clave WIPs de VMS. Formato sugerido: Power BI Dashboard.
- Políticas de Pull System o WIP Cap. Formato sugerido: Excel condicionado con Conexión a Power BI.
- Reuniones diarias de producción. Formato sugerido: Power BI condicionado con Conexión a Power BI.
- Entrenamientos sobre Lean y WIP. Formato sugerido: Registro de Entrenamientos de WIP.
- Forecast y modelo de demanda. Formato sugerido: Excel condicionado con Conexión a Power BI.

Conclusion

This Lean Six Sigma project of Halcon's VMS area achieved a projected **WIP reduction of over 20%**, translating into more than **\$8 million in savings over six months** and cutting batch processing times from **150 to 51.7 hours** in critical areas like Weighing, Compression, and Coating. Using the DMAIC framework, root causes such as **cleaning variability, poor alignment with real demand, and lack of product sequencing** were addressed through solutions like standardized partial cleanings, family-based scheduling, and layout redesign. In addition to its financial and operational benefits, the project enabled real-time WIP monitoring, strengthened interdepartmental collaboration, and positioned the site for future digitalization and capacity optimization initiatives.