



RESULTS AT A GLANCE

15%

Increase in daily throughput of cars

10M

Annualized additional margin

10%

Improved performance in switching/loading vendor

98%

Compliance with car inventory levels

\$1.2M

Savings in SIT Yard storage fees and freight/switching costs

Hidden Value in Logistics – Rail Optimization in Refinery and Petrochemical Operations



Rail operations are far from the core competencies of oil and gas refineries, so often, opportunities to capitalize on the optimization of rail logistics are missed. By focusing on this area of the business, refineries are discovering significant improvement in capacity and bottom-line benefits. By including rail logistics in the refinery measurement systems with daily KPI monitoring, significant and impactful change is achievable.

THE SITUATION

Precision Scheduled Railroading (PSR) and an emphasis on asset optimization are putting pressure on downstream and chemical operators to seriously assess and improve the performance of their rail operations. The performance scope runs the full range of operations – from fleet optimization and car cycle improvements to first mile / last mile – switching / loading performance to third party work optimization.

For the last 3 years Argo has been working with a major Petrochemical company (14 plants in the US) helping them improve rail operations at 4 of their most complex sites. Issues that have been encountered include Class 1 level of service, First Mile / Last Mile accessorial and freight costs, in-bound feedstock throughput and switching / loading capacity with direct impact on refinery margins.

The client sought out Argo to apply best practices and tools taken from over a decade of experience helping Class 1 Rail operators and their clients install Lean methods in their operations.

In the case of these 4 refineries, they were dealing with rail yard congestion, inefficient switching operations, inefficient load rack performance, underutilized load rack capacity, and limited performance measurement tracking of logistics operations.

- These issues manifested in specific problems such as:
- Switching and loading lack of standardization and Class 1 level of service misses did not allow the refineries load their planned tank car targets for solvents and other finished products resulting in loss sales and margin.
- Excessive paperwork, billing documentation problems and lack of KPI management created delays for the refinery TrainMaster and the traffic control department in building their switch list every week.
- Site terminal clock sequence not determined, and switch list created on a day-to-day basis.
- Constructive Placement status and automatic car re-routing to local SIT yards without regular checks increased freight and storage fees to un-planned levels.
- Missed off-loads of critical feedstocks and blending products affected revenue and margins during the winter gasoline blending season

ARGO'S ACTIONS

Acting as a hands-on coach, Argo worked with the refinery and corporate rail logistics teams to achieve new levels of first mile / last mile stability and capacity as well as cost performance thanks to several value-creating initiatives:

DAILY RAIL PERFORMANCE TRACKING DIALOGUE

Argo and the refinery logistics team installed a Daily Performance Dialogue (Pulse Process) for Rail Logistics and Load Rack Operations. The Pulse Process provided management rigor and identified appropriate Key Performance Indicators (KPIs) to drive the right behaviors throughout the operations. The process converts data into actionable information with complete transparency. Transparency enables fact based unemotional leadership decisions to drive changes and accountability. Collectively this allows for the application of effective management rigor in daily operations. While the primary focus was within the Rail Operations, integration with other business units and support groups was required to achieve the full potential of improvements.

STANDARD YARD OPERATING SYSTEM FOR RAIL OPERATIONS

With Argo coaching, the logistics team designed and implemented standard work using lean concepts of flow and pull to create clear rail car workflows. The team designed and implemented a standard yard operating plan based on meeting the needs of the refinery which included measures to ensure the switching vendor and the class one rail provider performed as required to meet refinery demand. Argo worked with the vendors to design smart classification systems based on refinery demands, not necessarily what made the switching operations easy.

STANDARD OPERATING SYSTEMS FOR LOAD RACK OPERATIONS

Argo implemented “pull” systems at the load rack to maximize the needed product at the load rack and thereby allow the refinery to pull the amount of product to optimize the refining process. This eliminated the control of load rack performance from the rail switching vendor and shifted control to the refinery operations. The switching vendor was given a standard loadout of rail cars

and product to spot at the rack. Establishing this daily routine allowed the switching vendor to prepare and be more effective pacing the right cars at the right time to meet refinery demand.

USER DEFINED LOAD RACK DIGITIZATION SOLUTION

The team mapped the billing / car info / product info data collection process and analyzed the feasibility to design and install a data collection and processing APP to collect information about product off-loaded and loaded at the load rack. Using a simple cloud-based solution, the team automated the collection of car information and product off-load start / end times to speed up information transfer and accuracy in product definition and billing. This had an important productivity and quality control impact.

OTHER IMPORTANT ACTIONS

- Dynamic CLM data analysis for fleet size review and optimization
- Performance tracking of Class 1 level of service allowed for a 100% compliance on weekly deliveries and pick up of tank cars
- Car inventory tracking on daily pulse meeting allowed for the reduction of car inventory on site and at SIT yards with a subsequent reduction of storage and freight costs

RESULTS

- Implementation of the “Pulse” Performance dialogue increased the interaction and communication among areas of the business that previously talked to each other less than once a month and without a specific target in mind. Visual tracking of performance had an impact on Class 1 Service Levels and throughput of the loading operations within 2 - 3 weeks of it being installed.
- At two of the sites there was an increase in daily throughput of cars of about 15% which combined equated to approximately \$10 Million annualized in additional margin.
- Using Power BI the team digitized the dashboard created by the Pulse team and after 3 - 4 months the KPI's were updated real time and were available to multiple areas every day. This increased accountability and improved the performance of the switching / loading vendor by 10% while allowing for almost 98% compliance with car inventory levels.
- At one of the locations the car inventory control actions allowed the refinery to save \$1.2 Million in SIT Yard storage fees and freight/switching costs.
- Finally, at two of the sites, increased throughput had the effect of revaluation of Capex projects to increase capacity via other transportation means, so Capex was conserved as a result.



Argo is an operations improvement consulting firm that breaks through the traditional barriers of the consultant-client relationship. We are hands-on consultants who deliver real results and no excuses.