Fertiliser

This use case demonstrates how Qnum Analytics has the capacity to unlock a significant competitive edge for a fertilizer company by enabling real-time access to credible inventory insights.
Qnum Analytics' OI platform helps dry bulk operations achieve this by digitizing all inventory transactions. The AI-driven technology adapts and evolves with an operation to cater for unique material handling dynamics that are missed by existing enterprise inventory software.

Overview

A well-known fertiliser producer had been closely monitoring the steady erosion of their dominant market share over the last 5 years. They were exploring opportunities to minimise production inefficiencies, demand misalignment, and profit leakage points in the business to help position the entity as the supplier of choice in the market in terms of both price and quality.

The area of Usage Variances was identified as an area of significant profit leakage which was caused by an inability to accurately track and control the deviations between planned production usage and actuals. The deviations result in losses by way of; stock-outs, replenishment of stock at higher prices, an inability to track stock transfers between warehouses, and stock survey methods that rely on inconsistent assumptions.

Qnum Analytics was enlisted to analyse the producer's stock management process and highlight the impact of material handling blind spots and stock survey inconsistencies on the inability to access accurate inventory-related decision-making insights.

Results

The OI Solution, which is an AI-driven Software-as-a-Service (SaaS) platform was utilised for the 1-month Proof of Concept.
The solution's algorithms and continuous reconciliation capability allowed for the isolation of core issues which were causing usage variance losses

Bottom line impact:

•Usage variance losses reduce by $82,400 in just one month of the OI Platform deployment.

•Time spent by Finance Department conducting stock reconciliation at month end reduced from 2 days to just 5 hours.

•12% saving in cost of raw material enabled by the ability to give suppliers ample delivery lead time due.

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Approach

1.The fertilizer producer enlisted the assistance of Qnum Analytics to assist in analysing and isolating the root cause of variances and provide the means to control the losses moving forward.

2.The approach taken was to conduct a 1-month paid Proof of Concept (POC) of Qnum's OI Platform to

a. Uncover the source of inefficiencies and discrepancies in the stock management process
b. Leveraging the Accurate Stock Survey Technology and Machine Learning Algorithms to drive more accurate tracking & measurement, and continuous reconciliation,
c. Enable the detection, isolation, and systematic elimination of variances.

3.At the end of the POC the historic variances were compared with results from Qnum's OI Platform. Historically, the fertiliser producer would struggle with heaps of paperwork at month-end attempting to reconcile the variances. Qnum's OI Platform enabled the business to track the variances over the month, which enabled the proactive isolation and elimination of core variances. The finance department was able to verify the results using the built-in financial and audit controls which saved a lot of productive time.

Concluding remarks

The following stock management shortcomings were identified as the root cause of the stock variance frustrations:

•Due to their hard-coded nature enterprise resource planning systems cannot cater for unique operational dynamics such as production dry runs. These production dry runs consume high amounts of inventory which are not recorded on the system directly causing significant variances and limiting accurate stock visibility.

•It is impractical to conduct daily physical stock counts for verification purposes. This means that operations rely on incorrect data when making key production, supply, and demand decisions. This creates a costly misalignment in the supply chain.