Mega-trends Driving Chemical Industry - Success Priorities (Pt.2)

Introduction

The priorities for success in the chemical industry are dynamic and constantly changing. End users' demands and priorities shift with changing technology, usage experience, and processes. So, organizations in the industry must evolve to remain competitive.

In this document, we will examine the priorities that the chemical industry must set to become or remain a leader in their sector.

For leaders of an organization, safe, compliant, sustainable operations and any relevant transformational effort hold top priorities. Despite automation being in existence for over a decade, many chemical companies still suffer from siloed data and a lack of integration in manufacturing and the supply chain. This siloed state further prevents them from automating other processes and capitalizing on internal know-how and relationship-building with customers and vendors. If we trace back to the roots of the chemical company sales, we find that they originally sold crude oil products and inorganic materials to the downstream industry. However today, their consumer base has expanded to include the life sciences and automotive industries and in future, it will continue to evolve.

To garner success and evolve with the market, chemical companies will put these four strategies on their priority list.

THE STRATEGIES

OPERATIONAL EFFICIENCY INCREMENT

Chemical companies can automate a major part of their back-end systems by utilizing machine learning, artificial intelligence and predictive models, thus enabling scenarios like touchless order fulfilment, and lights-out manufacturing and bringing the vision of autonomous enterprise even closer. Initially, companies can focus on reducing the processing time, increasing first-pass yields through predictive quality and improving overall equipment effectiveness. This can be achieved with continuous improvement of Integrated IoT, Machine learning and Digital Twins in everyday operations. Next, companies can put their efforts into collaborating with customers, suppliers and upstream-downstream service partners.

This can be achieved through the use of an intelligent asset network, predictive models, and experience management. These tools can improve the overall supply chain management of an organization. Additionally, they can anticipate possible disruptions, simulate them, and implement contingency plans to mitigate risk throughout the supply chain. Furthermore, by utilizing machine learning, end-to-end standard operations can be automated.

Managing Integrated Operations

The ability to operate safely and effectively is critical for chemical companies. One of their never-ending tasks is reducing cycle time and improving the first yield pass. They focus on individual inefficiencies, such as material movement or equipment efficiency and strive to reduce cycle time by fully integrating end-to-end operations. Manufacturing connectivity and intelligence solutions, such as Brabo, and technologies like digital-twin enable companies to operate more reliably and efficiently, by providing them with an integrated view of day-to-day operations. They also offer valuable insights into operations, improving problem rectification and business outcomes.

Problems in Traditional Scenarios

- The potential impact of an event on one or multiple downstream processes is not understood appropriately.
- The best solution to a problem due to missing functionality to completely model multiple solutions is not chosen efficiently.
- Integration between operation and management systems is minimal or non-existent.

Solutions offered by New World Scenarios

▪Interrelated data from facilities, operations, human resources, logistics and the environment dealing with a digital representation of the Operational world is fully integrated by Brabo, an OT-IT connectivity platform. ▪ Events which are having an impact on operational continuity are processed, presented and analyzed for their potential. Remedies are then proposed and a new corrective action plan is executed.

▪ The ability to understand what data needs to be worked upon is vital to modern operations.

Top value drivers for Integrated Operation Solution are:-

1. Reduction in Process Cycle Times
2. Quicker Response Time
3. Reduction in Cost and Waste
4. Support for implementing new business Processes

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