

NOVA Chemicals Standardizes Business Processes to Drive Supply Chain Improvements

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ARC Advisory Group recently interviewed the staff at NOVA Chemicals. The company produces plastics and chemicals, with a focus on ethylene,

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polyethylene, and Performance Styrenic polymers production. NOVA Chemicals and its subsidiaries and joint ventures have manufacturing sites strategically located throughout Canada and the United States.

In the past, NOVA Chemicals used MIMI, an older supply chain management (SCM) application from AspenTech to support plant planning and scheduling activities. However, over time, this became unwieldy; growing to have more than 25 unique models. With no standardization or integration, it proved costly and time consuming for both IT support people and end users to make needed modifications. However, as part of an ambitious Integrated Demand and Supply Planning (IDSP) project, NOVA Chemicals committed to a new, standard set of business processes across its polyethylene business and the company was able to migrate to six standard aspenONE Supply Chain Management applications. The ultimate goal was to eliminate spreadsheets, increase the scheduling horizon, and improve visibility into raw materials.

Disparate Plant Models Fragment Business Processes

Due to fragmented business processes and a lack of standard technology, NOVA Chemicals, like many other companies, managed its supply chain using many manual processes, including spreadsheets, emails, and phone calls. This made it difficult to evaluate or determine the best response to business changes or other events such as price changes, shutdowns, raw



material constraints, and bad weather. Further, the lack of uniformity between models made change management very difficult and also hampered collaboration across different groups.

The high customization of the existing MIMI models further fragmented both business processes and supply chain execution. These models became increasingly difficult to support, forcing the company to rely heavily on external IT consulting companies.

Aligning Business Processes

As part of the company's business process improvement project, NOVA Chemicals set out to redefine its business processes to be consistent with the [Supply Chain Operations Reference \(SCOR\)](#) model, a best-practice framework developed by the Supply Chain Council. The project team performed a current state assessment analysis that documented the "as-is" and desired "to-be" process.

Once all stakeholders agreed upon the newly defined, "to-be" business process, NOVA was able to rationalize from the 25 unique models to just six standard aspenONE Supply Chain Management applications.

To implement these applications, the team focused on one specific business area at a time and worked to prototype each application to meet the specific business needs using common aspenONE technology and applications.

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The business functions covered by the aspenONE applications include demand planning and forecasting, inventory planning and target setting, supply and demand balancing, distribution planning, and detailed production scheduling. Once the team completed the prototype for each, the stake-

holders reviewed the prototype and made recommendations, many of which the team incorporated into the full implementation.

"We already had a great sense of the business processes that were driving the company. The challenge was to be able to get the right data in a timely manner and deliver it to right models," commented Zoran Stojcevski, Systems Analyst and Developer at NOVA Chemicals.

Master Data Management and Data Integration

NOVA Chemicals' new standardized set of software tools simplifies IT support, reduces overall IT cost of ownership, and enables significant user flexibility. The company has reduced fourteen different scheduling models



NOVA Chemicals' Joffre Manufacturing Facility in Alberta: One of the World's Largest Ethylene and Polyethylene Production Complexes

down to one. This provides a central data source for all modules and allows dynamic reporting across all regions and businesses. The similar design and common look and feel for all modules significantly reduces training requirements and makes it easier for schedulers to cover for each other, when needed. The integrated process enables master data management, with upstream changes automatically propagating to other modules.

According to Zoran Stojcevski, Systems Analyst and Developer at NOVA Chemicals, "Due to forward visibility, the scheduling horizon doubled, increasing from 90 days to 180 days. This gave the schedulers better raw material visibility and a better product wheel."

Recommendations

The journey to supply chain excellence remains challenging. Careful execution of a plan that involves external benchmarking and internal collaboration is crucial to achieve business goals. However, as Albert Einstein once said, "We can't solve problems using the same kind of thinking we used when we created the problem."

Business processes in an organization are usually not well defined and even if processes are in place, the employees that perform the various roles across the supply chain might not be aware of the importance standardizing business processes across an organization. In many cases, there is poor technology alignments, so the software models that are in use often reflect poor business practices.

Business process mapping is a great exercise tool to identify gaps in people and processes, but can be tedious and time consuming in today's fast-paced business environment. The people who are involved in business process

engineering usually are extremely busy and have difficulty supporting a project.

The SCOR framework and benchmarking tools can provide a valuable reference check against industry peers. Adopting standards, participating in the Supply Chain Council's Energy, Oil, and Gas interest group, and appropriate training are all positive steps that today's supply chain-intensive organizations can take to begin the journey.

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