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India is embracing process optimisation software in a big way: Arup Ghosh, AspenTech

Interview with Arup Ghosh, Country Manager for South Asia, AspenTech

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Rising energy prices and increasing complexities in business are forcing chemical manufacturers to find ways to bring down cost without compromising quality and efficiency. In conversation with Rakesh Rao, **Arup Ghosh**, Country Manager for South Asia, AspenTech, a provider of smart manufacturing and supply chain management (SCM) software and services for the process industries, discusses options before manufacturers to run their businesses cost-effectively using latest technologies.

How big is the market for process optimisation and SCM?

AspenTech's process optimisation software encompasses a range of products that are specialised for engineering, manufacturing, and supply chain operations for the process industries, predominantly energy, chemicals, and the engineering and construction firms that support them. More specifically, the software automates complex tasks and enables companies to model and design processes, control and monitor operations, and plan and schedule production to assess the economic benefit and to make the most profitable decision.

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According to a 2010 worldwide study by ARC Advisory Group, a global industry analyst firm, the total available market (TAM) for process engineering tools was $ 595.7 million, with Asia accounting for $ 114.4 million. Within the worldwide chemicals industry, ARC reported a TAM of $ 144.5 million. The report also projected compounded annual growth rate (CAGR) for process engineering tools at 13% from 2010 to 2015.

As the only software company 100% focused on the process industries, we believe AspenTech is well positioned to grow our leadership position during this period by continuing to innovate and partner with our customers. Today, our customers in India include the largest multinationals such as Petrofac, Reliance, and BPCL.

In a separate supply chain study, ARC reported a 2011 worldwide TAM for the chemicals industry of $ 125.8 million and a CAGR of 7.7% through 2016.

What are the emerging trends in the area of SCM software with regards to process optimisation?

Globally, companies are interested in reducing the environmental impact of their operations and an efficient supply chain is a key part of managing the carbon footprint. Because process manufacturing is highly capital and energy intensive, and consumes significant amounts of fossil fuels as raw materials or for power generation, manufacturers need to accurately predict how much product to produce and where and when to produce it in order to operate as efficiently as possible.

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Supply chain optimisation software allows companies to make the best supply chain decisions across their business by analysing demand and understanding each segment of their supply chain. Using supply chain software, manufacturers can reduce energy consumption by optimising the timing of plant shut downs and start-ups, avoiding overproduction, considering production at off peak hours when energy is less expensive, and by evaluating potential to take advantage of alternative power sources such as hydroelectric power, where available. All of these opportunities unlocked through supply chain optimisation deliver greater profitability and a smaller carbon footprint.

How does this trend drive the chemical process industry to adopt process optimisation solutions?
Chemicals producers want to achieve long term sustainability and managing their carbon footprint is an essential part of that goal. Manufacturers face regulatory requirements around greenhouse gas (GHG) emissions and emissions reporting. By optimising their supply chain, they can effectively balance the tradeoffs of production and carbon emissions across multiple sites and across different countries. Companies can also evaluate the benefit of carbon trading, for instance, selling or buying excess emissions credits with other companies. Additionally, companies need to maximise profitability and fully utilise their manufacturing assets. Supply chain optimisation software allows chemicals producers to address both regulation and profitability through accurate demand forecasting, planning, and scheduling.

Can process optimisation software be cost effective for SMEs (who are operating small to medium sized plants and who may have just one or two plants)?
Absolutely, process optimisation software is cost effective for SMEs. Whether a chemicals producer operates one site or multiple sites, the manufacturing process is similarly capital and energy intensive. All producers face the constant challenge to maximise their assets and to react quickly to fluctuations in demand and price. With a sound supply chain management system in place, SMEs can effectively plan and schedule their current production and have the ability to scale their operations in the future.

Given the current uncertainty, how can refiners/chemical manufacturers benefit from process optimisation software?
Whether the global economy expands or contracts, process manufacturers benefit greatly from process optimisation software. Year after year, refiners and chemical manufacturers unlock millions of dollars in savings by using AspenTech software. In lean times, AspenTech modeling software allows companies to optimise their processes and design existing manufacturing sites to be more efficient. In boom times, AspenTech software helps companies to maximise throughput or to design new plants. Regardless of the economic environment, companies rely on AspenTech software to automate complex engineering and manufacturing tasks and to make the most profitable decisions based on access to information and evaluation of multiple scenarios.

How is the response of the Indian chemical industry for process optimisation software?

The Indian chemical industry has embraced process optimisation software in a big way across all areas - engineering, manufacturing, and supply chain - as they recognise the potential to operate more efficiently and to maximise profitability. AspenTech has a long history of working with the largest Indian process manufacturers. Just recently a team at Reliance Industries documented how they improved energy efficiency for ethylene oxide production using AspenTech software.

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Similar to counterparts worldwide, the Indian chemical industry faces the challenges to compete globally, to optimise manufacturing performance, and to develop skilled engineers. Additionally, AspenTech has focused on simplifying its software user interfaces so that new engineers can embrace the software and become proficient faster.

What is driving the demand of SCM software from the Indian chemical process industry?
There is significant demand for SCM software among Indian chemical producers as well as refining companies. The two driving factors are the need to navigate supply chain complexity and to address globalisation.

Best of breed supply chain optimisation software is critical to navigate the complexities of supply chain operations by enabling more informed decisions. Today's economic uncertainty either locally or and globally necessitates frequent revisions to demand forecasts, supply plans and inventory positions. Factor in production costs, market supply and global competition, and chemical companies face a tremendous challenge to maintain high customer service levels and profitability.

Globalisation adds further dimensions as to what to buy, when to buy it, what equipment to run, when a product can be produced and where to sell and when. Because a typical sixty day production run can tie up hundreds of millions of dollars of working capital, it is critical that manufacturers have the best visibility to make the best decisions.