

READY FOR CHANGE: MICROSOFT DYNAMICS SOLUTIONS IN CHEMICAL MANUFACTURING

The Chemical Industry is facing change from many directions – shifts in the economy, emerging markets, globalization of the supply chain, increasing regulations and raw material price volatility. In response, chemical manufacturers need business solutions that adapt efficiently to new products and markets, vigorously protect intellectual property, meet increased obligations of environmental protection and continually adjust to new regulatory requirements.

Embracing change ahead of competitors while connecting and optimizing operations are the keys to growth and profits for chemical manufacturers.



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A Changing Technology Landscape Creates New Opportunities

Changing economic and business trends are creating the need for chemical manufacturers to modernize their business operations. As part of business modernization efforts, chemical manufacturers need business solutions that are designed to easily adapt to change while connecting people and optimizing operations to increase efficiencies.

Modern business solutions provide an opportunity for chemical manufacturers to embrace change and innovate in product and process ahead of the competition.

The new technology landscape available to chemical manufacturers today can speed entry into emerging markets, manage fluctuations in material and energy costs and increase visibility into a global supply chain. As chemical manufacturers expand their footprint into new markets, they need to monitor worldwide regulatory changes and manage complex compliance efforts more efficiently than ever before. There's not a lot of room for error.

Leading Chemical Manufacturers also understand that revenue streams thrive by providing amazing customer experiences. Modern tools that manage and nurture relationships and connect and optimize operations in turn drive product and service innovation, enable speed and agility, and empower people to do their best.

Harness the power of new technologies by focusing on 3 key strategies for the chemical industry.

- Modernize operations to embrace new markets
- Manage fluctuations in pricing
- Manage regulatory, compliance and sustainability efforts

Modernize Operations to embrace New markets

In the search for revenue growth, chemical manufacturing companies are looking more and more to emerging markets in order to expand their global market reach. In addition to gaining proximity to high growth markets, these locations can often offer lower labor and material costs and enable new joint ventures, partnerships, and outsourcing arrangements. However, global expansion comes with complications in maintaining real time operational visibility and supply chain excellence and increases the need for collaboration and integration across multiple geographies and organizations.

Companies are also increasingly relying on global suppliers that in turn depend on next tier suppliers in countries far from primary production sites. As a result, the supply chain continues to grow in complexity and dependency, with remote supply chain disruptions having the potential to have a dramatic effect on the overall supply of raw materials or additives to global operations.

Many chemical companies are also changing their product lines, divesting themselves of lower margin products and moving into more complex value added products that spark revenue growth and improve profits.

The Strategy

Modernize operations to enable expansion into new markets and geographies and facilitate new joint ventures and partnerships.



Successful chemical manufacturers must react with increasing speed to new market opportunities and fluctuating economic conditions, and must master growing global operational complexity in order to achieve growth and stay ahead of the competition. The need for speed and agility are driving new software requirements including lean capabilities and the ability to facilitate real time global collaboration with suppliers and customers in context of the business process.

Microsoft Dynamics delivers a broad and deep range of powerful functionality that includes process, discrete, and lean manufacturing capabilities in a single unified modern solution. With real-time access to contextual role-based information and tools, your employees can improve operational efficiency across your business—whether in the office, on the shop floor, or at any location around the world.

The Possibilities

Real Time Global Operations: Integrate global operations and access information easily and securely from any location around the world.

Speed and Agility: Rapid onboarding of new geographies, product lines and suppliers.

Collaboration: Enable global collaboration with suppliers, customers and employees in context of the process.

Who Is Doing It?

Company gains better oversight of manufacturing and inventories thanks to Dynamics AX

Spolchemie is a top European manufacturer of synthetic resins. Its product line includes epoxy and alkyd resins. It has a global sales network that delivers its products to over 40 countries. The implementation of Microsoft Dynamics AX throughout the business group afforded the company a number of benefits. The most important of these related to demanding process manufacturing. For example, previously the company did not have at its disposal information about the actual status of inventory inputs in its manufacturing.¹

Xiamen Tungsten is the world's largest tungsten refinery. The company has extended operations to the entire industrial supply chain, including mining, smelting, and powder metallurgy and manufacturers materials that end up in consumer products such as light bulbs and batteries.

Given the enormous range of businesses and products under its corporate umbrella, the rapid growth of individual subsidiaries, and the geographic sprawl of its growing operations, Xiamen Group was challenged to ensure efficient flow of information up and down the supply chain.

"A unified ERP solution serves Xiamen Tungsten Group's financial management and controls. But more importantly, it meets needs of our many subsidiary companies across the entire discrete and process manufacturing industry."

Hong Chao'e

Vice President

Xiamen Tungsten Group

By implementing a single, comprehensive ERP and master data strategy across the entire enterprise and all subsidiaries, Xiamen Tungsten Group has standardized management and unified its many subsidiary businesses.

Xiamen implemented multiple forms of production, including flow manufacturing, discrete manufacturing, and lean manufacturing, as well as multiple business forms, selling its products in the domestic markets and importing and exporting finished goods across many sectors, with branches and subsidiaries distributed across China.

HOW CAN MICROSOFT HELP?

Enable Global Expansion: Scale your operations globally with multi-language, multi-currency, multi-site capabilities in a single instance.

Increase speed and agility:

Increase production planning and execution flexibility by unifying process, discrete, and lean manufacturing operations in one solution. Handle global customer demand spikes by rapidly onboarding new suppliers.

Connect and Optimize Operations: Connect sales and purchasing processes with logistics, production, warehouse and transportation management to provide end to end operations

¹ Microsoft Case Study, [Spolchemie](#), Redmond: 2012.

Manage Fluctuations in Pricing

Process manufacturing companies must evolve to meet the challenges of shifting global demand, the commoditization of products, and pricing volatility in energy, raw materials, and feed stocks.

The cost of raw materials and energy costs continue to rise and as businesses becomes increasingly global, changing geopolitical conditions can unexpectedly impact costs and supply. These fluctuations need to be rapidly understood and factored into operational and pricing strategies.

51%

Of manufacturers cited the cost of raw materials as their main business priority.²

The Strategy

Manage fluctuations in pricing— harness the power of instant information and business intelligence.

Chemical companies usually have large exposures to raw material and energy costs. It's usually clear that sharply rising raw material and energy costs can impact profitability. What's not so clear is that companies that can react quickly to market changes and easily adjust pricing can find ways to grow revenue in a volatile market. Effective raw material and energy cost management can be a significant competitive advantage in today's environment.

² US Environmental Protection Agency - IMT
<http://www.epa.gov/sectors/sectorinfo/sectorprofiles/chemical.html>

Modern business solutions allow for rapid response to cost and price changes and consider energy and water use, waste, scrap and by products in operational and pricing decisions. Flexible pricing structures and supporting functionality are needed to easily change costs, price break quantities, and effective dates and roll out to appropriate sales trade agreements.

The Possibilities

Adapt: Enable change with simple model driven methods and an architecture built for change.

React: Effectively react to changing commodity costs so the prices of sellable goods always stay current with the market.

Sell: Manage sellable product prices such that trade agreements are always up to date and new contracts reflect the price change³.

Who's Doing It?

Spolchemie. Using Microsoft Dynamics, now all inventories are appraised based on FIFO, where the system continually calculates the aggregate purchase price of input products based on the actual amount of material consumed. For inputs purchased abroad, the system also takes into consideration current changes in exchange rates on money markets. Thanks to this, the company can continually adjust the prices of its products so that it keeps the desired margin and minimizes the risk of selling below cost⁴.

Xiamen Tungsten has consolidated procurement across the enterprise, leading to efficiencies and enabling more effective intercompany purchasing and sharing of resources. Microsoft Dynamics enables the Group to set flexible procurement policies according to the operational characteristics of the different subsidiaries.

³ Gupta, A., *Process Manufacturing Dynamics AX2012 capabilities*, Redmond: 2012.

⁴ Microsoft Case Study, *Spolchemie*, Redmond: 2012.

Centralized procurement allows the Group to improve purchasing power by combining purchase requests from multiple sources. Subsidiaries that prefer to exercise independent purchasing can still refer to the central data store to compare purchase prices for commodities, increasing their bargaining power with suppliers.



Heritage Bags is the largest manufacturer of institutional/industrial trash bags and can liners in the United States. Because Heritage is in a competitive business, it must also work hard to control its margins. This means timing the markets—strategically buying raw material that goes into its manufacturing process when the price is low—while maintaining tight control over operations and harnessing the business insight needed to fuel strategic decision-making.

In a competitive business sector, Heritage has been able to compete effectively by keeping its inventory aligned both with the needs of its customers and with fluctuations in the price of resin.

With the ability to grow and change as the primary factor for choosing a new system, Heritage now has the capability to be agile and responsive to market demands.⁵

⁵ Microsoft Case Study, [Heritage Bag Company](#), Redmond: 2013

"It has been extremely important to have tools like Microsoft Dynamics AX and Microsoft Dynamics CRM, which allow us to improve one part of the business and then, as we move onto another part, know that we still have the tools in place to do that—we won't have to go out and find another system."

Doug Sheffield

Vice President of Supply Chain Management and IT, Heritage Bag Company

HOW CAN MICROSOFT HELP?

Procurement and Sourcing:

Facilitate direct and indirect procurement of goods and services, and establish a centralized buyer capability across your organization to support procurement policies and processes.

Manage vendor pricing:

Manage price and multifaceted discount policies in all currencies. The price revision process can be governed by work flows to ensure compliance with internal policies.

Engage People: Engage staff by surfacing actionable materials and pricing insight and business intelligence that enables proactive response.

Manage regulatory and compliance efforts

Chemical manufacturers are subject to increasing regulation. Everyone agrees on the objective: safe products and safe production, transport, storage, and disposal that won't hurt people or damage the environment. But achieving those objectives can be complex and ultimately costly to chemical manufacturers.

10,000

In just the past five years, it is estimated that nearly 10,000 regulations have been created by federal and industry entities and that \$80 billion will be spent over the next five years because of them⁶.

Companies face rules for safe management of facilities that make or use chemicals and other hazardous materials and for the publication, management, and use of information. One particular requirement is the need to trace and track compounds across the value chain, from supplier to final customer.

Large costs can be incurred to meet these regulations and even higher costs can be incurred by not meeting them. There are large risks in critical areas such as safety, the environment and brand.

⁶ United States EPA, [Chemical Manufacturing Sector Information](#), 2011



The Strategy

Help ensure compliance with laws, regulations, policies, and business rules. Manage the implementation and execution of internal controls with the Compliance Center.

Sustainable manufacturing is also becoming increasingly important to chemical manufacturers. Companies need to monitor and reduce water and energy consumption, protect the environment and recycle materials not only to follow laws and regulations, but also because of customer demand and company values.

The Possibilities

Extend your business management solution to achieve regulatory compliance. Whether you need to comply with Sarbanes-Oxley, HIPAA, GASB, or any other regulatory or corporate standard, integrity of your information is critical. You can use your business management solution to maintain optimal integrity and data security and to obtain pervasive control in your compliance efforts.

Be Compliant AND profitable: Go above and beyond government regulations and design and implement waste and energy and water-use reductions at a level that provides superior cost performance and recognizable customer value.

Who's doing it?

Heritage Bag

Recognizing that to thrive in the face of challenges, the company needed to be able to grow and change, Heritage decided to replace its homegrown business management system with an end-to-end enterprise resource planning (ERP) system⁷.

Most recently, the company has used the systems to extend its line of eco-friendly bags, which have seen enormous success particularly on the West Coast of the United States.

Although its ERP and CRM systems have each driven their own efficiencies, together they have enabled the company to connect operational data with sales and garner newfound business insight.

With a standardized, fully integrated business solution supporting all facets of its business, Heritage has seen considerable improvements in productivity.

How Can Microsoft Help?

Regulatory Compliance Receive, store and send product safety data sheets for hazardous products as needed. Keep product safety data sheets current with the company and customers, Comply with local regulatory agencies by restricting or regulating the sale of certain products in certain regions⁸.

Internal Controls.

Help ensure compliance with laws, regulations, policies, and business rules. Manage the implementation and execution of internal controls with the Compliance Center.

Quality Management: Improve business processes for quality assurance, quality control, and lot traceability. Manage the test process.

⁷ Microsoft Case Study, [Heritage Bag Company](#), Redmond: 2013

⁸ Gupta, A., *Process Manufacturing Dynamics AX2012 capabilities*, Redmond: 2012.

Conclusion

The Chemical Industry is facing change from many directions – shifts in the economy, emerging markets, globalization of the supply chain, increasing regulations and raw material price volatility. In response, chemical manufacturers need business solutions that adapt efficiently to new products and markets, vigorously protect intellectual property, meet increased obligations of environmental protection and continually adjust to new regulatory requirements.

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For more information, visit www.microsoft.com/dynamics/manufacturing

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 Microsoft Dynamics