## Current Issue

Chemical reactions
By Amy Binder

DuPont's sticking strictly to business even as its operations become more IT intensive.

Two hundred years ago, DuPont was an explosives manufacturer. One hundred years ago, it transformed itself into a leader in chemicals, materials, and energy. Today, DuPont is undergoing another transformation, into a company that harnesses "the miracles of science" in areas as diverse as food and nutrition to apparel, construction, and electronics.

One thing DuPont doesn't want to be is in the software business, even as it increasingly relies on IT solutions to drive the next wave of business improvements, explains Carmen DeVito, senior vice president and corporate process owner, manufacturing, for the $27-billion Wilmington, Del.-based company. "Our manufacturing strategy is to significantly increase productivity using Six Sigma methodology, which requires having a lot of data about real-time performance. Yet our systems weren't able to support where we needed to be. To integrate our plant systems with our business systems, we needed to invest in new technology."
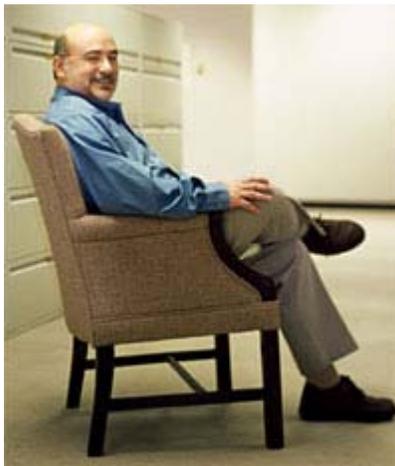
DuPont's plants now get the information they need "in seconds to minutes, instead of weeks to months," says Senior Vice President Carmen DeVito.

There were many routes DeVito could have taken, but, he says, "I'm a business person, not an IT person. We spend a lot of time picking the right tools to meet our business needs and the right partners to work with."

Aspen Technology Inc. (AspenTech), a Microsoft industry partner in Cambridge, Mass., was a natural choice as DuPont began the task of integrating its plant sites with SAP, the company's global enterprise resource planning (ERP) system. "We've been collaborating with AspenTech in manufacturing operations for well over a decade," says Salvatore F. Grasso, DuPont alliance manager. "DuPont is a major user of AspenTech's manufacturing suite of applications. We have more than 100 plant sites worldwide monitoring over a million process variables with AspenTech technology."

"We had done some point-to-point integration, which tended to be one-off projects that took a long time to build, were hard to maintain, and proved an expensive way to go," DeVito says. "What we wanted to do was go across the company, connecting all plant sites that needed to share information between shop-floor automation systems and SAP business systems. This would allow us to provide increased visibility into real-time performance, enabling our managers and operators to make better business decisions and drive operational excellence."

The AspenTech solution being deployed by DuPont, Aspen Operations Manager, provides IT managers with a reliable integration platform that connects their plants with business applications. As the performance management console for AspenTech's aspenONE solutions, Aspen Operations Manager uses industry-standard products from Microsoft and other vendors to provide a common set of capabilities and a strong foundation to integrate enterprise systems. Aspen Operations Manager is currently in use at more than 30 major process

manufacturers.

"Our plants now know what's being made and what's been delivered as it happens," DeVito says. "They get the information in seconds to minutes, instead of weeks to months."

"New and scary"

DuPont started on its integration strategy three years ago. At first it wasn't an easy sell to the business units. While DuPont and AspenTech had partnered on several implementations over 10 years, the large-scale integration project would be a first.

"To AspenTech, it's a market broadening strategy; to our people, it was new and scary," DeVito says. "We were able to get two business units to sign up, and that was enough to underwrite the project. The success of our first go-live, in August 2002, made it easy to sell the others, and now our five business units are on board."

The initial project had a 1.8-year payback target. As more businesses were added, and the incremental cost to add sites fell below point-to-point solutions, payback was achieved within the first year. DeVito notes that the system is providing capability to the business it didn't have with any other option, and it's doing so at a Six Sigma level. "There are very few business processes that run at true Six Sigma," he says.

Rollout of the system continues, with about one-third of DuPont's manufacturing footprint now integrated. DeVito considers the technology an enabler, with return on investment measured by the ability to leverage existing systems and bring greater visibility to actual manufacturing performance.

"We're talking about manufacturing processes as different as Corian sinks and industrial chemicals," DeVito says, "different physical processes and much different products. But when you talk about systems modeling, there are commonalities you can drive down to the shop floor. And that's critical when you're a lean manufacturer, working with just-in-time shipments. Your margin for handling disruptions and unplanned outages gets slimmer, so you need the connection, accuracy, and dependability from plant to plant to ERP."

Perfect partners

AspenTech develops its products using Microsoft Visual Studio .NET 2003 and, for process manufacturing, the C# programming language. Solutions are designed to take advantage of Microsoft SQL Server 2000 and Microsoft Windows Server 2003.

"We build with Microsoft technologies because they have gained the most momentum with our customers, and they give us the flexibility we need to deliver enterprisewide solutions," says Steve Pringle, senior vice president of the manufacturing and supply chain division at AspenTech.

"With Microsoft tools and technology, the development cycle for our products is significantly reduced, which accelerates our time to market," says Manolis Kotzabasakis, AspenTech senior vice president of corporate strategy and marketing. "By building our systems on a Microsoft platform, our customers can easily connect users across their global operations in a simplified way, using the same technology they're used to using on a day-to-day basis.

According to Al Cassista, alliance director at AspenTech, the relationship with Microsoft is multidimensional. "We both bring a lot to the table, and we collaborate on several fronts: development, training, joint marketing, sales, and leveraging our technologies to solve customer problems," he says. "Working with Microsoft, we're now moving from browser-based solutions to portals, where users can personalize their interface to see only the information that's relevant to them."

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Photograph by Kate Swan