Spinning Thread into Gold at DuPont's Nylon Business Unit

DuPont's Nylon Business Unit originally became involved with Dimensional Insight in 1994 during a large data warehouse project. The project goal was to provide financial analysts with integrated tools to examine the profitability of product sales in North America. Based on that project's success, the use of DI-Diver quickly spread from the business, marketing and sales functions to use on the manufacturing shop floor at Nylon's plant sites. It's also being used today for downstream product supply chain analysis.

Financial Analysis

"The initial project involved extracting a tremendous amount of data from sales and distribution systems, corporate and manufacturing cost systems," explains Bob Sloan, Senior IS Consultant within DuPont's Nylon Business Unit. "We gathered detailed cost information from the plant sites and tapped into our invoicing systems to gather information regarding which customer bought what goods, on what date, and at what price. We integrated these basic data feeds into a large data warehouse (Unix/Sybase). From that integrated data warehouse we built end-user focused DI Model 'Data Marts' and distributed them to regional servers for high-speed end-user access. The project was a big success because it accomplished the goal of providing an integrated way for people with different perspectives to analyze a consistent set of data. Cost analysts at manufacturing sites concerned with manufacturing costs, financial analysts in the business units concerned with revenue and sales, and business managers mostly concerned with profitability could all use the same integrated data source."

"As soon as the sales, business, and manufacturing managers were able to 'dive down' into the data, they began to request DI Models in other subject areas for analysis. We moved into production scheduling, production forecasting, customer demand forecasting, and inventory control. Today

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> DuPont's Nylon Business Unit
> Sr. IS Consultant

we are using DI products very extensively at some of our plant sites to do shop floor production yield analysis," says Sloan.

Production Scheduling

"With production scheduling, the question is, how do you optimize the manufacturing of products on multiple manufacturing lines at multiple plant sites, so that the products are produced most efficiently and effectively. Individual manufacturing lines can produce a variety of products. We change the product produced on a specific line as infrequently as possible because it's so expensive. Therefore, it's important to make the right amount of product once it's in production. Using DI-Diver, we can look at product inventory levels, production capacity, historical customer demand, and known actual demand. The Models provide a decision support and detailed analysis layer for managers and production schedulers to do the 'what ifs' necessary for effective production line scheduling," explains Sloan.

Shop Floor Yield Analysis

"For years, DuPont has generated large amounts of manufacturing shop floor data," explains Scott Covert, of Computer Sciences Corporation. "But, because of the volume and lack of integration, very little information was being gleaned from that data. We were challenged with the implementation of a data warehouse to better integrate that shop floor data and provide production yield analysis. DI-Diver was selected as a tool for presenting that information. It turned out to be much more than what we expected."

"We began using DI-Diver on the shop floor at one of our synthetic fiber manufacturing sites. The site has multiple manufacturing lines, each containing about one hundred

spinning positions. Computer applications existed that monitored individual spinning positions. Each of those positions should theoretically be making a thread, and we monitor them because if a thread breaks, or a position shuts down, we need to know why. Using DI-Atlantis, we are able to pull information out of those monitoring applications and create DI Models. Process engineers can then examine positional downtime patterns and figure out why they were down. They can easily see which operator was working at that time, what materials were being used, and what product was being produced. They can quickly identify downtime root cause and make the adjustments necessary to get the problem positions back into full production," says Sloan.

"With DI-Diver, anybody can get at the data. It would have cost us millions of dollars to upgrade all of our shop floor systems to new technology. DI-Diver provides us with so much more information it's unbelievable. It changed the way that we approach running the shop floor. Now, instead of spending time digging through the information to figure out where the problem is, we focus on fixing the problem." says Covert.

Product Supply Chain Analysis

"Many of DuPont Nylon's products are sold as raw materials and used by our customers to produce other products. Understanding how our raw materials perform down that supply chain is important. In our STAINMASTER, carpet fiber business, we produce a branded Nylon fiber, which we sell to carpet mills. The manufactured carpet is then sold to retailers, who sell direct to customers. We track the fiber going to the carpet mill, the carpet produced from that fiber, the retailer it was delivered to, and ultimately the consumer who bought it. We gather this information so that we can provide consumer carpet warranties. But the information is extremely important to our marketing team. They need to know what kinds of fiber and which styles of carpet are selling where. All this 'carpet supply chain' data is delivered to our internal marketing team in DI Models. We are using both DI-Diver and DI-WebDiver because many of the sales and marketing people are scattered around the country. DI-WebDiver gives us the ability to deliver information to them remotely," says Sloan.

Michael Ritter is a Marketing Manager in the STAINMASTER, carpet fiber business unit. He says, "I have created a Dive Book for the marketing team, which includes reports by individual accountability. Each account manager has three reports, which are each listed separately. The Dive Book represents about seventy percent of reports that we look at continuously. People will go in, run that report, walk into the meeting and say here's how I have done versus goals," says Ritter.

Return on Investment

"We originally selected DI-Atlantis because it seemed to fit the needs of our financial analyst community. The DI-Atlantis products are popular with our users. All too often IT pushes new technology, in the case of DI-Atlantis the users 'pulled' the product into new application areas. As a result we have been able to expand its use into a variety of other functional and business areas across DuPont Nylon. It has proven to be a reliable and easy to use analysis tool, and has definitely improved our decision making processes. It changed the way we approach running the shop floor. Now, instead of spending time digging through the information to figure out where the problem is, we spend that time fixing the problem. I am certain that DuPont will recoup its investments in DI-Atlantis many times over. I don't know how this business would run without it at this point," says Sloan.

About DI

Dimensional Insight offers business intelligence solutions that put you in command of your business. Companies worldwide use our technology to target opportunities, track performance, and increase profits. Our flagship product, DI-Atlantis, offers powerful reporting and multidimensional analysis. Navigating through data with DI-Diver is simple for non-technical users, enabling decision-makers across all functional areas of a corporation to access data quickly and intuitively. The solution provides flexible, scalable architecture, secure report distribution, and quick implementation. We also offer specialized solutions for wholesale/distribution, healthcare, manufacturing, and publishing.