

BI Case Study

SMALL MANUFACTURING FIRM CUSTOMIZES ITS DATA

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Using a real-world, proof-of-concept challenge, a precision engineering company quickly found a powerful, easy-to-customize data warehouse automation and reporting tool. The software brings the speed of internal processes up to its renowned lead times as a custom precision engineered-to-order manufacturer.

Custom manufacturing of precision parts requires quick cross-department collaboration in order to specify the materials needed, get realistic quotes to the customer, and manufacture the item—all on tight deadlines. Mott, a small employee-owned company based in Farmington, CT, prides itself on both the quality of its custom-made products and the speed with which it produces them. The 50-year-old company manufactures highly specialized products for specific market segments and industries—products such as breathing apparatus filters for firefighters, precision gas filters used to create microchips for smartphones, and intricate mechanisms for NASA.

To maintain its reputation for speed, precision, and responsiveness, Mott needed a better way for salespeople, engineers, and managers to quickly pull data from the firm's data warehouse into a range of reports.

According to Anthony Antony, the head of ERP applications at Mott, the need for an easier-to-use and easier-to-customize reporting tool arose in 2015 when Mott moved to Microsoft

Dynamics AX as its ERP platform. The product included standard ERP tools for reporting, including cubes, but challenges arose immediately when Antony's IT staff began to receive frequent requests for quick changes to reports.

“With a small IT team, you have constant and differing demands for their talents,” he pointed out. In this case, those frequent requests for changes to the standard reports in Dynamics AX proved to be more challenging than Mott had anticipated when it rolled out the product. For one thing, Antony said, altering reports in response to business requests required his team to understand specifics about a suite of Microsoft SQL Server products—including SSRS (SQL Server Reporting Services) and SSDT (SQL Server Data Tools). With testing the changes, rolling them out, putting the code into a build, and deploying it to production as a new report available to business users, “it became very tedious to make modifications,” Antony said. Moreover, it quickly became evident that many of the standard reports in the ERP product needed extensive changes—and those changes had to be made much faster than his team could work.

As Mott's IT team struggled to meet user expectations for better, quicker data access and more efficient reporting processes, it amassed a backlog of requests for custom reports. Each change required coding experience and could take weeks to complete. In a maneuver common to companies everywhere, to accelerate the process the business side often used Microsoft Excel to pull in raw data and manually sort it for their price quotes, bills of material, and other data, creating an unsustainable load on the

servers. Even so, complex sales estimates could take days to generate.

QUICK AND CLEVER PROOF OF CONCEPT

Clearly, something needed to be done and quickly. Realizing that the IT department—and the company itself—needed a data automation and reporting tool that made it easier to create and customize reports, Antony came up with a vendor challenge to find the right product. He invited several ERP vendors to participate in a challenging proof-of-concept task. To make sure that what he was getting reflected what his team would need in real-world situations, Antony asked interested vendors to build a particularly difficult report that the business side had asked him for—using real data from Mott.

He created a scoring system to rate the vendors that took into account items such as the product's prebuilt source integration with Dynamics AX and its out-of-the-box cubes, whether it supported structural changes in the data, whether it integrated with other data sources, how easily it extracted data, and how well it freed staff from coding—a key point. The scoring system also weighed the time and cost to implement the solution—another key concern for Antony.

The results were illuminating. “We said, ‘See if you can build this difficult report using our data and show us how quickly you can do it,’” Antony said. The ultimate goal, he explained, was to build the initial report and ensure it was easy to customize as requests for modifications flowed in. “We wanted to allow any one of our team to be able to help out [with making changes] on any report.”

Some vendors took a pass immediately, explaining that they would need more time to write the necessary code. Those vendors were immediately dismissed from the competition. One vendor asked for six to nine months in order to manually create the reports, Antony relates incredulously. “It was a very tedious solution.” It was also the exact opposite of what he was looking for.

An important part of the proof-of-concept task was that the vendor use Mott’s data. “That was the challenge and the hardest part,” Antony admits. “They had to use our data and use it in our environment.” As the competing vendors worked to produce the reports, “I just babysat,” Antony said. “I watched how quickly each of them could do this.”

Two vendors came close, but in the end there was a clear winner—TimeXtender, which offers a data warehouse automation platform called TX DWA. The product uses a discovery hub—a concept defined by longtime data management expert Barry Devlin of 9sight Consulting in a 2016 paper “Data Discovery Automation: Learning from the Warehouse Experience” (see sidebar on next page). According to Devlin, a discovery hub is “a data store where core business information can be cleansed, reconciled, and made available as a consistent resource to data discovery users, while allowing them the freedom to source other data they need elsewhere.”

Those key concepts of a discovery hub—cleansing and reconciling data to make it available to users, while letting them access data from other sources as well—helped make the product a perfect fit for Mott’s needs.

TimeXtender excelled right out of the gate in the proof-of-concept challenge, producing the required report in just three hours. “In terms of making changes easily, TimeXtender won. It’s a very GUI product,” Antony says.

Things moved quickly from there. Within a day of installation, TimeXtender was fully integrated with Mott’s real-time systems. Antony was able to build the initial data warehouse, deploy it, and “within three to four hours we got the first report.” Final delivery of seven critical reports—fully integrated with a complete data warehouse—was completed in three weeks.

Finally, Mott had software that brought the speed of its internal processes up to its renowned industry lead times as a custom manufacturer. One of the executives who had explicitly wanted faster reporting was Mott’s chief financial officer at the time, who was elated with the fast report turnaround. “Our CFO was very happy,” Antony confirms.

Now, Antony said, reports that once took weeks or even months to produce could be created by users in hours, especially if the report was a variation of an existing one. Mott’s executives had real-time insights into data, and departments and divisions could more quickly ramp up and report back, making better-informed decisions. Team leader dashboards refreshed every 10 minutes, showing real-time delivery statistics, which minimized downtime and overload.

FUTURE PLANS

By making reports and data much more available to users, the TimeXtender system has democratized data access at Mott and brought about a change in company culture. “We’re using TimeXtender for things it’s not even intended for,” Antony says. For example, working with TimeXtender he has built costing and pricing tools that allow users to pull data from a variety of sources—including Excel and Dynamics AX—then make quick decisions based on the resulting report.

Mott salespeople looking for quick quotes can use the pricing tools to pull in data from different systems and then validate a quote to a customer. Though producing a complex price quote used to take days, it now takes perhaps 30 minutes. Similarly, a new costing tool for building bills of material and routes takes costing data from Dynamics AX and gives the requesting engineer a detailed breakdown of the steps and materials required to build the project. ●

UNDERSTANDING A DISCOVERY HUB

The use of a discovery hub is key to TimeXtender’s data warehouse automation platform, TX DWA. In an April 2016 paper, analyst Barry Devlin of 9sight Consulting defines a discovery hub as a place where “core business data can be cleansed, reconciled and documented prior to making it available to business users through data discovery tools.” Devlin explains that the discovery hub addresses current challenges in user data access that include the long-standing and pervasive issue of data quality, the lack of data consistency across multiple sources, and business users analyzing data that may be beyond their understanding. All of those challenges faced Mott, making it a particularly good fit for TimeXtender. Devlin’s paper, which delves far deeper into the subject of data discovery and data hubs, is available at <http://go.timextender.com/download-data-discovery-automation-whitepaper>.