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CASE STUDY

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Dan Rosman
Director of Information Technology
Jelly Belly Candy Company

Candy Maker Tracks Exacting Sales Information with New Data Warehouse

Jelly Belly Candy Company now tracks sales of its jelly beans and other products on a daily basis—instead of monthly—since deploying a sales data warehouse based on Microsoft® SQL Server™ 2000 Analysis Services, part of the Windows Server System™ integrated server software. The data warehouse uses information from the company's enterprise resource planning application to create multidimensional data cubes that support fast and flexible queries of sales information. This business intelligence solution replaces a set of green-bar printout (continuous-feed paper) reports and an inflexible Web-based reporting tool. With the new data warehouse, remote users can access data 10 times faster and daily sales information can be updated 12 times faster compared with the earlier system. Jelly Belly considered using Oracle but found the SQL Server-based solution to be a greater value.

Situation:
Jelly Belly Candy Company traces its roots back to 1869 when two young brothers, Gustav and Albert Goelitz, emigrated from Germany and started making candies in the United States. The company is internationally known for its Jelly Belly beans, which are sold in 35 countries.

The company also makes Candy Corn, Chocolate Dutch Mints, Gummi Bears, Wiggle Worms, and other confections—and, for Harry Potter fans in North America, Bertie Bott's Every Flavor Beans containing unusual flavors ranging from Green Apple and Toasted Marshmallow to the more adventuresome Dirt, Ear Wax, and Sardine.

Jelly Belly needed a better way to analyze its sales data to more precisely gauge the company's global efforts. Jelly Belly's old report-ing system, which had been created in-house more than a decade ago, was a UNIX-based, flat-file application that connected with the company's Cimpro enterprise resource plan-ning (ERP) system. The old system had frag-mented reporting capabilities: "green-bar" (continuous-feed paper) printouts from the ERP system, a green-screen display of ERP data, and a custom Web-based interface to the ERP data that had limited flexibility and scalability.

"Our old system didn't let us drill down to lower levels of data," says Joe Coulter, Business Systems Manager, Jelly Belly Candy Company. "The reports showed us a monthly level of data, but we wanted to be able to look at what was happening on a weekly and daily basis. We also needed the ability to customize the filters for the data so we could gain more detail about what was happening on a product basis and customer basis."

OVERVIEW:
Country: United States
Industry: Food

CUSTOMER PROFILE:
Based in Fairfield, California, Jelly Belly Candy Company is a privately held company that sells goods in 33 countries. Jelly Belly reported annual sales of more than U.S. $140 million in 2003.

BUSINESS SITUATION:
Jelly Belly needed a better way to analyze its enterprise resource planning data to more precisely gauge the company's global sales efforts.

The company wanted a reporting system that would support the kind of real-time exploration of sales data that allows managers to create their own search criteria without having to ask IT to develop custom reports.

Solution:
For its new sales data warehouse solution, Jelly Belly evaluated both Microsoft® SQL Server™ 2000 and Oracle—which Jelly Belly has used in the past for some of its applications. Jelly Belly invited an Oracle solution provider and Netwoven, an enterprise solution company specializing in Microsoft technologies, to create prototypes using data from Jelly Belly's ERP system. An important part of the prototyping was showing how information would be moved from the company's ERP system into the data warehouse.

Jelly Belly chose Netwoven and SQL Server, part of the Microsoft Windows Server System™ integrated server software, because the Microsoft solution provided a complete data warehousing system that integrated well with the company's IT infrastructure and provided a better overall value. The company also was impressed with Netwoven's data warehousing expertise.

Working with Netwoven, which was founded by former Microsoft employees who specialized in knowledge management, business intelligence, and application integration solutions, Jelly Belly created the sales data warehouse based on Microsoft SQL Server 2000 Standard Edition Analysis Services, running on the Microsoft Windows® 2000 Server operating system (also part of Windows Server System). The solution was deployed on a Dell PowerEdge 2650 dual-processor server, with a second PowerEdge 2650 server identically configured as a cold backup, and a third established for development and testing. Analysis Services, the online analytical processing (OLAP) component in SQL Server, was used to create two cubes: one for sales information and another for forecasting. Each cube has 10 dimensions with multiple hierarchies. Jelly Belly also created a third "virtual cube" that allows the sales data and forecasting cubes to be accessed as if working with a single cube.

The SQL Server Data Transformation Services (DTS) feature is used to transform the flat-file data from Jelly Belly's ERP system for use in the data warehouse.

The Microsoft Windows XP operating system and Microsoft Office XP Professional are used on client systems. Microsoft Excel 2002 is used extensively for connecting to the data warehouse for analysis and reporting. Jelly Belly also worked with Panorama Software, and deployed Panorama NovaView Business Intelligence Platform 3.0 for viewing sales data warehouse information.

The entire data warehouse solution was completed within 12 weeks and ahead of schedule.

Better Data to Support Better Business Decisions
Dan Rosman, Director of Information Technology at Jelly Belly Candy Company, knew his company would gain better visibility into its ERP data when it deployed its new data warehouse and Analysis Services-based multidimensional cubes. But he was surprised by the immediacy of the impact, including reducing the time that used to be spent searching for data.

"We have monthly product review meetings where the sales and marketing and other teams look at what products are working well, whether any are struggling, and where we want to focus our attention," Rosman says. "People used to walk into the meetings with green-bar reports, and others would come in with printouts from the Web reporting system, and the meetings would drag on and on because the data would often be incomplete and sometimes conflicting. There was no way to drill down or take another slice. People would have to leave the room in search of better numbers, and frequently follow-up meetings would need to be scheduled.

"With SQL Server and Analysis Services, we have much better data visibility. The information is right there on the laptop for everyone to see. Using NovaView or Microsoft Excel, you can drill down in real time. You can get the information you need. As a result, we've slashed the time of our product review meetings by about 75 percent."

Rosman lauds the ability to get up-to-date information quickly for faster decision making. "With the old system, all we could get were monthly numbers," he says. "The flexibility of our Microsoft SQL Server–based data warehouse helps our senior managers to get information more quickly and make decisions faster. Now if the executive staff is in a meeting and somebody brings up a question about sales to a specific customer or sales of a specific item, anyone in the meeting can immediately pull the information from Analysis Services, get complete data as of yesterday, and break that down by day or any number of other criteria." According to Rosman, the greater visibility has produced cleaner data because it is much easier to identify errors and trace the cause.

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> Jelly Belly Candy Company

SOLUTION:
Jelly Belly deployed a business intelligence solution using a data warehouse based on Microsoft SQL Server™ 2000 Standard Edition Analysis Services, running on the Microsoft Windows® 2000 Server operating system.

BENEFITS:
Jelly Belly's new business intelligence solution provides a number of benefits, including:

- Better data to support better business decisions
- Flexible customized reports
- Faster remote connectivity
- Faster data updates
- Better service availability
- Better value

"I attend a weekly executive management meeting that begins with a review of our sales by division and a look at the supporting data behind the major shipments that have occurred through that reporting period," Rosman says. "We might look at a big Costco shipment or a big Target shipment. During one meeting, our chief executive officer spotted a million-dollar sale to a customer that would have never purchased such a large amount in such a short time frame. He picked right up on it and said, 'What the heck is this?'"

With the old system, it could have taken hours to resolve the question, including contacting salespeople in the field. Instead, Rosman was able to tap into the sales data cube from his laptop and solve the mystery in less than a minute.

"I just pulled up the shipment information and was able to say exactly to whom it was shipped—which turned out to be correct," Rosman says. "It was then easy to trace the data back and determine that someone had simply coded the sale to the incorrect key account. It was a wonderful on-the-spot demonstration of the value of our data warehouse."

Rosman says use of the data warehouse is expanding to other parts of the company, including manufacturing. "We're surprised by how many people are making use of the data warehouse," Rosman says. "This is good to see, because information is what people need to do their jobs better."

Flexible Customized Reports

Whether using Microsoft Excel (which can be linked directly to the data warehouse cubes) or NovaView, Jelly Belly managers enjoy a wealth of possibilities as they explore the data—viewing it across different dimensions and drilling down for whatever detail they need. This is a welcome change from the old system.

"With the old ERP reports, you got what the programmer gave you and that was it," Rosman says. "Sure, some business people suggested what they needed in those fixed reports, but the decisions were made 10 years ago.

"We've created a series of template-based reports for the data warehouse, but the dif-ference is that users can take a report and reconfigure it anyway they like," Rosman continues. "They can store their custom report and go back to it anytime they want with a simple click of the mouse. Your custom report automatically updates with fresh data whenever you use it. That's a huge timesaver.

With the old ERP reports, there were some reports that allowed a limited set of parameters to be altered—but every time you wanted to use the report again, you had to go back in and reset the parameters. That was a good waste of time."

Managers across Jelly Belly appreciate the ability to pull data directly from the data ware-house into Excel. Prior to the data warehouse and DTS, it was difficult to export data from the ERP system to another application. "We have a lot of people who use Excel extensively, and it used to be a nightmare for them to pull the data from the ERP system to create their charts in Excel," Rosman says. "Now it's a piece of cake. At our annual Management Summit, it was nice to see people from across the company giving their presentations with all the data they needed. Each day people from sales and marketing presented in front of the whole management team, and it seemed like nearly all of them took time to say in one way or another: 'Thanks for giving us these tools.'"

The data warehouse has made information so easily available that IT is saving time by not having to print monthly green-bar reports—each of which was up to 1,000 pages. The group used to print more than a dozen reports a month. Now it is down to providing printed reports for just one person. "We used to have one person who spent three days compiling all those reports each month," says Coulter. "That person now needs only four hours a month to compile the reports."

Faster Remote Connectivity

Jelly Belly remote users are experiencing 10 times faster initiation of service over dial-up connections, compared with the earlier system. "We have a lot of remote users," says Coulter. " The old application would often take as long as 20 minutes to initialize before it would become available, and that isn't too productive. Remote users can now begin work within 5 minutes, and we're implementing Web-based access that will cut the time down to less than a minute."

Faster Data Updates

The new system also has slashed the time required for nightly updates. The old system didn't support incremental updates, so the complete database had to be loaded each night to support the remote system. Using DTS, only changed data from the ERP system is loaded, slashing the time required for nightly updates.

"The old system took from four to six hours a night to download," Coulter says. "The new system requires only about 30 minutes for updating, and the entire process is automated."

Better Service Availability

The stability of the SQL Server–based data warehouse is saving the company from more than a day and a half of lost availability each month. With the old system, the sales files had to be rebuilt once a month. "Rebuilding the files was about a 13-hour job," says Rosman. "We'd do it on a weekend, and for 13 hours we'd have to tell people not to run

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sales reports. SQL Server doesn't require rebuilding, so we're providing our people with better availability."

Better Value

Jelly Belly reports that it is moving from Oracle to SQL Server 2000 databases whenever the opportunity arises because of the cost savings. "We considered Oracle, but during the proposal stage Netwoven pro-posed such a complete data warehousing solution using SQL Server that we could see it was a better value," says Rosman.
"The data warehouse has proven to be a tremendous tool for us."

Future Plans

The data warehouse has been so successful that Jelly Belly is working with Netwoven to create two more data warehouses: a financial data warehouse and a distribution/inventory data warehouse.

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