

A close-up photograph of a pair of hands holding a large quantity of yellow soybeans. The hands are positioned in the center of the frame, with the fingers slightly curled to support the beans. The background is a soft-focus green field. A white semi-transparent box is overlaid on the lower part of the hands, containing the main title text.

Cargill: Using SAP® Technology to Help Feed the World

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Company

Cargill Inc.

Industry

Consumer products – food companies

Products and Services

Agribusiness

Web Sitewww.cargill.com**SAP® Solutions**

SAP® Sybase® Replication Server®

SAP Sybase Adaptive Server® Enterprise



Cargill, a global producer and distributor of food and agricultural products and more, needed to centralize its existing application for enterprise resource planning (ERP) to improve efficiency and reduce costs. With technology from SAP and Sybase, an SAP company, Cargill gained a solid, scalable platform to support growth and **managed to reduce IT operating costs from US\$42 million to \$13 million.**

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Delivering 11 billion bushels annually

Cargill Inc., the largest privately held company in the United States, is an international provider of food, agricultural, and risk management products and services and has more than 100,000 employees in 60 countries. Virtually every modern household throughout the globe has products in the refrigerator and on pantry shelves that can be traced back to the raw materials provided by Cargill.

The company's grain division sources, trades, processes, and distributes grain and oilseeds, including wheat, corn, soybeans, barley, and sorghum, and operates 200 facilities (including 37 import/export elevators and 19 crush plants) in the United States. During the fall harvest, Cargill processes around 16,000 daily deliveries from suppliers and ships more than 11 billion bushels of grain annually to its customers.



100,000+

Employees in 60 countries

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Consolidating for greater efficiency and lower costs

To manage everything from contracts with farmers to inventory tracking, and to support commodity futures trading, Cargill replaced a mainframe system with Lynx software for ERP. But there were issues – especially in the firm’s grain division.

Don Nielsen, manager of the database administrator group for Cargill’s grain division, explains, “With hundreds of users spread across more than 200 locations, the application required us to maintain 80 servers and some 1,200 client desktops.”

This decentralized setup led to lack of communication between business units responsible for the purchase, sale, and transport of grain, and required

a tremendous amount of effort to adapt hardware and software when Cargill added, moved, or consolidated sites. “We had to find a way to cut costs and free up our IT staff as well as the company’s back-office workers, so they could focus on delivering the level of customer service that differentiates us from our competitors,” says Nielsen.

To achieve these goals, Cargill moved to centralize its Lynx system. “This would eliminate a lot of overhead, especially since we’d no longer need separate database servers. In addition, hosting the application would simplify system administration and maintenance.”

“When you understand that we typically process 100,000 transactions a day, you can get a sense of the amount of effort and cost required to keep the decentralized system running.”

Don Nielsen, Manager of Database Administrator Group, Grain Division, Cargill Inc.



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Introducing high performance, enabling real-time availability

Even as it began the process of centralizing its ERP software, Cargill knew that having a robust, reliable high-performance replication solution was tantamount to success – if it wanted to ensure the real-time availability of the division’s 2.5 terabytes of data and be able to scale as the volume of data grew.

“We evaluated a number of databases,” Nielsen recalls, “and we narrowed our search to Sybase and Oracle. We knew that the critical functionality required to make Lynx work was the ability to share data across platforms. We already had a lot of experience with Sybase and were very satisfied with the technology and the support we received.”

Cargill was also very comfortable with SAP® Sybase® Adaptive Server® Enterprise (SAP Sybase ASE). “Those two factors drove our decision to implement Lynx on Sybase,” says Nielsen. “Beyond the technology, we were impressed with Sybase’s commitment to provide whatever support we might need to succeed and to sustain our success. Now that we’ve completed the project, I can’t imagine how we could have accomplished the task without Sybase technology and support.”

“As we explored our options, we concluded that Sybase replication technology was clearly superior to other available products.”

Don Nielsen, Manager of Database Administrator Group, Grain Division, Cargill Inc.



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Realizing a smooth transition

Most database administrators can tell you that they usually only show up on management's radar when something bad happens. That certainly was not Nielsen's experience. "The fact that we consolidated so many sites and so much data with so little impact on operations has made everyone quite happy," he says.

Transitioning to the new, centralized version of Lynx took a mere eight months. Dan Dye, president of Cargill AgHorizons, comments, "The team worked long hours and sacrificed significantly to deliver this project on time and within budget, without disrupting ongoing business operations."

"There was, however, a fair amount of apprehension about the transition," adds Nielsen. "Particularly regarding the final switchover to the new system. We'd originally scheduled four days of downtime to make that happen. As it turned out, we got it done in two days. Management and our users were very pleased, and not just because we pulled the project off successfully, but because we exceeded their expectations. Now, when they talk to us about the system, they often refer to it as 'Lynx on steroids!'"

Sybase's ongoing support has also proven invaluable in ensuring the continuous, seamless operation of the Lynx application. "We consider Sybase a key partner," says Nielsen.

"One of the most impressive aspects of this project is the collaboration and teamwork exhibited by all involved. The expectations were high, they had to work around many constraints, and the team seized every opportunity to ensure success."



Rita Heise, Corporate Vice President of Information Technology, Cargill Inc.

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Staying in sync

In Cargill's central IT department, databases are running on two HP Superdome servers. The Superdome is HP's most powerful, scalable server, offering superior performance, partitioning, connectivity, and availability. There are multiple databases, each averaging about 800 GB. In addition to the primary database, there are replicate copies to ensure business continuity and to support various processes, such as reporting. The SAP Sybase Replication Server® software helps keep these SAP Sybase ASE databases in sync.

At the company's remote sites, employees working on PCs access the Lynx application, which is now hosted centrally on Citrix. This has eliminated the

need to configure and maintain the application at each of the company's numerous sites.

As Nielsen explains, "Our local offices that handle the loading and unloading of grain capture that information on Lynx clients running on Windows XP. That information is sent via RF connectors to SAP Sybase ASE databases at one of our 80 remote server sites. The data is then transmitted by SAP Sybase Replication Server software at those sites, via frame relay technology or a virtual private network, to our central server in Minneapolis. As new data is entered into our central SAP Sybase ASE database, it is synchronized and backed up by additional replication servers located there."

"The centralization project is enabling us to be more efficient and effective as well as to reduce costs."

Dan Dye, President, Cargill AgHorizons, Cargill Inc.



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Keeping complex systems running with Sybase

"It's a fairly complex system, but thanks to Sybase, it's running smoothly," says Nielsen. "For example, in addition to the 2.5 TB of data stored in our central complex, we've got about 1,600 tables in our data model, about 6,000 stored procedures, and 4,000 triggers. The system manages inventories of approximately 1 billion bushels annually with as many as 16,000 daily shipments. On a typical day, we're moving a gigabyte of data back and forth across our enterprise and are running about 8,500 reports an hour. We simply couldn't do this effectively without Sybase."

Nielsen goes on to say that Cargill has managed to dramatically reduce its operating costs from \$42 million to \$13 million a year. "In addition," he says, "the enhanced performance and functionality has helped our 1,000 Lynx users serve customers more effectively, which is key to maintaining our ongoing success."

Cargill also now has a solid platform that can scale to support the company as it continues to grow. "We can add functionality as needed," comments Nielsen.



-\$29 million

Reduction in annual operating costs



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Enabling ongoing enhancements

Of course, endeavors like this are never done; they are continuing works in progress. And now that the centralization project has been completed, the Cargill grain unit's IT team is working on plans to extend the system to enhance customer service.

"We'd like to be able to give our customers more access to the system – for instance, to see their balances. We want to make it easier for them to do business with us," says Nielsen. "One of our goals is to create a generic interface to Lynx to enable that sharing of information as well as to automate various business processes. We've begun doing that with an automated truck unload feature that allows truckers, for example, to drive through a self-service gas station and enter delivery information directly into our system without the need for a Cargill employee to be on-site."

