FUJITSU

CASE STUDY
Seoul Milk

"Handling more than 50,000 online orders within 5 minutes
The adoption of the new server and storage system quadrupled the business efficiency"
Cheol-Soo Park, Management Information System Dept., Director Manager, Seoul Milk

▲ Seoul Milk Co., Ltd.

Background of Introduction
- Overloading of the ordering system due to the large orders caused delays of other tasks.
- The advent of the time from the upgrade ERP system, introduced in 2003.
- Increasing the storage and server capabilities with ERP upgrade

Adoption of the system
- General server : Fujitsu SPARC Enterprise M8000
- Storage : Fujitsu ETERNUS DX8400

Effects on the adoption
- Shortening the time of handling 50,000~60,000 orders per day by more than4 times.
- Increasing the IT users' convenience in the company
- Reproducing the periodic works in real time and durable backup copy of the data
- Establishing the system for the future DR Center

Project Outline

**Project name :** ERP Upgrade
Term : Apr.~Jul. 2010

SEOUL MILK

Introduction of Seoul Milk

In 1937, Seoul Milk Co., Ltd. started by establishing the Kyungsung Milk Trade Association, though it changed its name to Seoul Milk Trade Association in 1945. Its first factory (Jhungnang Bridge) was completed in 1962 and eventually moved the factory to Yang-ju in 1984. Then, Seoul Milk Co., Ltd. completed its 2nd factory (in Yong-in) in 1975, its 3rd factory (in Ansan) in 1989, and its 4th factory (in Geochang) in 2005. Currently 1,925 tons of milk is produced daily, utilizing 143,000 dairy cattle, and stored in various storage tanks around the country. To keep the freshness of milk to the highest standard, Seoul Milk measures the temperature through the whole distribution process. This includes at the time of collection, processing, delivery, and sales though retail stores for sale. This is managed through operating ERP together with the Transportation Management System (TMS).

Outline of Seoul Milk

Establishment	Kyungsung Milk Trade Association established in Jul, 1937. It changed the name into Seoul Milk Trade Association in Feb, 1945				
Current Status (in 2009)	Sales	Union members	Milk cows	Daily amount of gathering milk	Daily sales volume of milk
	1.4 trillion 839 million Won	2,138 persons	143,000 head	1,925 tons	8,034,000EA

<Source : Seoul Milk Co., Ltd.>
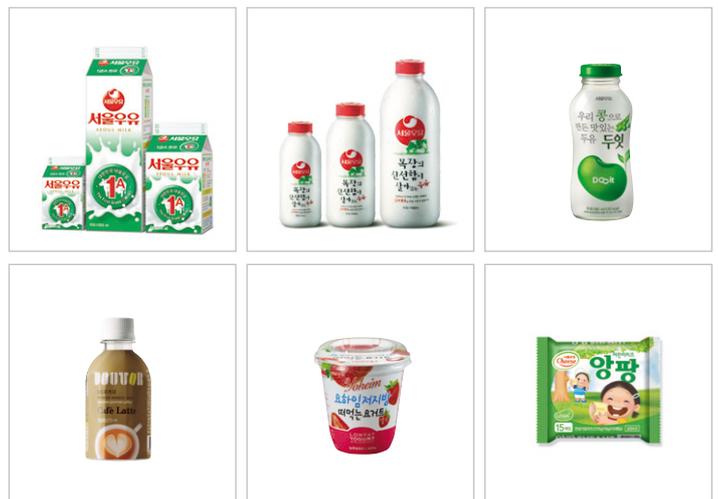
▲ Products of Seoul Milk Co., Ltd.

THE BENEFIT

Introduction Effects

The head office of Seoul Milk Co., Ltd. takes between 50,000~60,000 orders per day from various agencies and companies and needed 45~50 minutes to proceed these orders. Between 1:30 and 3:00pm, Seoul Milk received and finalized the orders, but during this time the system was overloaded and it caused delays of other tasks. However, after the storage and server were upgraded with ERP upgrade, the time to handle these orders was shortened to a remarkable 10 minutes. It makes employees in charge of other tasks such as accounting and inventory able to control their workload more efficiently, so it has improved satisfaction of the internal users.

Beyond Customer Satisfaction

When the ERP system was initially introduced in 2003, Seoul Milk's request was it was to handle its orders within 25~30 minutes. The volume of online orders did not reach 50,000 at that time. But now, in 2010 number of daily orders has reached 50,000~60,000 and it takes over 45 minutes to process them. Also, the business has been complicated with the greater number of factories compared to 2003, the amount of milk gathered and the number of dairy goods produces has also increased so the level of internal users' requirement and daily activities.

The system overload due to handling online orders (45~50min) produced the delays of other works. Thus, Seoul Milk decided to add the server and storage capabilities with ERP upgrade. As a result of the upgrade, the time to handle online orders has been cut to just 10 minutes and employees do not need to wait until receiving orders are completed to get on with their tasks. Such changes completely lead to improvement of practical user satisfaction within the company, and also its customers. Shortening time means to achieve beyond customer satisfaction. Seoul Milk had previously taken the orders by phone and handled them through EDI (Exchange Data Integration) in the mid-to-late 1990s but converted it into a web based ordering system in 2003. After the change to the web ordering system, 60,000 lines of data were input from 11:30am to 1:00pm with an additional 20,000 lines input in the evening. Seoul Milk had the competitiveness in the market since it adopted the web ordering system earlier than its competitors.

Seoul Milk's IT system is operated 24 hours - 365 days a year; taking orders and dealing with on-site work in day time, and dealing with the handling and storing of the production data and forwarding in the evening. IT support is necessary to be able to have 365 day production without stopping even in holidays as its systems must be running constantly in order for the product to be sold. In a sense, its IT department is operated busier than other financing companies.

Stable operation and prompt response

When ERP was introduced in 2003, there were remarkable changes to their IT system. Seoul Milk selected the world famous, 'Oracle E-Business Suite', and established ERP on a large scale and increased extensively its reliance on its Fujitsu server and storage units. After the establishment of ERP in Seoul Milk, there has not yet been a large hardware problem or failure. The stable system operation is the most important to Seoul Milk that aims at 24*7*365 non-stop system and its Fujitsu server and storage must meet these requirements.

 Such stability has been the main reason for Seoul Milk purchase and install further Fujitsu products for its IT network over its competitors. Not other IT company has been able to match Fujitsu's reliability.

Cheol-Soo Park, the director of Management Information System Team in Seoul Milk emphasizes "The most remarkable difference of Fujitsu Korea's system is prompt response compared with other global companies' system that we used in the past." Mr. Park says "We feel that Fujitsu Korea dedicates in a sense due to its prompt response to our demand". Also, Geung-Tae Kim, the manager of Information Support Team adds that "There has never been serious error of hardware that can break off the business owing to the immediate response and solution of Fujitsu Korea's staffs."

Other global companies delayed to make a decision with slow reaction as Seoul milk asked for support in business, but Fujitsu has supported it, considering that customer satisfaction as the first priority. That is Fujitsu Korea's secret of maintaining partnership with Seoul Milk for 25 years.

Establishing dual system

Seoul Milk evaluated that the hardware performance has been remarkably improved after the system was upgraded. Advances such as dual system and cluster construction played an important role and consequently, allowed non-stop systems to be operated.

Seoul Milk had used Fujitsu storage GR740 and ETERNUS6000 Model800 but newly introduced 2pcs of the latest enterprise storage 'ETERNUS8000 Model8400' with upgrading ERP this time. The ETERNUS brand has high stability coupled with rapid processing speed. It can move logical volumes to other RAID groups during calculations. This allows Seoul Milk's systems to run faster, and more efficiently. With a fall in the price of data storage, the cost to replace its tape backup library was similar to the cost to introduce new hard disk-based storage so Seoul Milk decided to introduce the new disk based systems. It means storing the reproducing periodic business data to a disk rather than the slower, and more costly tape storage. Also, Seoul Milk will be able to have backups of their storage rather than just one copy. Seoul Milk is operating dual systems to prepare for establishing a long-distance Disaster Recovery center (DR Center) in the future.

The ETERNUS models selected by Seoul Milk provides highly reliable storage performance for the data with verified software and solid architecture that is needed for the company's dynamic infrastructure. It also provides scalability in many fields and utilities that can use modern storage resources to the utmost ability. Through ETERNUS, we can

easily increase disk, cache, host interfaces so it is possible to react more promptly to required capacity and expansion of the connecting host. Moreover, it provides the highest energy efficiency among the same grades of storage.

The server has been dual in addition to the storage. The most commonly used servers, the database server and application server have both been dual. In this case, if one server is disconnected due to some hardware or software failure, other server can replace it so we can avoid a fatal error and lose business.

The SPARC Enterprise M8000 server adopted by Seoul Milk shows good scalability with the changing business circumstances that is unpredictable and provides high performance with transmitting a maximum of 184GB of data per second. Moreover, the checker embedded in the system monitors for signs of error and it detects abnormal status promptly by conducting memory scan through the separate memory controller and prevents the problem before it can occur.

IT to control the freshness

Seoul Milk produces milk and dairy goods that have very high stock turnover ratio. Especially, the competitiveness of milk is the 'freshness' so Seoul Milk started inscribing the date of manufacture to take advantage of the merit that its product is sold out first at retail stores. Seoul Milk is the first company that marks the milk's manufacturing date and expiration date at the same time.

To inscribe the date of manufacture of its products, Seoul Milk added

the facilities of its production line and could use reliable information by operating ERP together with TMS. Seoul Milk has the system that measures the temperature data from the gathering tank, factory, transportation vehicles and agencies and sends the data to a centralized control center. Milk transportation vehicles can keep the optimum temperature in the truck during the shipment via smart phones. The temperature is measured every 30 minutes and if it exceeds the proper temperature limit, it is immediately reported to the manager by Short Message System. The manager can check with the agency, isolate the problem and then, hopefully, correct it.

Seoul Milk is the first-sold and best selling dairy product in distribution stores. In the course of production-delivery-forwarding-consumption, Seoul Milk Co., Ltd. is attempting to do its best to provide the freshest milk and dairy goods. The milk is scheduled to be processed at the factories early in the morning and is delivered to the agencies and retail stores as early as possible to help keep the milk as fresh as possible. There are only few domestic companies that establish such a system for production, delivery, forwarding, and consumption in a same day. In this regards, Seoul Milk is the prominent company among dairy goods companies.

Seoul Milk completed establishing the vehicle control system in 2010 to build the perfect Transportation Management System. Through this system, we can find out and monitor carbon footprint to take the initiative in reducing it. Seoul Milk expects to contribute largely to Green IT Management and it will follow the Traffic Safety Act which are established and enforced to equip the digital running recorder in 2013.

Seoul Milk's system organization map

<Source : Seoul Milk Co., Ltd.>
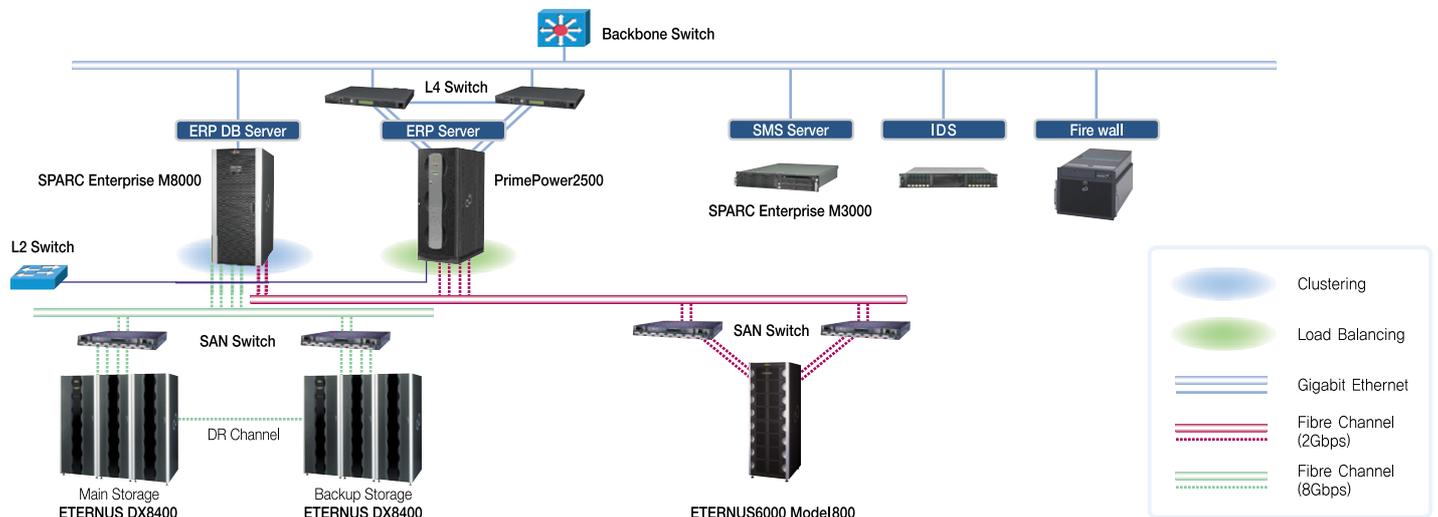
CUSTOMER INTERVIEW

"Eliminating system overload and improving user satisfaction"
Cheol-Soo Park, Management Information System Dept Director Manager, Seoul Milk

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Q. What is the most remarkable change since Seoul Milk introduced Fujitsu storage and server?

A.

We, Seoul Milk usually takes 50,000~60,000 orders per day and its system had been overloaded every afternoon to take care of these orders. To handle the large orders, other tasks were delayed and it caused users' inconvenience. However, Seoul Milk handles organically all businesses through ERP and stores the data. Increasing the storage and server reduces the time to handle the orders from 45~50 minutes to just 10 minutes. According to the practical users, their satisfaction has been remarkably improved after the introduction of the system.

Q. What is your main reason to select Fujitsu?

A.

We, Seoul Milk has used Fujitsu products for 25 years. In 2003, Seoul Milk adopted ERP downsizing the mainframe environment with UNIX and introduced Fujitsu's storage and server in larger numbers. We milk cows on farms all the year round. Milk is gathered at tanks and processed at factories for sale so stable operation system is very important. There has been no system error since we changed the system into Fujitsu's storage and server in 2003. For ERP upgrade, we considered other companies' storage or server but finally selected Fujitsu since we gave high credit to its stability and prompt response.

Q. I heard that Colombian dairy group 'Alpina' was deeply impressed with Fujitsu' IT. What is the most highly praised by Alpina?

A.

Alpina that sells dairy goods to several countries in South America introduced ERP and visited Seoul Milk to refer to our best practice. They wanted to know how we can handle numerous data within a short time through ERP and to check Seoul Milk's processes that are online ordering-delivery-selling and controlling the freshness of dairy goods through operating ERP together with TMS to provide the best products for the consumer. Then, they visited our agencies at first hand and listened the explanation of the IT system in detail. Alpina inquired the additional questions by e-mail 2 months after their visit, so we made a reply.

Q. What is your IT Project plan from now on?

A.

To provide the freshest dairy goods, we(Seoul Milk)plan to establish Point of Product (POP) system and Manufacturing Execution System(MES) and then, operate them together with ERP. It will be started from the second half of 2010 and we intend to operate these systems within this year. Furthermore, after introduction of ERP in 2003, we converted customer management from Client/Server environment to Web and entrusted its operation with the outsourcing company but from 2009, we has run it by ourselves. Now, we are aiming to enhance the customer management system as marketing strategies.