



## CLIENT/SERVER SYSTEM

### 2005 COMPUTERWORLD HONORS CASE STUDY

#### FINANCE, INSURANCE & REAL ESTATE

A KOREAN SECURITIES FIRM MIGRATES ITS LEDGER SYSTEMS FROM THIRD-PARTY MANAGED MAINFRAME SYSTEMS TO A NEW, INTERNAL CLIENT SERVER BASED ARCHITECTURE, CREATING GREATER CUSTOMER SATISFACTION AND BENEFIT. [20055379]

*A Search for New Services*



#### SUMMARY

Prior to the introduction of Client/Server environment in the securities market, we and most other Korean securities companies had our ledger systems on IBM mainframe systems and managed by external agencies. Having a third-party manage the ledger, we couldn't respond positively with rapid changes to the IT infrastructure or to cyber customer needs. So we built new ledger transfer system based on Client Server and replication technology. In building the new ledger system based on Client Server architecture, we could support new customer-centric services and get various benefits such as total customer management and innovations in business processes. After building our system, customers have received more benefits and satisfaction from our rapid Client Server system. It has caused other securities companies to move their systems to a Client Server environment. Based on our Client Server system, we and other companies are now extending our systems to internet trading system.

Robert Carrigan,  
Chairman of the Chairmen's Committee

Ron Milton,  
Vice-Chairman of the Chairmen's Committee

Dan Morrow,  
Chief Historian

#### APPLICATION

The goal of this project was to remove the inefficiency and rigidity caused by third-party mainframe ledger management and to build a customer-focused information system. The most important thing in our downsizing project was to distribute the transaction overload at specific times. To achieve this goal, we adopted Client Server architecture based on a distributed computing environment.

The benefits of this project are:

- In customer services - Our customers can do all transactions for services and financial products through just one bankbook. We don't need ledger transfers between their branch offices since transactions for all operations are online. We also didn't need to reissue a card and bankbook to customers. So transaction time has rapidly and dramatically improved.
- For employees - We can give total account service to customers for our services and financial products by the integration of diverse customer account information. Also we have reduced transaction error by 85% because the old complex process was simplified and the new accounting process is automatic. Closing time has been drastically shortened by management of real-time cash on hand by tellers.
- In management efficiency. Our process enhancement has increased productivity and customer services; strengthened our internal control system and on-line pre-approval for important issues; and improved our competitive position.

#### BENEFITS

- Has your project helped those it was designed to help?

We achieved more than we expected. For example, at a number of branch offices, the number of accounts and daily transactions, doubled after this project. And it was due to the success of the project's customer-centric information system.

- In your opinion, how has it affected them?

Prior to moving our transfer ledger system from mainframe to Unix, we couldn't give various services for our customers. But we now support various and meaningful services to our customers such as providing all transactions through one bankbook.

- What new advantage or opportunity does your project provide to people?

Our system has provided new functionality to customers, employees and other people. And we have increased our ability to respond to customer needs and requirements with agility.

- Has your project fundamentally changed how tasks are performed?

It has changed all our business processes and brought various changes such as error-free transactions, simplification of complicated business processes, online pre-approval system by a manager of

department for important business issues, etc.

- How might that change unfold?

It has also brought a more complex customer asset management and we have made new financial products and services for our strategic customers. The enhancement of system quality and performance has increased customer satisfaction and employee motivation for company.

- Does your work define new challenges for society? If so, please describe what you believe they may be.

Our new model for securities gave impetus to another companies to adopt an online transaction system which presented new technical architecture model, innovation of business process, infrastructure for internet business environment.

## **IMPORTANCE**

- How did information technology contribute to this project?

We implemented the distributed computing environment for transaction processing through the Client Server architecture and the replication technology before other competitive companies.

- Why was information technology particularly important to it?

We can respond to our customer requirements within a specific time. That is, the replication technology we adopted was very important and core of our new system. It enables us to process a multitude of complicated transactions for specific time so we get rapid response time and stability.

- In your opinion, have you developed a technology that may lead to new ways of communicating or processing information?

For the first time being, we introduced the Client Server architecture and distributed computing environment in securities market.

- Describe any new technologies used and/or cite innovate uses of existing technology. For example, did you find new ways to use existing technology to create new benefits for society? Or, did you define a problem and develop new technology to solve it?

Before we adopted the replication technology, the industry implemented it as the backup function only. But we used it as one of functions of distributed computing. After that, many companies have adopted it as core technology to build their Client Server architectures.

## **ORIGINALITY**

- What are the exceptional aspects of your project?

As we moved the ledger transfer system from mainframe to the Client Server in Korea for the first time, we faced some problems such as accuracy of data and transactions, stability of the replication function which we were not experienced with, and issues of using the Unix environment in securities market. Nevertheless, we built the Client Server system for customer satisfaction and to allow innovation of internal process.

- Is it original? How? Is it the first, the only, the best or the most effective application of its kind?

It is the first time this solutions is being used in the securities market.

- How did your project evolve? What is its background?

After review of our system architecture and design by TAS (Technical Architecture Simulation) internal T/F team during 3 months through several BMT, we made the decision to implement. The role of TAS was to define the business requirements. They also verified and tested the technical architecture.

## **SUCCESS**

- Has your project achieved or exceeded its goals?

We had exceeded our goals and targets. Before we built our system, we had as a target two million accounts, 700 million transactions per day, one million orders processed per day, 1.8 million order inquiries per day. We now have 1.8 million accounts, and process 850 million transactions per day, 1.8 million order process and inquiries per day.

- Is it fully operational?

Our client server technology and replication function are now operating through the entire operational business. We will have a plan to extend our system to CRM (Customer Relationship Management) based on Internet environment.

- How many people benefit from it? If possible, include an example of how the project has benefited a specific individual, enterprise or organization. Please include personal quotes from individuals who have directly benefited from your work.

Before we built our system, we ranked as the fifth company in securities market, but we are now the leading company based on our new client server system in Korea. Our mission will be a worldwide investment company.

- How quickly has your targeted audience of users embraced your innovation? Or, how rapidly do you predict they will?

Previously, the government agency of securities let each securities company manage its ledger in its system. So many securities company want to transfer their ledger into their system. Many customers and employees are ready for the new system which will be deliver new services and financial products.

- Describe future plans for the project?

We are now building CRM (Customer Relationship management) system to support customers need. Also we have a plan to build a global trading system and night trading system for 24/7 functionality. It brings more rapid response time to customer requirement, shortens approval time, and provides new services for cyber trading.

## **DIFFICULTY**

- What were the most important obstacles that had to be overcome in order for your work to be successful? Technical problems? Resources? Expertise? Organizational problems?

In Korea, especially in the securities market, there was no reference model and business expert with same concurrent transaction capacity. So during our project, we didn't have any confidence about the performance and capacity of system we wanted to build. It was a biggest and important problem we have faced.

- Often the most innovative projects encounter the greatest resistance when they are originally proposed. If you had to fight for approval and/or funding, it would be useful to include a summary of the objections you faced and how you overcame them.
- Did you encounter any unanticipated challenges?