

Business Strategies of the Financial System Solutions Division

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1. Introduction

After the collapse of the bubble economy, the Japanese financial world now faces a Japanese style Big Bang and financial reform. Individual financial institutions are about to enter the stormy world guided by their own intentions and judgment. Needless to say, in order to survive in such rough situations, it is necessary, based on a global vision, to acquire a high utilization technology for using an open distribution system and a network system.

Financial System Solutions Div. of Electronics & Information Systems Div., Nippon Steel Corp. is now promoting businesses centered on business information and IT, targeting the financial information field involving rapid changes. Nippon Steel Corp. has steadily expanded its business fields centered on information systems. For example, Nippon Steel Corp. has provided, in addition to a market information distribution system, a dealing system for supporting front business work in the capital market field, a middle office system for market risk management or credit risk management, and an ALM system^{*1} for performing unified management ranging from capital markets to commercial banking and even a retail banking system.

Financial system solutions provided by Nippon Steel Corp. have the following characteristics:

- User system neutrality not based on hardware vendor
- Leading edge technology including an open distribution system, an object-oriented system, and so on
- Ability to execute large-scale projects based on team play by experts in various technical fields

A growing variety of customer needs are expected to arise from now on because of an end user oriented system^{*2}. In fact, Nippon Steel Corp. has already provided various solutions for such needs, such as consistent support including consulting, planning, analysis, designing, development, application and maintenance, from full scratch to AP package^{*3} and customization. Nippon Steel Corp. has established firm partnership with the customers.

2. Positioning for Capital Market System in Financial Institution

Financial institutions are largely divided into banking divisions for deposit receiving and lending and trading divisions for money, exchange and credit transactions centered on the capital market.

This accounting system has mainly supported the banking division. As a new basis, however, Nippon Steel Corp. has developed a treasury and security system, providing solutions that include an external connection system, an in-bank common system, and other features (see Fig. 1).

In the case of the accounting system, as is apparent from the multiple-on-line system plans, the main focus was on enhancing the efficiency of businesses for deposits and loans and convenience for end users while maintaining system reliability.

A main product aimed at by the treasury and security system is derivatives (derivative products). Derivative products started to be provided in the US and European countries in the 1970s and have rapidly developed all over the world to become main sources

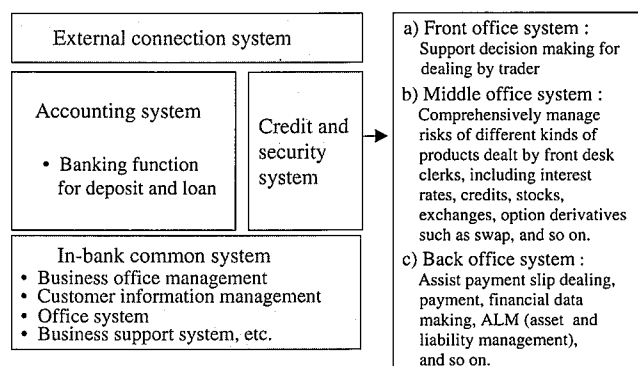


Fig. 1 Financial institution system (bank example)

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^{*1} ALM System: Asset liability management system.

^{*2} End user oriented: System for enabling information system users (end users) to extract, process and input information by themselves according to needs (end-user computing).

^{*3} Full scratch, AP package: While development for constructing new programs corresponds to more detailed items of business needs (scratch development), AP package development uses application packages to shorten the developing period.

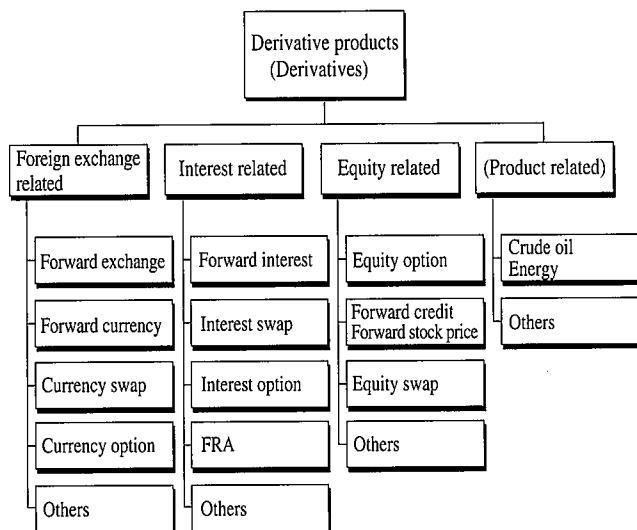


Fig. 2 Derivative product

for wealth of financial institutions. In other words, derivative markets have so expanded in scale that they may be the lifeline of the financial institutions.

Fig. 2 shows a list of derivative products. Basically, these products are results of combining individual financial products such as swaps and options, and are based on statistics and probabilities with consideration paid to futures fluctuations in prices. However, the contents have become extremely complex in terms of pricing, risk measurement and management and understanding of the customers. Following the rapid increase in the market size of derivative transactions, among financial institutions a great increase has occurred in the needs for considering market risk and credit risk as counting yardsticks and counting risk for the entire bank. Apparently, derivatives are products that exist based on both strength and progress of the newest computer systems.

It can thus be understood that "the pursuit of reliability" is essential to the accounting system, which is still a core of mainframes. In the case of the treasury and security system, however, it is necessary to be prepared for the developments of new products and changes in various regulations, so importance should rather be placed on "functional expansion" and "development speed" in

addition to "reliability". Further, "easy integration" for scaling and comprehensive risk management following the increase in the volume of transactions, "mutual operability", "execution speed" according to market needs and "global services" must all be provided.

System technology for dealing with the foregoing characteristics require "open systems", "distribution system" and "object oriented technology". In addition, as the contents of business needs have increased both in level and complexity, various evaluating methods have been developed by using high-level monetary mathematics for evaluating risk measurement.

Key technology for such a risk measuring model is, in some respects, similar to that for a control model of a steel manufacturing process. In the past, mathematicians and control engineers of NASA have moved to the financial field. The same phenomenon has occurred in Nippon Steel Corp., where a number of control engineers who supported and were brought up in the field of steel manufacture have moved to the financial system solutions division. Accordingly, Nippon Steel Corp. has succeeded in building up highly-advanced and leading systems based on the combination of wide ranging business knowledge and leading edge IT technology.

The treasury and security system is functionally divided largely into front, middle and back packages. The roles of these packages differ, but once combined the system provides integral risk management by receiving market information, contract information, and so on. Fig. 3 illustrates a business flow.

3. History of Financial System Solutions Division

The Financial System Solutions Division of Nippon Steel Corp. entered the electronics and information communications field in 1986. Then, in 1990, as part of its computer system business, Nippon Steel Corp. started selling derivative front and middle packages for financial institutions.

After that, in 1991, Nippon Steel Corp. obtained domestic sales rights from Teknekron Software Systems, Inc., of the US to sell its market information distribution system "Teknekron Trading System"⁴. Using the acquisition of sales rights as a stepping stone, Nippon Steel Corp. gradually strengthened its business and technology systems and penetrated deeper into the banking institutions. "Off-balance Risk Management System for Sumitomo Bank", which started operation in 1996, fully employed object-oriented devel-

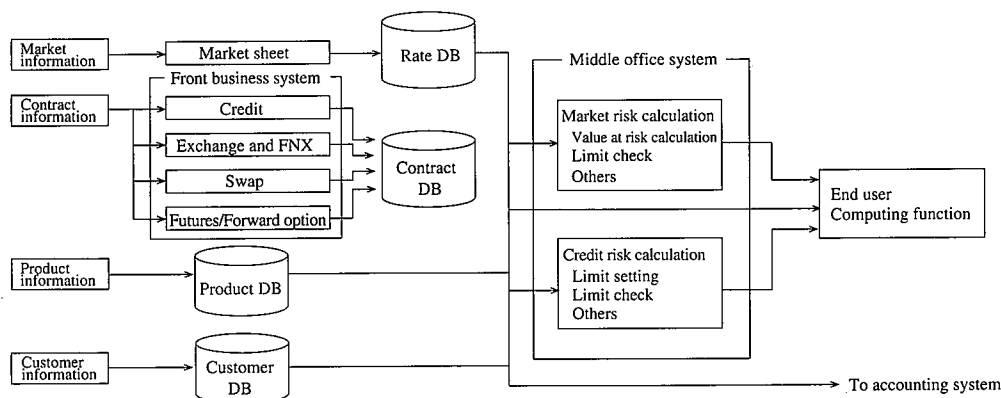


Fig. 3 Information system business flow

⁴ Company name changed to "TIBCO Inc.", and product name changed to "TIBCO Trading System".

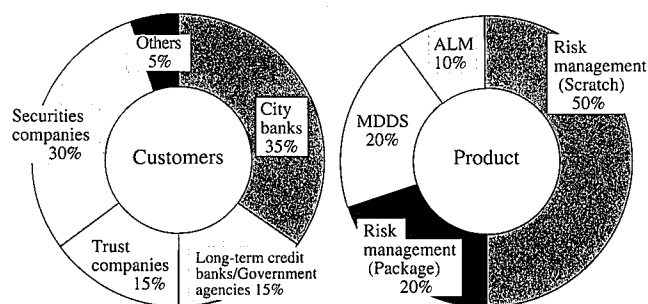


Fig. 4 Breakdown of business fields and products of Nippon Steel Corp. (sales)

opment technology. Reaching nearly 2600 classes^{*5} and 2.5 million steps in size, this system enjoys a reputation of being an unprecedented leading large-scale system in the world.

Nippon Steel Corp. continues to introduce new products and new technology from overseas. For example, in the spring of 1996, the integral trading risk management system "TSSummit" of Summit Systems, Inc., in the US and "Financial Controller/BancWare Convergence" of BancWare, Inc., also of the US were introduced, released and obtained good results.

With assistance from subsidiaries and banking software partners, there are now more than 50 customers, centering on large city banks and security companies (see Fig. 4).

4. Main Solutions for Financial Institutions

Financial institution system solutions provided by Nippon Steel Corp. are largely divided as follows (see Fig. 5). Another report of this issue describes individual solutions in detail.

- (1) Market information distribution system (MDDS: market data distributing system)

Distribution and data processing of market information regarding exchange and stock prices

- (2) Front office system (DSS: dealing support system)

Support for interest, securities and foreign exchange transactions and swap and option dealings

- (3) Middle office system

Support for integration of position management of contacts established as a result of dealings and market, product and customer information management. The system includes market risk man-

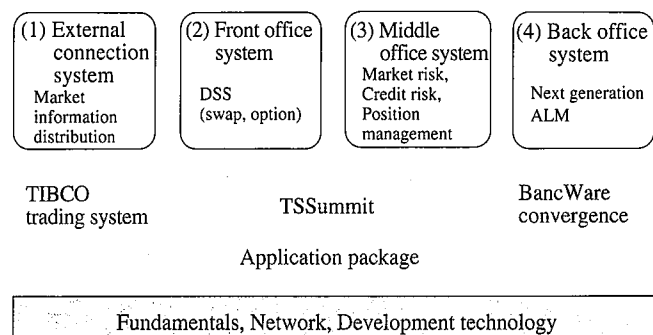


Fig. 5 Financial solutions fields of Nippon Steel Corp.

agement system and a credit risk management system for risk measurement.

(4) Back office system

Execute comprehensive risk management (assets and liabilities management: ALM) for the entire bank by using various bits of information including from the accounting system.

For system construction, scratch development and packaged type development utilizing package tools are available. Scratch development is essential for careful dealing with business needs. In recent years, however, the emphasis has rapidly shifted to the introduction of packages even in the financial system field due to the pursuit of speed and economy. One important cause is the development of various tools and products made for business needs in the US ahead of Japan.

As described above, Nippon Steel Corp. has introduced and released "TIBCO Trading System", "TSSumit" and "BancWare Convergence". For introduction of packages to Japan, so-called "Japanization" or establishment of interfaces with existing systems is essential to suit the packages to Japanese Laws and business models. In other words, system constructing ability must be secured with consideration paid to suitability to business needs and ability.

5. Conclusions

Nippon Steel Corp. has accumulated the abilities for system solution and technological skills during the course of steel production. It now enjoys a great deal of trust from its customers. Nippon Steel Corp. intends to make every effort to provide optimal solutions matching the needs of the time to satisfy customers and meet the challenges to become a leading financial system solutions provider.

^{*5} Class: Collection of objects having the same structure and behavior.