Agriculture Bank of China

INDUSTRY

- Financial Services

KEY BENEFITS

- Provides systematic, comprehensive, standard and accurate card analysis
- Adapts to the changing statistic requirements of the management team, avoiding repetitive system development
- Promotes quick and healthy development of the bank card business

SYBASE TECHNOLOGY

- Adaptive Server® Enterprise
- Sybase IQ

As one of the four largest state-owned commercial banks, Agricultural Bank of China (ABC) is an important component of China's financial system. With its head office in Beijing, ABC boasts extensive outlets across China, covering urban and rural areas, providing strong funds and complete service offerings. This attention to service has won the trust of clients, and has enabled the bank to support rapid growth, becoming one of the biggest banks in China. Listed as one of the World Top 500 companies by Fortune Magazine, Agricultural Bank also maintains a solid reputation worldwide. To compete in China's rapidly expanding economy, financial institutions must have access to the most current and relevant information. Agricultural Bank of China's Cards Analysis system enables the organization to quickly and effectively analyze its credit card activities—so it can provide its customers with the best services possible, while minimizing risk of bad loans.

INTRODUCING THE INNOVATIVE CSAS

Agriculture Bank of China (ABC) created a system that enables it to leverage both a centralized and distributed architecture at two different levels of its business —headquarters and branches. The Card Statistic and Analysis System of Agricultural Bank of China (CSAS) provides an organic combination, servicing the headquarters' centralized management system and autonomous data processing in all branch offices. The main features provided by the system include data processing, data entry generation, report generation, intelligent dispatching, electronic report, data query, assistant collection, multi-dimensional analysis, resource control, etc.

Powered by ASE and Sybase IQ, CSAS processes large volumes of data from ABIS (Agricultural Bank Integrated System) and AIPS (Banking Application Integrated Prepositive System) and implements statistics and analysis against the bank card, balance, deposit, withdrawal, risks, franchisers, point of sales and equipment data to provide comprehensive decision support information for the card management staff.

KEY TECHNIQUES FOR SUCCESS

In addition to industry popular J2EE, ETL (extraction, transformation and load) techniques, CSAS also utilizes the following critical techniques:

- **Primary free key algorithm**
  Modularization and file extraction technology are used to implement the extraction, conversion, pre-cleanup, and build a cross-system extraction platform. Using data encryption techniques (MD5 and BASE64) to generate primary free key resolves the issue of primary entity attribute changes.

- **Data development model**
  Data development model: ABC employs an object-oriented development approach by using the master data to map detailed relationships among data objects and maintain these detailed relationships in an Excel file. The analyzer then generates the program automatically according to the Excel file to achieve simplification and modularization of the development process.

- **Query statement splitting**
  Query statement splitting allows users to apply and manage queries—including the input master, conditional master and extended master elements—in combination with the master data management prototype. Conjunction and disjunction techniques are used within the split segments, and the system assembles each psplit segment to implement dynamic random data queries.

SYBASE®

- **Automatic generation of system architecture according to the organization hierarchy**
  The architecture of CSAS aligns with the ABIS organization hierarchy to manage bank card data, data summary relationships and summary data under one organizational unit. This also allows the bank to establish the relationship between the summary organization unit and entity organization unit, and to distinguish the bank card data and summary data of the entity organization unit itself within the business' organizational structure.

- **Sybase ASE + Sybase IQ solution**
  ASE manages the online transaction data processing while Sybase IQ is used to amass and analyze data. This architecture takes full advantage of the features of ASE and Sybase IQ, and ensures the synchronization of related data between the two databases.

MIGRATING TO SYBASE IQ

ABC turned to Sybase IQ after batch processing speeds were extremely low and not able to meet the business requirements. Sybase and ABC teamed up to migrate to Sybase IQ which increased performance speeds by a factor of hundreds. ABC's background batch processing issues were solved and the company saved large amounts of storage space in the process.

With Sybase IQ in place, all of ABC's business departments are very satisfied with the system. The primary challenge of various data sources pulling from all business systems throughout ABC made it increasingly difficult to unify, clean and integrate all source data until the adoption of Sybase IQ. The ABC teams were able to use Sybase support to develop a custom solution to fit ABC's specific needs.

A NEW SOLUTION — AN IMPROVED COMPANY

Since the system has been deployed across the country, it has promoted quick and healthy development of ABC's bank card business and produced countless significant economic and social benefits. As the efficiency of statistical analysis has improved, the statistician's workload has been reduced dramatically, the need for more employee resources has been reduced and material cost of the bank card business is reduced as well. Most significantly, ABC has increased its revenue and experienced dramatic cost savings.

Additionally, the new system provides 100% accurate data—guaranteed. This enables ABC headquarters and the branch offices to make better, more informed, and timely business decisions. The Sybase-powered system adapts to the changing statistic requirements of the management team, allowing the company to avoid redundant system development. With the advent of reliable and current analytics, ABC now understands its customers usage patterns. The bank can now provide better service to customers by providing more accurate service fees, effectively develop composite views of the customer, and build an outstanding company image for Agricultural Bank of China.

FOUNDATION FOR DEVELOPMENT

As the first management analysis project built on ASE and Sybase IQ, the Card Statistic and Analysis System has important theoretical and practical significance, including:

- **Elevating system potential**
  Prior to its implementation, the ABC team examining the feasibility of the Card Statistic and Analysis System was focused on how to best manage the complementary technologies. Now, with the successful implementation of the system, the analysis can instead focus on how to maximize ASE and Sybase IQ across different operating environments.

- **Implementing and proving the advantage of Sybase IQ database in processing very large volume of data**
  The Sybase system implementation proves the feasibility of batch processing with very large volumes of data using Sybase IQ. Maintaining the complex relationship of basic data entries and mass joins between tables, ABC's large volume, yet relatively poor quality of data, is perfectly handled by Sybase IQ's high performance, columnar storage model and various targeting indexes technologies.

The successful implementation of the Card Statistic and Analysis System lays a solid foundation for ABC's basic data platform development in terms of the technology, personnel and management. Specialized techniques coupled with Sybase ASE and Sybase IQ technologies has proven to be a valuable solution for ABC's basic data platform. Data accuracy and performance are assured, and users access reliable, complete, and rapidly-delivered information.

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