Informatica Helps Jiangsu Zijin Rural Commercial Bank Explore the Value of Data.

Building an ODS Data Warehouse for Jiangsu Zijin Rural Commercial Bank

"The Informatica platform significantly simplifies data load, cleansing and transformation. A graphical and process- oriented design enables maintenance personnel to operate quickly and smoothly. Even if the structure of source data changes, this doesn't imply the need to modify a large amount of program code as before, and instead only needs to configure in PowerCenter."

— **Guo Yapeng**, Head of Project Structure
   Technology Information Department
   Jiangsu Zijin Rural Commercial Bank Co., Ltd.

Company and project profiles

Jiangsu Zijin Rural Commercial Bank is among 57 rural commercial banks under the Jiangsu rural credit system. Headquartered in Nanjing, the bank operates nine primary sub-branches, 125 bank outlets and has more than 2,200 employees. Established in 2011, the bank has adhered to the market position of "serving agriculture, rural areas and farmers, small and middle-sized enterprises as well as urban and rural areas". While focusing on the importance of specialization and differentiation, the bank has dedicated itself to enriching its products while enhancing its strength and brand awareness. The bank has not only become a local financial institution with the widest service network in Nanjing, but also has won various provincial and national honors. For example, in the first half of 2013, Jiangsu Zijin Rural Commercial Bank won the title of "Top

10 Competitive Domestic Banks". Just like many small and medium-sized banks, Jiangsu Zijin Rural Commercial Bank noticed the importance of enhancing its competitiveness through effective use of data. However, the bank understands that data itself will not bring business value.

The primary problem is how to activate data and get benefits from it. In 2013, Jiangsu Zijin Rural Commercial Bank built the first ODS data warehouse under Jiangsu rural credit system to integrate the core system hosted on the provincial association system and the peripheral system, and establish a unified data view. Through unified data processing, the bank solved two basic problems: data validity and standardization. This has, in turn, provided strong support for the bank's business development, management organization as well as other personnel in management decision-making and supervisory roles.

Overview:
In order to meet its business development and organizational management needs, Jiangsu Zijin Rural Commercial Bank decided to build a data warehouse that successfully went into production in 2013. This is the first ODS (operational data store) data platform under the Jiangsu rural credit system. It helped Jiangsu Zijin Rural Commercial Bank fully integrate the core system hosted on the provincial association system with the peripheral system and establish a unified data view. Through unified data processing, the bank solved these basic problems: data validity and standardization. This, in turn, has provided strong support for the bank's business development and management organization as well as other personnel in decision-making and supervisory roles.

Challenge: Puzzles caused by data

Jiangsu Zijin Rural Commercial Bank's business growth has increased rapidly and with steady momentum. The bank is also focusing on improving its management organization. However, its technology information department, which is charged with operating the whole bank's system, is troubled by data. Rapid business development has placed continuous and increased demands on its information system and the bank's core and periphery business systems are hosted on the provincial association system, which distributes data to the whole bank. Meanwhile, Jiangsu Zijin Rural Commercial Bank has implemented featured products via the intermediate business platform, including financial management, centralized payment, convenient banking services such as water, power and gas bill payments in various villages, housing provident funds, and personal consumption loans. These different management systems need to frequently import source data and extract related business data. Scattered data, inconsistent data formats and failure to reflect data correlation on a timely basis lead to a significant increase in difficulty and complexity of management system construction. As the bank's data scale increases, it will eventually become unmanageable.

As more and more applications lack macro integration, individual-level databases increase in an unprecedented way, and the data extraction mode and frequency also increase significantly, it is increasingly becoming an intricate process for the bank to access data. The system structure needs to be adjusted to reduce the system burden; otherwise the "cobweb" data problem will become more and more serious. This will bring many problems, such as unreliable results of data analysis, inefficient data processing, and difficulty to transform data into effective information.

Based on this, Jiangsu Zijin Rural Commercial Bank needs to process and sort out the business data into valuable information, and carry out a rapid and comprehensive treatment and analysis of the information. Business information in each line and each period should be able to achieve an organic and orderly connection to ensure high availability of information. Various business systems should be integrated so as to form a unified data view in the whole bank and to support bank management, operations and decision-making through unified data processing and service. In 2013, Jiangsu Zijin Rural Commercial Bank initiated its "data warehouse" project to meet actual needs, such as business analysis, management decision-making and supervision and reporting.

Solution: Unified data platform

Data integration was the bank's first step in building a successful ODS data warehouse. It wasn't easy to uniformly integrate different data sources. As a result, Jiangsu Zijin Rural Commercial Bank needed to address the following challenges which provided some very important lessons:

- **Various data sources:** the bank integrated access of nine data source systems, such as its core system, credit system, online banking system, financial management system and international settlement system (with up to 320 data source interfaces).

- **Difficult maintenance of distributed data:** the bank's provincial association distributed data in three ways: full volume, variable and incremental. Each different mode needed a different method of data processing. If the core structure of distributed data is changed, all of the data import

Business Needs
- Develop support for the bank's management, operations and decision-making processes through unified data processing and services.
- Ensure macro integration in the business system, intricate access to data and address the urgent need for data system structure adjustment.
- Provide a unified data platform and data view to achieve data exchange and sharing throughout the bank.

Challenges
- Reduce significant increases in pressure against the management system that result from a "self-determined" data management mode.
- Reverse scattered data, inconsistent formats and the failure to reflect the relevance and effect of timely and accurate data.
- Replace manual stored procedures that lead to low data extraction efficiency, heavy workload and difficult maintenance.

Product & Solution
- Informatica PowerCenter

Benefits
- Formed a unified data view of the whole bank and maintained data completeness, consistency and standardization.
- Assembled the whole bank's data in a single platform to support data sharing and exchange.
- Standardized the data processing process, improved the efficiency of data standardization, and reduced the workloads of development and maintenance.
- Achieved improved data management and provided a solid foundation for leadership decision-making.

programs needed modification. Manual maintenance workload is huge, and it's often easy to make mistakes without a professional tool to handle it.

- **Preliminary standardization of data storage:** since data is scattered in various business systems and there is no unified development standard among system constructors, there are a lot of inconsistent parameters. Data needs to be cleansed, transformed and standardized before being stored. However, it's a heavy workload to manually load and cleanse data, and very few people can fully master it. In special cases, such as when maintenance personnel take leave or quits, re-handover and maintenance of the system will be even more difficult.

- **Performance requirement for data storage:** currently, 3.5G - 4G of data is required to be stored in less than 20 minutes. But in the process, it has become more and more difficult to realize this requirement through traditional manual writing and storage process or program.

- **Data exchange among a variety of databases:** the bank now has different databases such as DB2, Oracle and MySQL, and data is exchanged between them.

Obviously, relying on manual processing will greatly affect the timeliness and accuracy of data. Therefore, Jiangsu Zijin Rural Commercial Bank decided to build a unified data platform, set clear goals to ensure data quality, unify data standards and achieve unified storage and sharing of business data throughout the bank. It selected the sophisticated data integration tool to replace the manual method and automatically extract and transform business data from different data sources. Then, data is uniformly stored into the ODS data warehouse for convenience of data exchange among application systems at any time after being cleansed, standardized and integrated (which is the only way to achieve high-quality standard data).

Customer benefits: Unified management of business data throughout the bank

Jiangsu Zijin Rural Commercial Bank's unified data platform can perfectly dock with other business systems and seamlessly import core, credit, international settlement, financial management and other business data of the whole bank, thus forming a unified data view of the whole bank and maintaining data completeness, consistency and standardization. This significant improvement in data quality provides support for data sharing and exchange among different departments and business lines of the bank, and lays a foundation for in-depth data analysis and mining in the future. The platform uses data covering internal administration (e.g., performance appraisal and finance), business management (e.g., customer relationship and credit risk), external supervision (various regulatory statements and reports), decision-making support and so on. It's a real platform of data gathering and exchange of the whole bank, which will also benefit the whole bank.

The data platform built on Informatica's products has helped Jiangsu Zijin Rural Commercial Bank establish a standard data processing process, optimize the system structure, ensure a healthier system and improve the efficiency of data loading, cleansing and standardization. ODS tools independently researched and developed by Digital China, the contractor for Jiangsu Zijin Rural Commercial Bank's ODS data warehouse project, works with PowerCenter to shorten the time from data transformation needs to realization. It can directly generate jobs from a demand mapping Excel file and the system error logs are then rendered in Excel in detail so developers can locate any problem at a glance.

Utilization of Informatica's products has also saved the bank operation and maintenance management costs and assumed a large amount of data import development for the bank's developers. According to Guo Yapeng, Head of Project Structure, Technology Information Department, Jiangsu Zijin Rural Commercial Bank, "During manual programming, it took two to three hours to import data each time, but now, all of the tasks can be finished within about half an hour. Developers don't need to keep an eye on the import process. In a timely manner, they only need to fix any error reminder in the Excel sheets. Therefore, they can devote more time to more valuable new program development and data analysis."

Yapeng added that for executives, managing an enterprise is just like flying an airplane. Accurate information feedback and a trustworthy "dashboard" can generate "a feeling that everything is under control", properly grasp the market direction and rapidly make reasonable decisions. For the ODS data warehouse project, Jiangsu Zijin Rural Commercial Bank also introduced a "management cockpit" system. Thus, executives can perform business analysis and risk warning with panoramic, advanced and complete data views to provide more effective support for management decision-making.

Informatica technology: Sophisticated data integration solutions to achieve data integration

After carefully analyzing the construction needs of the data warehouse, Jiangsu Zijin Rural Commercial Bank decided that the data integration solution it wanted must be a sophisticated product and meet several requirements. They included ease of use, availability, compatibility, high scalability and high development efficiency, which are the technical difficulties that need to be fixed during the construction of the data platform. After comprehensive comparison and testing of data integration products from various well-known vendors, Jiangsu Zijin Rural Commercial Bank finally selected Informatica PowerCenter to perform the extraction, transformation, loading and integration of business data of the whole bank.

During trial use of Informatica PowerCenter, Yapeng found that the product provided high concurrency and performance in big data processing and was easy to use. The graphical installation, development and process design enabled maintenance personnel to operate quickly and smoothly. Even if the source data structure changed, this didn't imply the need to modify a large amount of program code as before, only the need to configure in PowerCenter. In addition, Yapeng also appreciated the product's stability, which means the product's performance will not degrade, even after operating for a long time.

Of course, one vitally important reason why Jiangsu Zijin Rural Commercial Bank chose Informatica is that ODS tools independently researched and developed by Digital China can rapidly generate Informatica tasks and greatly reduce the development workload.

As a core data integration engine, Informatica PowerCenter provides extensive cross-platform coverage capacity. It supports a variety of data sources in different formats, and can organically integrate data from different sources, in different formats and with different characteristics and natures. Jiangsu Zijin Rural Commercial Bank's core system environment includes all kinds of main database types and various versions from DB2 and Oracle to MySQL and text files. PowerCenter can sort out, integrate and put together data between different systems to achieve cross-system data acquisition and reduce the complexity of data extraction.

Rapid business development brings exponential data growth, and it will be a heavy and long task to extract, reload and standardize business data from different sources. As the first data warehouse in Jiangsu rural credit market, its demonstrated effects are self-evident. Jiangsu Zijin Rural Commercial Bank continues to identify opportunities and adapt to changes as it plans for the long- term. The bank's process of data value mining has only just begun.