

THE ROLE OF SAP IN CHINA'S INFORMATIONIZATION PROCESS

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ABSTRACT

This paper examines the role of SAP in the informationization process in China. Examples of four companies at different stages of informationization are used to demonstrate the development in the industry. SAP's initiatives in Chinese higher education are also reported.

Keywords: SAP, ERP, China, Informationization

INTRODUCTION

International Data Corporation (IDC) reported that SAP had approximately 6% of the software market share in China in 1996. The number increased to 25% in 1997, and 34.9% in 1998 (2, 3). This trend is a clear indication that SAP is playing an important role in China becoming an information society.

The objective of this paper is to examine the role of SAP in the informationization process in China. Two important constituents in this process are China's leading business enterprises and higher education institutes. We will summarize and report the recent development in these two sectors.

The paper is organized as such that a brief introduction of SAP is presented in the following section. The main services and products provided by SAP in China are then discussed, with examples of four companies that have become leaders in adopting ERP software in China. Current involvement of Chinese universities in SAP's university initiative is summarized, and the paper is concluded with a future outlook of SAP in China.

SAP

In recent years, SAP has become the largest Enterprise Resources Planning (ERP) software provider. Its global sales exceeded 5.1 billion dollars in 1999, and was the third largest software company in the world (2, 6). According to a study conducted in 1997, SAP also generated more than 7 billion dollars' worth of hardware sales, 3 billion in software partnerships and more than 20 billion consulting contracts globally. Companies in more than 110 countries are using SAP in over 20 different industries. 80% of the top Fortune 500 companies are using SAP (2, 3).

SAP's products include core modules in R/3 as well as other modules such as customer relation management (CRM), E-commerce, business intelligence (BI), and supply chain management (SCM). It also provides more than 20 industry-specific solutions, with examples such as

retailing, oil, banking, and manufacturing. While E-business is considered a necessity in today's commerce, SAP has also focused its services as an E-commerce solution provider through mySAP.com (2, 3, 6).

In addition to its products, SAP has also emerged as one of the world's largest consulting and training centers for information technology. It has approximately 450,000 SAP software consultants, 85 training centers, and more than 200 training courses worldwide (2, 6).

THE ADOPTION OF ERP SYSTEMS IN CHINA

General Characteristics of Business Applications Software in China

Before the 90's, the use and development of business applications software in China could be summarized with the following main characteristics:

1. The goal of automation is to replace manual processes with simple and function-specific software at a relatively small scale. Examples are accounting software, inventory management software and human resources management software.
2. The objective is to improve efficiency based on the current practice. The automation process does not involve new management practices or process reengineering.
3. The rigid organizational structure and weak management training in most companies become major obstacles in promoting the concept of ERP.
4. Investment in IT tends to be technology oriented, not business application oriented.

After the 90's, especially after the 21st century, a fundamental change in management concept and process management was observed. Chinese companies realize ERP software does more than just automating the business process, it often incorporates new management concepts and efficient reengineering of the current business processes; therefore, they start to put more emphasis in ERP. Many have included ERP in their immediate agenda. Some of the reasons for this change are summarized below.

1. Advanced management concept and practices were imported by many China-based foreign companies.
2. The Chinese government encourages and endorses rapid advancement to an information society.
3. After China's joining in the WTO, the Chinese enterprises feel the need of becoming more competitive through better management and process design.
4. With the burst of the dotcom economy, many companies feel that ERP is the fundamental tool to manage information, and ERP provides the foundation for future development of CRM, SCM, B2B, and B2C, etc.

There are two types of ERP software providers in China. At the lower end, there are original functional software developers who try to transform their products to include some features of ERP. At the high end, companies such as SAP and Oracle provide a complete ERP product. The main characteristics of the high-end products are their abilities to incorporate advanced management concepts and business re-engineering process in the design and implementation of their products. These products also have better adaptability and flexibility.

SAP in China

SAP started its collaboration with the Chinese government in the 80's. SAP China was established in 1995, SAP Shanghai in 1996, and SAP Southern China in 1998. SAP consulting department was introduced in 1996, which provides consulting services to its users, as well as training and certifying SAP consultants. Currently, SAP Shanghai provides Mandarin services to users globally.

In 1996, the first Chinese version of R/3, 2.2 was introduced to the Chinese market. To meet the needs of the Chinese companies, the Chinese version incorporated local requirements ranging from language, legality to government regulations. For example, unique accounting systems, report form systems, and value added tax systems were developed.

Main services provided by SAP China to its customers are:

1. SAP solution through mySAP.com
This internet-based solution is built around the concept of more effective and efficient customer services. Customer service is a relatively new concept in China due to its past political and economical climate. Modules such as mySAP.com Marketplace, mySAP.com Workplace, CRM, SCM and BI help Chinese companies refocus and reengineer business processes.
2. SAP specific solutions
Based on the demand of its clients, SAP developed more than 20 industry-specific solutions. Examples are automobile, finance, engineering, medical, educational and high tech companies. Four companies in China will be discussed in detail in the latter part of this paper.
3. Human resources solutions
SAP China developed special HR modules to meet the needs in China. Special features include salary, income tax, social insurance, housing accumulation funds, as well as many forms and reports required by the government.
4. Software research and development center
This center was established in 1998. Its mandate is to collaborate with SAP German headquarter in enhancing the functionalities of SAP's core module R/3 to support their Asian customers. Another mandate is to explore opportunities in collaborating with local smaller software developers to extend the functionalities of SAP.

Each of these services has certain impact on the informationization process in China. In the following section, four companies are used to demonstrate the impact.

Sample SAP Implementation in China

There were more than 200 SAP corporate clients in China in 2001. Some of the well-known companies are Shanghai Bell, Faw-Volkswagon, Legend, Changhon Electronics, Shanghai GM. Here we selected four companies to demonstrate the SAP implementation.

1. Shanghai Bell

In 2001, Shanghai Bell ranked 12th among the top 100 electronic and information firms in China. It was praised in the May 2001 issue of Fortune magazine as one of the best foreign-invested companies in China (2, 6).

Originally, Shanghai Bell had the typical functionally isolated information systems. It was decided that the old systems could no longer meet the needs of the new initiatives and development of the company as the market becomes more competitive. In October 1998, Shanghai Bell officially adopted SAP R/3 as its ERP, hoping to improve the efficiency of its management and responsiveness to the market. The first batch of modules implemented included MM (Material Management), SD (Sales and Distribution), PP (Production Planning), PM (Plant Maintenance), FI (Finance), CO (Controlling), and AM (Asset Management). These modules handle the four most important aspects of Shanghai Bell's operations: sales, production, supply and finance. After 14 months, in 1999, Shanghai Bell had successfully implemented SAP R/3, and became one of the earliest adopters of ERP in China.

Several revisions have been made since 1999. Shanghai Bell is experiencing an increased standard of management, more efficient organization structure, lower operating costs, and improved responsiveness to the market. For example, it previously took two and a half months to balance its inventory; with SAP R/3 the time required was reduced to 4-5 hours. The inventory turn-around time has decreased from 240 days before 1998, 180 days in 1999. It is expected the inventory turn-around time will be reduced to 76 days in 2002, which is about one-third of the pre-ERP period (2, 6).

2. Legend

Legend is China's largest IT enterprise. It manufactures and sells personal computers and provides E-Commerce services. Its growth reached 43% from 1994-1998. The speed of growth has put tremendous pressure on the efficiency of its management team, especially its ability to access information on a global basis. With its operation extended internationally, the need for a platform to handle multiple languages and currencies became an urgent issue.

In November 1998, Legend implemented SAP R/3 successfully. In March 2002, it used SAP as a reengineering tool to restructure its current operations into two companies. The restructuring was completed on May 8th of 2002 (2, 6).

Currently, Legend's ERP system has become the center for information and database warehouse. It provides support for strategic planning, as well as the foundation for e-business at Legend.

3. Little Swan

As a publicly-traded company, Little Swan is the biggest company producing washers and dryers in China. Little Swan has more than 20 subsidiaries in China. The geographically scattered companies created a unique problem for Little Swan in terms of assets structure, product structure, and production mode.

In Late 1999, the company implemented SAP R/3 with a main objective to improve customer services. The ERP system was used to improve the processes and management, support communications and information exchange with business partners, and build a strong customer relation management platform for all subsidiaries.

In the first phase of SAP implementation, MM (Material Management) and PP (Production Planning) were developed for the local plant/production level, and SD (Sales and Distribution) and FI (Finance) were implemented at the company headquarter. The benefits of phase one implementation include reduced inventory level, less time required for order processing, decreased collection period for accounts receivable, and increased cash flow.

The company plans to implement financial check, cost control, and capital management modules in the next phase. It also plans to use mySAP.com solution to explore B2B. Currently, Little Swan is developing Internet-based technology to provide new services and products to its customer, hoping to sustain its competitiveness through the use of technology.

4. Konka Group

Konka Group specializes in small appliances manufacturing and sales. Its first phase of SAP R/3 implementation was launched in June 1998. Initial modules developed included fully functioned FI and MM, and partial implementation of PP.

In 1998, Konka achieved real time management in financial management and material management, and experienced its highest production level (45 million units) in the company's history. Another main achievement through the adoption of SAP was the standardization of management and production processes to eliminate irregularities.

SAP and Chinese Higher Education

Chinese higher education institutes, which include colleges and universities, and research institutes have a strong mandate in learning and developing IT management. There are two main objectives of this effort. The first is to prepare a new generation of high-level management with strong IT training. The second objective is to help the industry to move toward better understanding and use of IT (1, 5).

In 1977, SAP introduced its SAPseed program in China. The goal is to use SAP as an educational tool in information systems courses at universities and colleges, and research institutes to help China deliver managerial training.

There are four components in the SAPseed program:

1. SAP China donates a free copy of SAP R/3 software to university participants for educational purpose, and offers free training to faculty members and technical support staff.
2. In cooperation with Chinese universities, SAP China sponsors training centers for research seminars and applications development.
3. SAP China assists universities in developing new courses with SAP content.

4. SAP China encourages computer science and industrial management graduates to join SAP's training programs. They also provide research grants and scholarships to faculty and students.

At present, 7 universities and the Chinese Entrepreneur Association have joined the SAPseed program. For example, Tsinghua University established its ERP lab equipped with donated SAP R/3 software. The School of Economics and Management at Tsinghua used the lab for MIS and operation research courses for both undergraduate and graduate students.

In March 2000, SAP established the Collaborative-business Solution Plan Center in Beijing. This center will work with Tsinghua University and build one of the biggest R&D centers for SAP. The objective is to use mySAP.com as the framework to develop applications that will meet the needs of Asian countries, and to promote informationization in China with a particular focus in E-commerce.

SUMMARY

SAP has played the role of catalyst in China's informationization process. Some of the key points are summarized below (1, 5).

1. SAP does not serve only as an ERP software. It also forces Chinese enterprises to review their management style and practices. By introducing more effective and efficient management methodologies, SAP helps companies improve their performance.
2. Its industry solutions brings industry-specific knowledge to Chinese companies in different industries.
3. The implementation process often implies a thorough process re-engineering effort.
4. The implementation process often improves the communication within an organization.
5. Cooperation between SAP and Chinese higher education enables the teaching and research of ERP, as well as the training of management talents who will become the main force of China's informationization process.

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