The ERP Implementation Research Based on Standardized Management of Tobacco Business Enterprise

Yong JIN*a,*, Si-Rong ZHANG, Zhi-Hua ZHANG, Hai-Long LU
China Tobacco Zhejiang Industrial CO., LTD. Hangzhou, China
aWuxinli56@163.com
*Corresponding author

Keywords: Tobacco, ERP, Business processes, Standardization.

Abstract. With the China's tobacco industry continuous changing and restructuring, tobacco companies are facing a new round of challenges and competition. This paper, take Zhejiang tobacco enterprise resource planning (ERP) system as the background, in the further deepening of enterprise reform, the situation in the tobacco industry required by the Standardization Administration of deepening business Zhejiang tobacco enterprise after consolidation and reorganization in the successful conduct of the overall information technology after planning the project, according to information of the overall blueprint for the next information integration platform to build a premise deployment; the goal is based on the overall information technology planning, designing future Zhejiang tobacco core information platform.

Introduction

Currently, the China Tobacco will take brand-oriented, assets as link, key industrial enterprises to support the reorganization of the joint inter-provincial, and ultimately reaching the corporate and brand purpose of two central objectives. During the reorganization, each tobacco companies must face the same problem, namely, how quickly will integrate new businesses and existing businesses, thereby to get maximum benefit under minimal investment [1].

Through ERP business operations management based on standardized, it can enable enterprises to obtain the following benefits:

(1) From top to bottom, the enterprises can have a unified standard, unified thought and action; it can improve product quality and work efficiency, reduce waste of resources; help improve the quality of service, establish corporate image; and for enterprises to establish efficient coordinated management order, business systems division of labor to achieve organic unity, work together to achieve business goals.

(2) ERP- business enterprise operation and management based on standardization can be integrated into the corporate culture and other rules and regulations to standardize the business processes.

(3) ERP enterprise operations management based on standardized business will achieve enterprise management transparency.

Smooth supply chain is the only part to ensure a smooth production, as long as it has to sell as a leader of the business model, it must be the product quality and service in an important position, so standardized business processes is to achieve a modern enterprise management a necessary condition.
Key Technologies

The implementation of ERP project involving all aspects of the company's business. In the project implementation process, in addition to meet the general business needs, but in order to better meet the actual business operations, ERP systems play a supporting role to a greater extent from core business as an information platform, were eager for the critical needs addressed the focus is on design, and achieved good effect[2].

Construct the Company's Core Information Application Platform

First, according to the actual characteristics of business operations and operational applications facilitate border, design boundary between ERP system and connection system [3]. Secondly, take the National Bureau, the enterprise criteria as standards, combing the data and define rules for standardization. Again, take SOA architecture design principles, norms, flexible define the system data transmission rule and consider future system expansion. Zhejiang Tobacco ERP project through XI technology and PDM systems, marketing platform, MES systems, convergence, with 43 interfaces were implemented 13 systems currently interfaces running smoothly and efficiently support the business operations;

Supply Chain Planning Collaborative Operation

Supply Chain Planning functions can meet the National Council's management requirements of "production by a single organization", which fully embodies the Zhejiang Chinese tobacco the "market-driven, business follow-up" business model[4].

Under the State's overall control of the Council plans to code, by rolling sales plan-driven production, through the master production plan with production scheduling plan to guide the production, through capacity planning guidance material supply, it can meet in a market-driven, reflecting the balance of supply chain needs and to promote fine management at the same time, such as confirmed the planned time series, in order to regulate the sector coordination to provide a technical support [5].

The Comprehensive Budget Management

The Comprehensive budget management is the National Council's important requirement for the tobacco industry, in Zhejiang Chinese tobacco ERP project implementation, it can achieve the company strategy and target-oriented budget system the as the guide comprehensive budget system and on the basis of the integration of financial and business to control and analysis the budget implementation and analysis[6].

Value Chain Management of Tobacco

Tobacco as agricultural products, has always is a key problem for management[7]. In Zhejiang Chinese tobacco ERP project implementation. Mainly from the perspective of financial business integration, business value chain management angle carried on the in-depth analysis, the key is to solve the unity of the caliber of business and financial caliber and satisfy the personalization features of business management at the same time. Using ERP system, we can combined with personalized custom development to form the integration of tobacco purchasing and account process operation and information system approach.
Integration of Finance and Business

China Tobacco Zhejiang Industrial CO., LTD. ERP project implementation, the key to strengthen the financial business process integration, business based data integration and financial rules, as well as business

Accounting and operation integration, form a complete enterprise management information, the auxiliary decision-making. And for the follow-up industry unified financial accounting software, provide necessary data preparation and application basic.

"11th Five-year Plan Change of Technical Renovation" Factory ERP optimization

ERP system with the manufacturing execution system (MES), elevated technology integration of library management system (WMS), on the one hand, supporting and perfect pond factory is high

Effect of the operation ability, can meet the needs of improve business operation and management; On the other hand on the ERP system as the core of integrated information platform. At the same time by turns

Pond project scheme of ERP with MES and other systems integration put forward guideline opinions for Ningbo MES system construction and technical requirements, is conducive to Ningbo cigarette factories

New MES system reform, and make the information technology to "twelfth five-year", technical reserves

The ERP project implementation of the company, in addition to the focus of the program design, and cost accounting scheme, joint processing business processing, spare parts management, tray belt picking booking management, production processing and so on a series of the tobacco industry industry. China Tobacco Zhejiang Industrial CO., LTD. demand business characteristics, these

And the thorough application, the satisfaction of demand will fundamentally promote company informatization level, will better support the business operation and development.

Implementation Plan

In the process of the whole project, solve a lot of business characteristics and the key difficulties with China Tobacco Zhejiang Industrial CO., LTD., and promote the management level of ascension, such as: the comprehensive financial business integration, the whole process of tobacco leaf of value management, work in process inventory management, the innovation design of SAP and golden interface, the whole process of company capitalization investment management, etc., and build the company with the surrounding system integration information platform, information level for subsequent company continued ascension, and laid a solid foundation and experience accumulation. Mainly embodied in the following several aspects:

The Technical Design of Ascension Based on the Business and Management

Integrated Supply Chain Plan. To improve the whole supply chain operation mechanism, construct the system of supply chain planning in the integrated information platform, which will supply coordination ability of ascension. Reference standard supply chain model, and combined with the actual operation of China Tobacco Zhejiang Industrial CO., LTD, under
the perfect supply chain collaborative planning framework to build information platform of integrated supply chain planning system. As shown in Figure 1.

1) Through the production and marketing balance mechanism (SOP) collaborative sales demand, production plan and material supply;

2) On integration platform to realize the unity of the demand plan collection (Including the chapters in prediction, export orders and smoke test, joint processing plan, etc), ready for the program to automatically generate and release (Including the MRP operation, purchasing plan, etc), the department of the production plan (Including cigarette factories split) automatically generated and guiding cigarette factories, production scheduling work;

3) Integrated information platform will offer more abundant practical statements more quickly, and help management and planner in time make the corresponding judgment, to realize the value of collaborative supply chain;

Synergy in the supply chain plan, key points in operation and the overall plan of the time series. In the research, the team found that China Tobacco Zhejiang Industrial CO., LTD. current drive by rolling forecasts three times it is difficult to production organization and material stock, mainly because of early in general is a large amount of transfers. Only through early production combined with the end of last month's cigarette order to satisfy the cigarette transfers in early, on which the rolling forecast the time sequence of three times, it is difficult to ensure the safety of the end of inventory, as well as to the goods the shortest preparation period of 15 days. Concrete are shown in Figure 2 below. (In march of the supply chain plan time series, for example)

![Figure 1. The information platform of integrated supply chain planning system.](image1)

![Figure 2. The current operation of supply chain planning time series.](image2)

![Figure 3. Supply chain planning operation time sequence.](image3)
Suggest a new time series are shown in figure 3 above:
Carried out in accordance with the above 60 days to days of rolling sales forecast, production safety inventory at the end of month and The Times are the basis, and the stock cycle, can guarantee to more than 20 days.

**The Original Tobacco Accounting and Purchasing.** As a strategic material, management of tobacco leaf is the part with the characteristic of the tobacco industry enterprise management. Because tobacco leaves are agricultural and sideline products, the origin, variety, grade, and annual quality total tobacco co., LTD., leaf tobacco purchasing is restricted by many objective factors, so in procurement and leaf process is obtained due to lack of information systems to support making appear inconsistent and difficult to implement intensification of cost accounting.

In China Tobacco Zhejiang Industrial CO., LTD.ERP project implementation process, mainly from the perspective of financial business integration, business value chain management Angle carried on the thorough analysis, the key to solve the unity of the caliber of business and financial caliber and personalized characteristic at the same time satisfy the business management. Using ERP system, combined with personalized custom development, thus forming the integration of leaf tobacco purchasing and accounting treatment process operation and information system. Concrete are shown in figure 4 below:

Figure 4. Integration of leaf tobacco purchasing and accounting handling process operation and information system.
Based on value chain management in ERP system of tobacco leaves, mainly includes "the original smoke handover, the original smoke settlement" and "the original handover, smoke cigarette settlement" two types of business, as well as the original plan, receiving, picking, smoke leaf and financial settlement is obtained. Smoke, then fundamentally support the original physical management at the same time, also meet the requirements of the financial fine calculation, so as to expand the scope of information support for business operations, support the needs of business and management ascension.

**Comprehensive Budget.** Along with the increase of industry management strength, as well as the company's own management intensification of needs, the company's current budget management difficult to satisfy the requirement of company development. With the help of the ERP system function of comprehensive budget, will forecast, planning, plans, reports, and performance appraisal are closely linked, coordinated through the management goal system. Comprehensive budget management including budgeting issued, budget execution, budget control, analysis and contrast analysis of adjustment.

Comprehensive budget management, the implementation of ERP for company business objectives as a starting point, including the operation of the supply chain management budget, financial budget and the budget of the investment, range for all departments and department, China Tobacco Zhejiang Industrial CO.,LTD.18 divisions of the company, 58 departments are involved in the process of budget management, truly reflects the comprehensive budget "participation".

**Financial Business's Operations to Integration.** As the concentration degree of the tobacco industry enterprises in recent years more and more high, the tobacco industrial enterprise is more and more focus on enterprise internal management level, strengthen cost accounting, improve enterprise internal supply chain efficiency in order to improve enterprise competitiveness. It’s an important means that controls the event in the middle (the original is after the event) to improving the efficiency of the financial regulation and internal management level.

The ERP system fully understand the company's business characteristics and management requirements, explore the correspondence of business and financial synergy, according to the strong characteristics of a industry formulate the integration solutions, such as the original tobacco purchase accounting, product cost, etc. Through the ERP system clear and fix process and caliber of financial and business accounting, lay solid foundation for the integration of financial and business operations. Financial business integration technology implementation work, focus on:

1. Business process integration: in the process of financial integration of business process design, clear the business level and the value level of comprehensive requirements in business activities. Such as procurement and the handle link together; The sales link and receivable link together; clear the assort of accounting rules and business link Production and cost accounting together; Move of material keep pace with the change of inventory value, and budget goes on to the requirements and so on. Clear process connection point and the related receipts, further clear the assortment between accounting rules and business link, thus guiding the follow-up technical implementation. The integration of process of financial and business are shown in figure 5 below.

2. Integration of accounting rules: based on the requirement of business and the requirement of accounting rules, further clear and clear financial business integration calculation rules while sorting and confirm the link of process. Such as organization setting in
ERP, the requirements of business operation and financial accounting, decision of the corresponding rules. For example, through the Master data coding region distinguishes the cigarette which is produced by self or associated company, to satisfy the sales link proceed the collection of different subjects. In addition, fixed assets in the financial behavior and business behavior distinction, low-value goods management, correspondence between movement type and expenses course, etc., all these difficulties is solved by looking for financial and business integration and establishing the comparison of subjects and business types.

3. The integration of cost accounting: Compared with the previous, the implementation of the ERP has the biggest change which is the process and method of cost collection. Based on the concept of ERP, the cost of the collection process and method, as shown in the figure below:

As shown above, the focus of the cost accounting methods is using the standard cost method and seeing the order as cost object, marches to the cost of collection. Main features:

1. The standard cost method is adopted. Consist of direct material standard cost, direct labor cost, manufacturing cost standard cost three parts, the form is the product standard cost. The standard cost is beneficial to the cost control, cost reduction measures, the profitability analysis, operational decisions, evaluation target completion and business performance, the analysis of reason, clear responsibility, etc.

2. The material ledger. Because of China's accounting standards, accounting must use the historical cost of inventory method (that is, the actual cost method). If the enterprise by using
planned cost or norm cost in daily accounting shall account the cost on schedule, and adjust planned cost or norm cost into historical cost periodically. The material ledger is based on each material building material card (ledger) way, to keep a record for each material of mobile trading record type, quantity, amount, price, the price level; at the end of the month to calculate the actual cost of materials. In a word, material ledger is a material card management; each material has its own card in ERP. As shown in the figure below:

Figure 6. Service-oriented enterprise integration architecture (SOA).

**Enterprise Integration Architecture for Service Oriented (SOA)**

We should establish a sound scientific and reasonable information architecture in the technical architecture to implement this ERP system. In addition to ensuring the function of ERP itself, it also needs the system integration construction based on information resources standardization design, through the data exchange with other application system, to meet the professional application. In the process of project implementation, Zhejiang tobacco enterprise based on the National Bureau of standardization code, combined with its own standardization and construction of ERP system as the core, the application integration platform for service (SOA).

During the five eleven technical transformation period, the technology architecture achieved the company's ERP and other related systems and transfer plant system convergence flexibly and stably, the new system integration as shown in Figure 6 below:

This technical architecture mainly reflect:

1) Transmission of heterogeneous systems by means of service, rather than direct access to the other side of the database, it improved efficiency and reduced the risk of the technology;

2) Using data bus to improve the expansion of the architecture, data reuse, and maintenance of convenience. Meet the requirements of system integration, integration, security and
openness. The project achieved a total of ERP system with 18 heterogeneous systems, more than 150 interfaces, about 50M/ days of data interaction, the performance is stable and reliable. In addition, through the implementation of the assessment, it can support batch management information system on the line after the new increase of more than 50 interfaces, about 110M/ days of data transmission.

Summary
Through the ERP implementation project, the construction meet and support China Tobacco Zhejiang Industrial CO., LTD. information system of management and business integration needs, strengthening China Tobacco Zhejiang Industrial CO., LTD. in the planning, production, marketing, purchasing, finance, technology and other aspects of unity. Through the construction of ERP, efficient enterprise integrated operation ability, enhance rapid response to market mechanism, support and improve the construction of "four centers"; Through ERP construction, promote data rules of unity, integration, enterprise management, strengthen internal controls, improve work efficiency, promote the enterprise management level, improve enterprise whole collaborative supply chain ability; Through ERP construction, to realize the integration of the system management, support enterprise operation the elaborating management requirements, improving information system of auxiliary enterprise decision-making ability.

References