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EFFECTS OF IMPLEMENTATION OF SAP ON MANAGEMENT ACCOUNTING

Case: Dongfeng Motor Corporation

Business Economics and Tourism

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FOREWORD

When I started my thesis, I have already predicted that I would meet many problems and even disrupt by some accidents. But there is nothing to complain about, everyone should experience it.

I thank all the respondents in my interviews. It's their support that helps me to understand the SAP system deeply and get a clear conclusion about my research.

I am also thankful to my supervisor---Niklas, who instructed me how to carry on writing thesis and guided me how to fulfill personal studying. I am really glad to meet a teacher like him.

Finally, I would like to thank my parents and my friends for their unending support and encouragement. That is why I can work on this interesting topic with passion and hard work.

At Vaasa, 30.04.2013

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Viime aikoina taloudellinen ympäristö on muuttunut merkittävästi sekä sisäisesti että ulkoisesti. Tämä on saanut yritykset ottamaan käyttöönsä eri toimintatapoja mukautuakseen muuttuvaan tilanteeseen. Tarkalleen ottaen kehittyvä teknologia vaikuttaa syvästi kirjanpidon hallintaan esimerkiksi laajentuneella toiminnanohjausjärjestelmien, kuten SAP:n, hyödyntämisellä.

Tämä opinnäytetyö on tutkimus ERP-järjestelmän (Toiminnanohjausjärjestelmä) vaikutuksista laskentatoimeen. Teoreettinen viitekehys sisältää johdatuksen tämän päivän toiminnanohjausjärjestelmään, SAP R/3 ja laskentatoimeen. Tärkeimpänä osuutena on analysointi siitä kuinka ja miten tämä tietojärjestelmä vaikuttaa ja muuttaa laskentatoimea. Mitä muuttuu? Ovatko muutoksen positiivisia vai ei? Mitä pitäisi muuttaa tulosten perusteella? Yhteenvetona pohditaan hyötykö laskentatoimi SAP:n käytöstä.

Empiirinen osuus keskittyy tietokannan sekä laskentatoimen toimeenpanoon yrityksessä nimeltä Dongfeng Motor Corporation. Tämän osuuden tiedot on kerätty itse tarkkailemalla ja tutkimalla yrityksen dokumentteja, sekä työntekijöille suunnatuilla kyselyillä sekä virtuaali haastatteluilla. Tutkijan aikaisemman työharjoittelukokemuksen perusteella kohdeyrityksessä, tutkijalla on kokonaiskuva yrityksen kirjanpitojärjestelmästä. Tämän vuoksi opinnäytetyön viimeinen johtopäätös on tieteellinen ja luotettava.

Tämän opinnäytetyön päähavainto on todistusaineisto, jonka perusteella aikaisempi kirjallisuus on oikeassa väitteessään, jonka mukaan ERP-järjestelmä SAP vaikuttaa laskentatoimeen yrityksissä. Samanaikaisesti opinnäytetyö analysoi yksityiskohtia näistä muutoksista, ja antaa selkeän vastauksen siihen ovatko nämä muutokset hyödyllisiä.

ABSTRACT

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In recent years, the financial environment has been changing dramatically, both internally and externally, which motivates firms to take different actions to adapt to the changing business environment. To be specific, the advanced technologies deeply affect the accounting operations by means of new techniques and the widened utilization of enterprise resource planning systems, such as SAP.

This thesis is a longitudinal case study about the impact of ERP system on management accounting. The theoretical framework consists of the introduction of Enterprises Recourses Planning System, SAP R/3 and management accounting in modern years. The most significant part is to analyze how and by what this advanced information system can influence and change the traditional management accounting. What changes? Are they positive or negative? Which part should be optimized according to the respondents? Then get conclusion about whether SAP is benefit to management accounting or not.

The empirical part concentrates on the implementation of information system and management accounting of a real company-Dongfeng Motor Corporation. The data was gathered for this part by direct observation, documentations, questionnaires and online interviews. Based on the previous long time internships in the target case company, the researcher has a general outline of the whole accounting system and reliable research respondents. Thus the final conclusion of the thesis is scientific and dependable.

The key find in this thesis is an evidence to indicate the previous literature which refers to enterprise resources planning system SAP influences the management accounting in company is correct. Simultaneously, the thesis will analyze the details of these changes and give a clear conclusion about whether these changes are beneficial.

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1 INTRODUCTION

In recent years, the world has entered an age of high speed change both concerning people and objects, and this is visible in business. Companies are facing rapid and extensive changes in the business environment, both internally and externally. To adjust to the new situation, to continue with a smooth operation and remain competitive in the fierce competition, enterprises should or must implement effective measures to improve their capability to satisfy customers and increase their benefits. That's why some advanced technologies are produced and applied in the business organizations.

The significant technological changes had a dramatic impact on accounting in business. The implementation of enterprise resources planning system SAP in the company can change the way to collect, receive and transfer information, and it also improve the decision-making process. The accurate and timely information provided by this software increases the effectiveness of organization and reduces the expense of work, offers more business opportunities for companies. Affected by the changes brought by SAP in the manufacturing and information flows, the role of accountant also changed from traditional business reporter to business analyst.

The theoretical part will mainly introduce the definition of Enterprise Resource Planning system, its developing process, SAP models and special characteristics, management accounting, and the accounting changes in recent year. Finally the relationship between the implementation of the SAP system with accounting changes will be explored. The empirical part will start with a brief introduction of the case company--- Dongfeng Motor Corporation. Research data consists of company structure, the historical development, and the differences before and after the SAP system installment. At the end, an assessment of how this information system works in case company is given.

1.1 Objectives

The purpose of this thesis is to analyze the effects of the implementation of enterprise resource planning system, SAP, in the daily work in management accounting and check whether this information system is workable and effective for the organization. In order to get a detailed and reliable result, the researcher will clearly evaluate the strengths and weaknesses of the SAP system and the changes it brought to the management accounting.

This thesis is conducted as a case study for Dongfeng Motor Corporation, which is one of the Fortune 500 companies in the world. This enterprise is a large comprehensive corporation, controlled by many shareholders, ranging from government, foreign motor companies to individuals. The main products are commercial vehicles, passenger vehicles, engines and other related auto mobile parts. Dongfeng Motor Corporation is one of the 3 giant auto makers in China, which employs approximately more than ten thousand people and opens subsidiaries in most major cities. Obviously, this corporation is a representative of the auto manufacturer in China. Around 2005, Dongfeng Motor Corporation (DFM) implemented the well-known information system, SAP, into the organization. This thesis will present how the SAP system changed the management accounting in case company. Is it beneficial or harmful to the DFM?

1.2 Importance of the Thesis

It is said that the Enterprise Resource Planning system has positive effects on optimizing the functions of an organization's business activities. Under this system, the information flow is improved, the communication and cooperation between different departments are enhanced, and the centralized management of company is also developed. Therefore, the main aim of this thesis is to get a deep view about the impacts of SAP on management accounting. Whether the

implementation of SAP can save money, time and reduce extra work? Whether this investment is worthwhile? Whether it has some drawbacks that should be changed to follow the clients' behavior and favors? These questions are linked to one key issue: does this system increase the companies' operation capacity?

Consequently, this thesis can provide help to those companies that are struggling with the questions should they update their information system and what changes can be expected in the management accounting when companies are installing the SAP system? (Anne 2008, 11)

Many international big organizations have already implemented the SAP system and largely improved their management worldwide. But, only few manufacturing companies have installed it, especially in China. That is why the researcher wants to write this paper, to demonstrate a successful example of the implementation of the SAP system in an automobile company. In addition, in the research, a detailed implementation process and changes after the installment of SAP system will be presented.

1.3 Restrictions

This thesis is written based on a single case company which is grounded on a particular item. It cannot be representative of all the enterprises in the manufacture industry. Thus, only if the internal and external environment is quiet similar will readers follow the conclusion of this thesis, or they are only suggested to learn the analysis process. Because the problem and the solution are bound to a certain context and situation, and the listed case company concentrates on one organization only. It means that only theoretical generalization of the results is possible (Ryan & Scapens & Theobald 1992, 117).

The SAP implementation was carried out at the end of 2005 in the case company. It has been used for 4-5 years. Although respondents and documentaries are reliable, it does not mean all of them are totally correct. The limitation of the number of interviewees and quickly changing business environment will influence the results of this research. A different manufacture process, distribution line or even the accounting activities will lead to totally different results. Therefore, this thesis only covers a part of the manufacturing industry. If the readers want to get more detailed research results, a great number of resources are needed.

2 PREVIOUS STUDIES

The previous studies are divided into three categories, including all the supporting theories of this thesis. The first part cites, the special characteristics and historical development of Enterprise Resource Planning system and SAP. The second part includes the management accounting activities and accounting changes under advanced technology---SAP software. The third and also the most significant part presents the relationship between the information system and the management accounting changes.

2.1 Enterprise Resource Planning (ERP) and SAP R/3 Systems

Enterprise resource planning system is a kind of integrated information transformation system which is widely used in various enterprises. The key technological skill of this software is in the computer controller of all the main processes of a business: from sales order entry to manufacturing to invoicing to collection (Hayen 2007, 3). More than 80% of international companies are organized under this information system. ERP is exhibiting a broad horizon and abundant functions in the whole organization process, on the basis of numbers of data modules. (Eresurce 2013)

At the beginning, companies used different software to monitor the business procedure, and separated the whole business activities into a number of components. For instance: manufacture, logistics, storage and sales etc. This structure led to lost information, waste of time, insensitivity to the market change, and finally lost benefits in the market. For the sake of solving these complex phenomena, becoming competitive in the market and organizing the company in a more effective, simpler way, business people have to use more effective tools in the organization. That is why enterprise resources planning systems appeared.

This newly integrated information system (ERP) can record all the digital data related to the core transaction-processes from purchase of raw material, production of products to final sales. This function saves much time and ensures that the company is capable to receive updated information. For instance: the sales department is able to get the products cost from the materials management module (MM), how many available goods for shipment and when will they arrive to the warehouse. In addition, if there is an increase in expenses of the raw material or shipment, the sales department can also receive the message at the first time and calculate the benefits online in a few minutes without a real sales operation. If all the operations are carried out without this system, the staffs in business must spend several days to accomplish the works mentioned above, not including the rate of mistakes. (Helo 2006)

The enterprise resources planning systems have many versions, among which SAP system is the most popular one. What is the SAP system? The SAP system is a powerful, flexible information system which provides the most detailed and accurate information of business transactions to decision-making. What's more, customers have easily accesses to specific organizational functions by setting up different data modules into the system, without cancelling the original one.

The SAP system, the world's leading business application software was first launched by a German company, in 1992. The original goals of software are to transform the information technology in the world and alter the way companies do business. Only within a decade, the number of companies who installed SAP increased from zero to over 17,500. The upward tendency went on for a long period. Now, the SAP system almost covers every industry, from governments, service organizations to business companies etc. It seems that the whole world is crazing for this technology. An increasing number of new sciences and

technologies still continually added into the system, that is why SAP is a perfect tool. (Hayen 2007)

SAP R/3 system has been widely utilized in most international companies recently. Constituted of numbers of business modules, this information system contains many IT functions, which meet the specific requirements of different organizations. So, both the business processes and customization tools are integrated into the R/3 Enterprise system (Hayen 2007, 5). It successfully guarantees the data consistency throughout company and satisfies the customers' various requirements.

2.2 Management Accounting

Accounting in a technological society has a very important social and economic role to play in decisions about the allocation and manner of use of economic, natural and human resources (Glautier & Underdown 1974, 1). Idealistically, accounting is divided into two parts: financial and management accounting. Management accounting is usually treated as a system that works with historical and estimated data in conducting daily operations, planning short or long term business strategies and offering business solutions.

Management accounting plays a profound role in companies based on its special functions. Employers use unstable figures or information, not only limited to the published financial statement but also include the fluctuation of the stock, to make management decisions. Different organizations adopt different information. Therefore, the more reliable, up-to-date and unique information managers received, the more correct evaluation reports will be made by management accountants. (Kaplan & Robin 1998)

Reeve, James M. & Warren. Carl S. (1993) indicated that the objectives of management accounting can be separated into three components:

- To support inventory valuation for periodic profit reporting.
- To determine the cost of producing products or delivering services.
- To support operational planning and control.

As time goes on, the traditional management accounting used to concentrate on making financial statements, now turns to offer business support to managers. Hence, in order to well organize the management accounting, the cost accounting calls for more concern of managers. How to administer the cost? Which calculation method can companies get the most accurate data? These questions would be extremely difficult for companies to solve in the producing process.

The traditional cost accounting is on the basis of volume-related cost method, such as: direct or indirect materials. Labor was allocated to the products by the volumes consumed in the business process. In this costing method, the overhead cost is divided on the same rate, which means the expenditure of every activity equals to the same rate plus volumes consumed. Of course, this calculation approach is not really scientific, result from the same rate of every activity. Hence, a more advanced costing approach appears: Activity-based Costing Method (ABC). (Reeve et al. 1993)

Generally, this new method is available to provide more sufficient and accurate messages about manufacturing processes than previous costing methods. At the same time, business people are able to acquire abundant information about activities happening in the production and clearly clarify which activity plays the most important role in the business. Therefore, administrators can analyze the cost

of products by comparing the expense of activities and then take effective measures to reduce product cost. (Reeve et al. 1993)

2.3 The Impact of SAP R/3 on Management Accounting

Generally, there are continuing changes taking place in management accounting in this age of development. The factors which influence the management both come from inside and outside the company. Obviously, the internal element is the highest goal of managers---effective management. Every company's final aim is to gain benefits. Only when controllers manage a company effectively, will it be possible to gain more benefits and operate corporation in the long term. To achieve these aims, administrators should put emphasis on improving customers' service and optimizing internal organization. (Glautier et al. 1974)

Similarly, the external factor is the constant market changes. The market is running and changing every second according to various policies, people, and matters. Thus, a business organization should follow the market regulations, get accustomed to them and finally get benefits from them. Nowadays, the IT technology plays an important role in business, for instance: the enterprises resources planning system SAP R/3 benefits the structures of many organizations. It works as an IT tool to consolidate data flows and record business transactions in the organization. (Granlund 1998)

These numerous factors working together affect the management accounting. In this thesis, the external factor: new advanced tool SAP system will be analyzed in details, in order to explore the impacts of the implementation of SAP on management accounting. In Scapens and Jazayeri's paper "ERP systems and management accounting change: opportunities or impacts? A research note" (2003), they cited facts to analyse whether SAP R/3 is a good choice or not for

organizations. So do the researcher in this thesis. In the empirical part, the effects of implementation of SAP on management accounting in the case company- DFM will be expressed as an example.

Scapens, Robert W (2003) said that the SAP system, one of the sophisticated ERP systems, has four dramatic functions on business: integration, standardization, routinization and centralization, which make it possible to change the management accounting and the business decision-making. This IT product facilitated several particular changes: 1. The elimination of routine jobs; 2. Line manager with accounting knowledge; 3. More forward-looking information; 4. A wider role for the management accountings. In the source, Scapens et al. claimed that SAP system is not the driver of these changes, but the characteristics of the SAP system opened up certain opportunities and facilitated changes that happened in the companies. (Scapens et al. 2003, 201)

But the drawbacks are also obvious, such as: 1. Accountants become over-dependent on the computer; 2. The technological developments lead to accounting knowledge decentralization; 3. An increasing number of accounting outsourcing; 4. The large maintenance expenses. (Scapens 2000) In the following chapter, the researcher will give a detailed description of ERP, SAP system and management accounting.

3. ENTERPRISE RESOURCE PLANNING SYSTEM AND SAP

3.1 Enterprise Resource Planning System

Enterprise resource planning (ERP) system plays a dramatic important role in modern business companies. The new techniques in this IT tool help companies to get higher customers' satisfaction and become competitive in the market. According to one study, over 60% of the Fortune 500 companies have implemented ERP system already, aimed at reducing inventories, shortening cycle times, lowering costs, and improving supply-chain management practices (Olson 2004.1).

Why ERP has such a big impact in a company? It is because that this business tool can operate all business activities day-in and day-out. Consisted of numerous data modules, enterprise resource planning systems make it possible to transfer information throughout the company smoothly. This software not only maintains an integrated business information line, decreases the daily work, but also reinforces the information receiving speed. (Helo 2006)

When utilizing an ERP system, the business backbone, different departments such as: purchase department, production department, distribution department, accounting department and sales department are available to receive the consistent, timely and correct information at the same time. Comparing with those programs, which work flexibly and independently for only one department, ERP controls the whole information of a corporation. Much time is saved by receiving information through one input. And manual power is replaced by computers to some extent. In addition, the connection may be semi-automated, which could be export/ import data functionality according to standardized file, database or protocol (Helo 2006, 14-15). These functions strongly outweigh the independence and flexibility.

3.2 ERP Historical Development and Modules

According to Olston, David Louis (2004), enterprise resource planning systems are a kind of information systems that have tremendous impacts on organizational computing. An ERP system offers technological, process efficient, financial, strategic and organizational benefits over disparate and diverse computing systems (Olson 2004, 9). This system is based on event-driven system concepts, which include both financial and non-financial data to facilitate information flows. It consisted of many modules, which can work independently or cooperate with others in the company.

An ERP system was first produced in 1960s. At the beginning, business people were not satisfied with the information receiving frequency and the quality. More detailed and up-to-date data were demanded by the managers. The initially problem for maintaining peak performance of company was: how to monitor inventories changes in the warehouse. However, in that era, people did not have too much automating technologies to achieve these business requirements.

As time went on, material requirements planning (MRP) was designed in 1970s, which fundamentally monitored the demand for raw materials in the master production. MRP is a simple and computationally cumbersome program especially the data gathered in it is limited. Thus, it is essential for managers to take other programs to replace this time-consuming tool. Continually, next software systems manufacturing resources planning (MRP II) followed the routine, was produced in 1980s. The core of this system is to optimize the manufacturing procedure by clear the input materials, output products and other reference costs. (Olston 2004)

The ERP system is a new information system which combines all mentioned programs above with its own special functions. It first appeared at the end of

1980s and the beginning of 1990s with the power of enterprise-wide inter-functional coordination and integration (Hossain & Patrick & Rashid 2002, 4). Based on the technological foundations of the previous computing software, the ERP systems manage the businesses from purchase raw material to final sales. They improve the performance of businesses by consolidating the entire activities of the organization into one system, one interface and accomplish the transformation from complexity to simpleness.

When e-business solution, such as customer relationship management and supply chain management, were added into the applications, the modules doubled or tripled in more modern software. Never stopped, the special requirements in different industries encourage scientists to develop further more functions to fulfil business. According to Olston (2004), currently the widely used modules are: SD (Sales and Distribution), MM (Materials Management), PP (Production Planning), QM (Quality Management), PM (Plant Maintenance), HR (Human Recourses), FI (Financial Accounting), CO (Controlling), AM (Asset Management), PS (Project System), WF (Workflow), IS (Industry Solutions). These modules are not only served as a place to archive data, but also provide methods to gather the timely, up-to-date and accurate information in the organization.

3.3 The Characteristics of ERP

Obviously, the implementation of ERP systems will change the management or decision-making process in the organizations. But it does not mean that these programs can improve the functionalities of all the enterprises overnight. Whether ERP systems can operate well, depend greatly on the matched-degree between firms and systems. Only when the tailoring and configuration process of the systems can work well under the business background, project planning and long

term strategy, will companies save money, time and become sensitive to the business information. ERP systems are more advanced than the former MRP products in providing integration of data used by producing, distribution and financial departments to support cross-departmental and cross-border information sharing. (Hossain et al. 2002)

Here, the strengths and weaknesses of the ERP systems will be clarified by the researcher. After reading the analysis, readers will clearly understand the meaning of these information systems and have a deep scientific point of view on the characteristics of them.

Benefits: 1. *Reliable information access*. Information on business is consistent once it enters into the system. 2. *Avoid data and operations redundancy*. Integrating an information system makes it possible to transfer and store all the digital data in a central database. The data can flow throughout the system on the basis of one manual input. This function avoids operations redundancy successfully. 3. *Delivery and cycle time reduction*. All the data are recorded in one information system, so the data cycle is running smooth without interruption, and then much time is saved. 4. *Cost reduction*. Companies get benefits from former functions and decline the number of employees and the time consumption in the business processes. Therefore, the cost related to them is also reduced. 5. *Easy adaptability* Business organizations can easily adapt to the applications of ERP systems, because they were designed according to the different business requirements. 6. *Improved scalability* 7. *Improved maintenance*. 8. *Global outreach*. Extra functions are added to fulfill the software in an international level, such as: supply chain management and customer relationship management. 9. *E-commerce, E-business*. Since an increasing number of teenagers increasingly shop online, e-commerce is gaining popularity in 21st-century. Benefited from this

online module, companies can well control their virtual business and plan network strategy. (Hossain et al. 2002)

Disadvantages: 1. *Time-consuming*. Although time is reduced in the use of software, staffs spend plenty of time in the implementation process. During the installment, some unique activities and companies' culture should be taken into serious consideration. Much time should be spending in preparing and adjusting to the electronic operations. 2. *Expensive*. The prices of different ERP systems are disparate, based on different situations and function requirements. For instance: The spending on purchasing ERP systems in 1998 was approximately US\$ 17 billion around the world and continue increased in the following years. In addition, the maintenance expense was around US\$21.5 billion in 2000. 3. *Conformity of the modules*. 4. *Vendor dependence*. 5. *Features and complexity*. ERP systems provide too many services, ranging from integration of data, updating of the business information timely to speeding up decision-making process. Hence, staffs should study them carefully before the real operation. 6. *Scalability and global outreach*. This characteristic means that the ERP systems are "never end software". More investments are demanded to expand the usage of them to a large extent. 7. *Extended ERP capability*. More modules are added into ERP systems to improve the quality of these programs to an international level. (Hossain et al. 2002)

Command of information is a necessary prerequisite for a scientific consideration of any subject. This saying is validated in the ERP systems. No matter the pros or cons listed above all demonstrate that the ERP system is a suitable, flexible and advanced information system for corporation. The central database management system (DBMS) can store information or transfer information to different departments throughout the companies, ensuring cost saving and manual work reduction. (Hossain et al. 2002)

3.4 SAP R/3-system's Definition and History

The SAP R/3 appears to be the most successful product among ERP systems right at present. Since widely utilized in various industries, SAP has become an IT leader in business administration system (Kemper & Kossmann & Zeller 1999, 1). Similarly as other application systems, SAP system sets a fundamental central database, guaranteeing that workers can acquire business performance immediately, once the data was input into the system.

SAP R/3 is designed from the personal perspective of enterprises. The key concepts are as follows: one central database for all corporate information; data modules are applied according to the customers' demanding; online system is accessible for the employees in every department etc. All of these functions promote the transparency of information flows in the companies. (Hayen 2007)

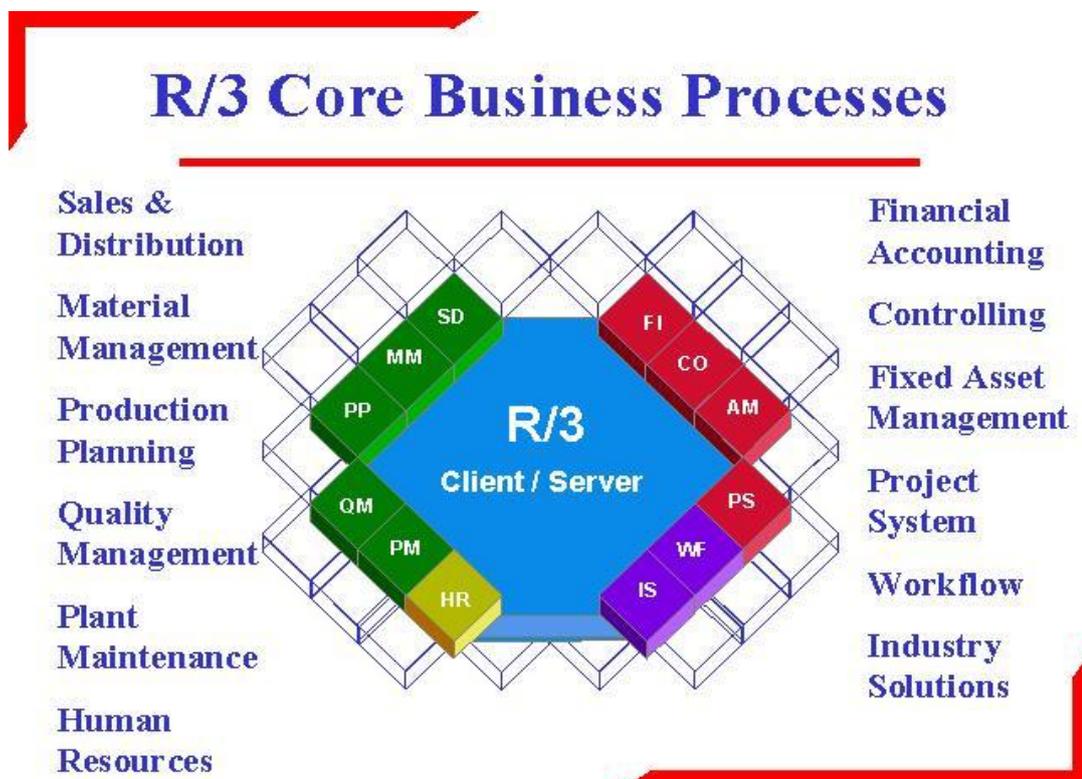


Figure1. Modules of SAP R/3 business process (Helo 2006, 7)

SAP R/3 business process is expressed in figure 1. This model is comprised of many modules, which have different functions for different activities. In the first phase, companies implement the SAP software with these core functionalities. They are Financials and Controlling (FI & CO), Sales & Distribution (SD), Materials Management (MM), and Production Planning (PP). Later, in the second and third phases, companies may introduce other functionalities, such as Controlling (CO), Asset Management (AM), and Human Resource (HR). However, the types of modules and the phasing of installation are decided by the types of industries in which the customers work and the organization's readiness and special business requirement. All the modules are fully integrated and the customers can access messages on all aspect of the organization. (Kogent Learning Solutions Inc. 2010)

SAP was first founded in 1972 by five former IBM employees in Weinheim City, Germany. The original aim of this private partnership firm, System analyse und Programming wicklung, is to produce a standard application for data processing. In fact, when ERP debuted in the market, it soon approved by the customers, generated revenue of DM 620,000 in one year. After one year, the first financial accounting system "RF" was produced, which is the platform for "SAP R/1". At here, "R" stands for real-time information processing. As SAP R/1 programs applied in a number of corporations around the world, System Analysis and Program Development Company was not content with the domestic market anymore. How to operate businesses outside the Germany, become a new challenge for this company. (SAP for Beginning 2013)

Around 1979, intensive examination of SAP R/1 working condition and higher degree of stability give birth to SAP R/2, which brings information system involving in the production and other areas. The new system quickly appreciated by many large multinational European corporations. Compared with previous

product SAP R/1, SAP R/2 system covers more business processes and provides different languages and currencies version to serve its multinational customers. What calls more attention, the reason to introduce SAP R/2 to the firms is to assist mainframe computers and construct a rudiment of integrate information system. From then on, SAP witnesses a rapid growth of technology around the world. (SAP for Beginning 2013)

In 1991, the SAP R/3 was created on the basis of previous products. The emergence of this new software had ushered people in a modern technology age. Not only big corporations appreciate it, thousands of mid-sized companies also start to buy it in quantity. In 1992, following the successful implementation of pilot projects at the customers, SAP R/3 was officially introduced to the market and to leverage it introduced partner strategy allowing independent consulting companies to help their clients install this kind of system. From then on, SAP dominated the business applications market over decades, because of its outstanding management characteristics. (SAP for Beginning 2013)

In 1996, with the new invention---online application, SAP allowed clients to have opportunities to connect online R/3 services. The mySAP.com e-business platform empowers organizations to cooperate with different departments successfully. It also enables companies to gain significant messages more efficiently and productively than in old times.

Also in 1996, the SAP Company started the cooperation with the giant of modern business, the Coca-Cola Corporation. Their collaboration remains still today. Admittedly, SAP has acquired much more benefits in the 2010s, on the basis of flexible modern business operation. Only in 2010, one year, the revenue of SAP was over 12.5 billion Euros, and the workforce is more than 54,000 staffs. Over 60% of the international multinational enterprises have implemented SAP, and numerous middle sized companies are trying to implement the software. But the

historical development can only give a brief view of SAP. The core questions: why SAP R/3 can attract such large groups of customers? What are the benefits and weaknesses of it? These issues will be introduced in the following chapter.

(SAP for Beginning 2013)

3.5 SAP Management Accounting Module

As introduced earlier in this thesis, SAP R/3 has a large number of modules, ranging from Sales& Distribution, Material Management to Financial Accounting etc. In the SAP system, the key module for management accounting is called: Controlling (CO). The purpose of this module is to control internal accounting. It provides organizations a method to analyze data, monitor product costs, and compare the practical digital figures with those in the budget or strategy. From a management accounting perspective, with the help of this module, companies can get a clear evaluation about their profitability and the condition of internal control.

(SAP Library 2013)

Controlling facilitates coordination, monitoring and optimization of all business activities in one company, and offers real-time information to make correct management decisions. The Controlling Module and Financial Accounting Module are totally independent modules in SAP system. The data can flow smoothly between these modules without any obstacles. For this reason, all the data relevant to the cost control can flows automatically to CO from financial accounting module. (SAP Library 2013)

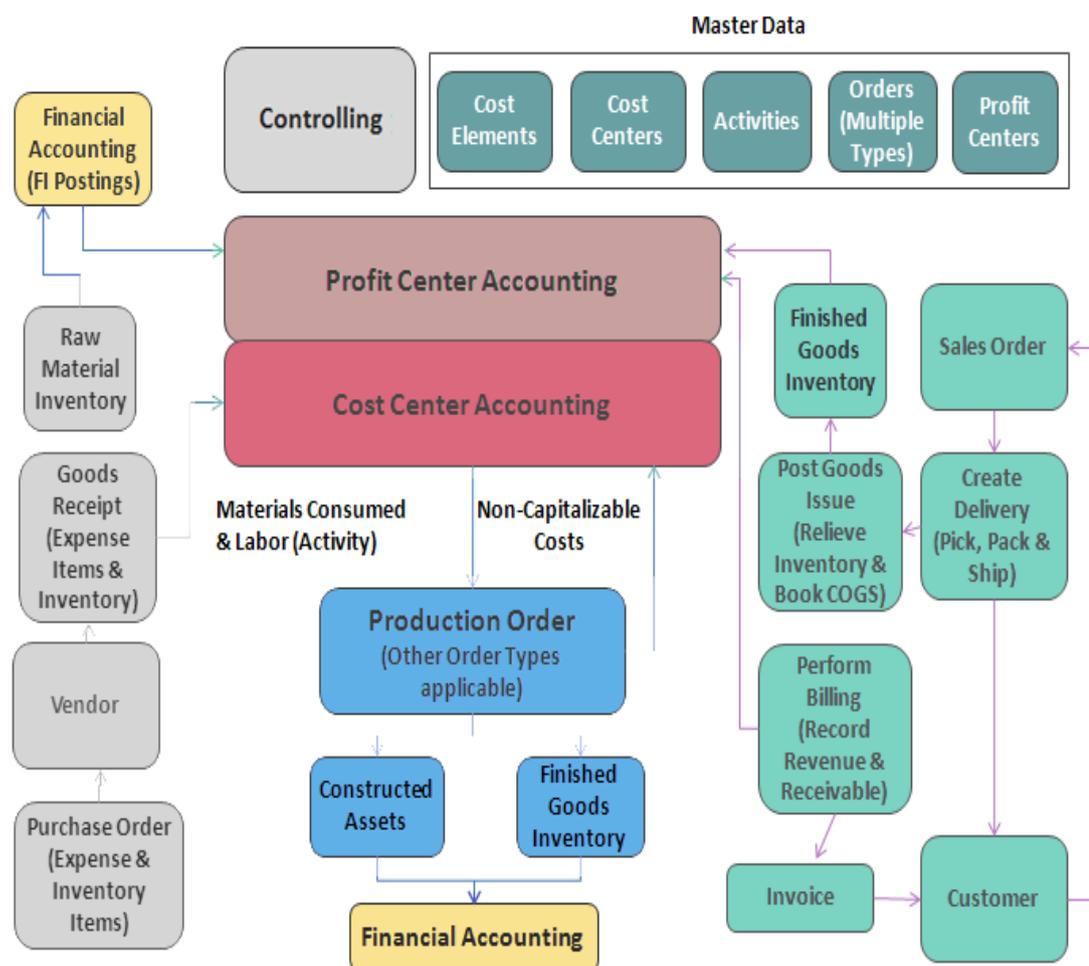


Figure2. SAP Controlling (CO) Module (SAP Knowledge. Transferred. Sustained.2013)

The Controlling Module (CO) component contains many sub-components. As exhibited in Figure 2, there are Cost Element Accounting (CO-OM-CEL), Cost Centre Accounting (CO-OM-CCA), Activity-Based-Accounting (CO-OM-ABC), Internal Orders (CO-OM-OPA), Product Cost Controlling (CO-PC), Profitability Analysis (CO-PA), Profit Centre Accounting (EC-PCA). (SAP Library 2013)

The main job for Cost Element Accounting is to calculate product costs. Cost Centre Accounting gives an overview of the overhead costs and explore in which part they occur. Activity-based Costing method shows the final aim of the whole enterprise and the optimization of business flows are prioritized. Internal Orders

are used to plan, collect and assign the cost of internal tasks. Internal order management can monitor the detailed cost of all aspects of business, and assist decision-making. Next, Product Cost Controlling works as an accountant to record every cost or expenditure spent in the manufacturing process or the provision of services. This sub-component guarantees that managers have capability to count the minimum price to earn benefits. Profitability Analysis allocates the costs or profits of a business into individual market segment. So that, managers can determine the price, select potential customers, and design business strategies on the basis of individual market analysis. Profit Centre Accounting is working on the statistical basis to evaluate revenue and cost in independent departments. Without them, other key figures also displayed in this part, such as cash flows, return on investment etc. for administrators to make decisions. (SAP Library 2013)

On the whole, management accounting is working for controllers. The accountants use important data collected from different business transactions, to analyze business performance, anticipate economic conditions and offer solutions for senior managers.

4 MANAGEMENT ACCOUNTING

The role of management accounting is to utilize data to make right decisions for the development of business. As mentioned in the previous study, the three sub-elements of the management accounting are inventory, cost calculation and business planning or strategy. However, the importance of cost accounting cannot be emphasized too much in the management accounting. To keep the value of inventory, the warehouse keeper should compare the market price with its product price. To count the cost, the staffs should have the conscious of every expense. To set a three or five years' business planning, the operations situation will be researched. Consequently, the cost accounting, formally compose of the fixed cost and variable cost, is the fundament of management accounting. Hence, how to control the cost, how to reduce expense of different activities deserve serious consideration. (Reeve et al. 1993)

Kaplan, Robert S. & Robin Cooper (1998) cited that the primary duties of costing accounting are: control the valuation of inventories and measurement of cost in the business process; give the economic feedback to the administrators. Therefore, in order to gain the accurate cost information, managers should choose the most suitable costing method to calculate the cost of products and other services. The methods are ranging from standardized or standard cost accounting, lean accounting, resource consumption accounting, throughput accounting, life cycle costing, environmental accounting, target costing to activity-based costing. (Kaplan et al. 1998)

Initially, the merchants are able to make wise decisions on the former costing methods, mainly due to the less competition in the market. While, in modern society, there are billions companies working in one field. To have a competitive advantage, a more reliable and accurate cost calculation method is needed. That is why the basic overhead cost measurement cannot satisfy the customers anymore.

An increasing number of potential businessmen have applied activity-based costing (ABC) method in their organizations. (Kaplan et al. 1998)

4.1 Changes in Management Accounting

Compare to the traditional job order costing method, the new approach: activity-based costing (ABC) is more attracting. This advanced counting method identifies the cost of products or services by clarifying the expenditure of different activities in the production. In the following paragraphs, the ABC method will be demonstrated in detail. The advantage of applying this costing method in the calculation is as follows: A more accurate product cost and detailed information will provide to management professionals in the business performance evaluation. (Reeve et al. 1993)

Firstly, workers should identify which activities are involved in the manufacturing procedure. The second step in cost calculation is to allocate costs to various activities, such as: machine usage, fix machine, machine depreciation. This approach is similar as conventional method that traces overhead cost to production departments in the first step. But the cost allocation depends on the consumption of activities, which related to the goods ranging from machine hours, human labor to the factory usage etc. If the factory is operated under the traditional departmental rate approach, the individual labor overhead belongs to product departments, and then divided on the basis of direct labor hours. In this counting way, cost equals to direct labor hours multiply by the unit consumed in the production and the rate is mostly depends on estimated budget information, not the reality. Whereas, in fact, not every product consumes the direct labor cost in equal proportions. (Reeve et al. 1993)

Since the information accuracy is hardly evaluated by the traditional method, the emergence of new sophisticated method activity-based costing quickly won praise among companies. If the cost measurement is under the activity-based costing approach, the product cost will be totally different from the former one. For instance, a factory is producing two kinds of products: product A and product B. In the producing process, product A consumed a large majority of time, labor, machines and quality control inspection. Product B consumed fewer quantities of these activities. If accountants use departmental overhead rates, even though the products consumed different labor hours in producing, but they still allocate the expenditure on the same labor hour rate. In other words, the raw cost of the products cannot be estimated correctly due to the different consumption. Hence, the activity-based costing approach is a more suitable tool for costing control. (Reeve et al. 1993)

There are three improvements of the activity-based costing method in the costing system. To begin with, a number of cost pools used to accumulate overhead cost are increased. The previous cost pool: departments have been replaced by various activities involving in producing process. Secondly, product cost calculation does not rely on overhead cost, but on the business activities, such as: machine hours, labor hours, water and electricity. The classification of activities helps a company to understand the costing performance, and it reflects the importance of activities in the business. For instance: 5 machine hours, 4 times quality inspections, 6 production orders, 2 machines, and 6 material receipts constitute Product M. Activity-based Costing clearly classified the role of every activity in the production. Thirdly, the definition of overhead cost is changed. Formerly indirect cost such as: machine depreciation, inspection, lighting expense were separated from the overhead cost, only treated as one activity in the manufacturing process. But now, those activities are all listed in the cost analysis. And the product cost is a sum of the costs of all activities demanded in the business. Thus, ABC method

proves a more valuable and applicable method for cost accounting. (Reeve et al. 1993)

5. THE EFFECTS OF SAP R/3 ON MANAGEMENT

ACCOUNTING

Contemporarily, the changes of management accounting and control attract many audiences. Most economists point out that the boundaries of accounting are changed due to the lateral process orientation. This standpoint makes us look beyond the traditional accounting theories and explore what change the scale and scope of this system. After a long-time research and lots of discussion, scientists have found out that the ERP systems and IT developments redefine the organizational borders. These two elements worked together to affect the exercise of inter- and intra-organizational control, impact on the management accounting (Granlund 1998, 25).

5.1 The Characteristics of SAP R/3 System

Different users have different feedback, thus the characteristics of SAP R/3 are hard to define into one stable answer. But there is one thing without doubt that SAP R/3 is a representative of enterprises resources planning systems. Scapens et al. (2003) listed that the most outstanding features are:

1. Integration
2. Standardization
3. Routinization
4. Centralization

- Integration

Initially SAP R/3 was only applied in the large corporations. As time went on, a growing number of worldwide middle-sized enterprisers also accepted this software. This fact indicates that the SAP system must have some special features to promote the development of companies in modern society, so that it attracts numerous customers. When talking about “integration” this feather, the previous organization software should be mentioned. About 3 decades ago, the information systems had already appeared on the market. But most of them could only control parts of the business processes, potentially added the complexity to organizational management. (Scapens et al. 2003)

Only the SAP program, which comprises a set of integrated applications modules and covers most network business techniques, creates an integrated information system for the company. Modules are linked together to build an information platform as well as providing opportunities for customers to access comprehensive information of all aspects of the organization. Once the data was input in the software, the consequences of the information process will throughout the system without repetitive work, yield improvements in efficiency gains in site-to-headquarter reporting (Scapens et al. 2003, 203).

- Standardization

It is important to emphasize the necessary of standardization when installing an IT tool in the organization. SAP R/3 realizes the dream of running subsidiaries of one corporation under the same standard in international level. This function promotes customers to follow the same rules one step by one step when dealing with business transactions. Abundant illegal behaviors in the management, such as: 1 business secret thefts, corruption even tax evasion etc. are successfully avoided in the standardized process. Meanwhile, the SAP R/3 system makes international

customers accessible, because of the different languages and currencies options. Nevertheless, the characteristic of standardization cannot satisfy all the users. Not every company suits to be operated under the strict international regulations. For instance: some companies want to concern on special business areas. Some company think local requirements are more essential to them. In that situation, SAP system will block the beneficial effects of effective management, even against companies' strategies. (Scapens et al. 2003)

- **Routinization**

It is accounting that decides the routine of organization. But the installation of SAP R/3 reduced the amount of routine work undertaken by accounting as well as the labor and money for administration, that's why the routinization can be regarded as special feature of SAP system (Scapens et al. 2003, 204). And more specifically, the SAP system modifies the traditional routine of organization, supports companies to adjust to modern business environment quickly. For example: automatic adjustment to the stock records, market information and invoice. All these advantages diminish the necessary of staff within accounting knowledge. Furthermore, the implementation of SAP system encourages the routinization of activities, so that the staffs and SAP system can work more corporately. (Scapens et al. 2003)

- **Centralization**

When discussing centralization, it refers to the centralization of the system design and control. In other words, the structure and format of the system has to be centralized. The information is gathered in one central database and the several activities are centralized in one department. These advantages motivate data collected in one central database, flows around the systems, successfully avoid decentralized administration. Meanwhile, benefited from the centralization control,

the manual labor will also be reduced lying in the less duplicate work. (Scapens et al. 2003)

5.2 Benefits of SAP R/3 on Management Accounting

After the implementation of an IT program in the computer, Scapens et al. (2003) reported that the following changes of management accounting will appear:

- The elimination of routine jobs.

The work previously done by a management accountant, are now undertaken by SAP R/3 system. This is not only because the advanced IT technology can automatically gather data, but also because the software has a strong ability to find out mistakes in the daily work. For instance: if the company has not received invoices, or received the problematic invoices. Once staff input the data into the system, SAP will quickly compare the information with the historical standard records. If they do not match each other, the next step will be stopped. This specialty ensures that the history data in the central database can be easily found and use, at the same time eliminates the possibility of redundancy errors. As a result, the wide usage of SAP program will decline the size of the accounting functions. (Scapens et al. 2003)

- Line manager with accounting knowledge.

SAP R/3 changes the role of ordinary manager. In history, managers had the responsibility for monitoring budgets, explaining variances and producing forecasts. (Scapens et al. 2003. 227) They used to deal with tasks with the help of accountants, such as: when controllers read financial reports, they always consult the place where the digital figures came from. Whereas, nowadays, especially after installing the SAP system in the organization, the data are all accessible in

this program. Managers can get the necessary data and make correct decisions without the accountants. This phenomenon gives a chance to break the barrier between management and accounting, as well as requires the line managers possess enough accounting knowledge to work independently. (Scapens et al. 2003)

- More forward-looking information.

The SAP R/3 facilitates the use of forecasts by storing amount of comparative data. Managers from different classes own different rights to access information in SAP system. Once messages analyzed by low-level managers, the results will transfer to the higher level immediately. Therefore, the big boss-CEO can easily possess the most detailed and reliable information in the shortest amount of time. At the same time, even though the decisions from the front-line personnel are not transferred to the controllers, senior managers still able to monitor the changes of data through click mouse once. Business strategies and business decisions will be quickly made within few hours, rather than days or month through financial reports analysis. (Scapens et al. 2003)

- A wider role for the management accounting.

Typically, the tasks for management accountants are to compare the existing data with the budgets, analyze why there is income or loss and give solutions toward the problems. While, in these decades, the definition of management accountants has changed from “bean counter” or “score-keeper” to “business analyst” or “internal business consultant”. In principle, they are the assistants of managers. To be able to support the managers well understand various business information, management accountants should first familiar with knowledge of accounting, marketing and management, customers’ service and sales etc. Only when the management accountants have a good knowledge of the whole organization, both

financial and non-financial, will they have the possibility to give detailed explanation of every data. Consequently, the role of management accounting changed dramatically, from previous information provider to direct player involved in the management team. (Scapens et al. 2003)

5.3 Weaknesses of SAP R/3 on Management Accounting

The old saying goes: every coin has two sides and so does SAP R/3. Even though, it is welcomed in most multilateral corporations, it still does not mean this information system is 100% perfect. The obvious drawbacks of the implementation of SAP R/3 on management accounting are as follows.

- People become over dependent on the computer.

Scapens et al. (2003) reported that many accounting personnel who are working in providing financial reporting and management information will be displaced by the automatic machines. That means applying SAP R/3 in the organization will end a large number of management accountants' careers. From the company perspective, the fewer personnel the less personal cost, the more potential income. However, from the staffs' perspective, the implementation of this software represents the loss of jobs. That is why when talking about the problems in the SAP R/3 installation, the noncooperation of accountants is a serious one. Workers have no passion to learn and operate IT tool when realized they will be replaced. In generally, how to balance accountants and sophisticated software will be a big issue for managers.

In addition, personnel can reduce much extra repetitive work when undertake daily tasks with SAP R/3 system. It potentially gives workers excuses to over dependent on software. In the old times, the accountants must remember all

significant information by memory and answer any professional questions about the manufacturing process anytime. Nevertheless, nowadays, some accountants treat this skill as a waste of time and energy, due to the available advanced information system. This fact calls administrators' attention to improve the degenerate professional accounting skills in corporation. Let us imagine, if the computers break down or other emergencies incur suddenly, accountants lack the ability to deal with transactions without SAP, will only leading to business disruption. (Scapens et al. 2003)

- The technological developments lead to the decentralization of accounting knowledge.

SAP R/3 encourages management accountants to broaden their horizon, expand their control areas, posing a threat to the centralization of accounting knowledge. In this situation, the accounting knowledge is not only limited to accountants in the enterprise. To be more specific, scientists found that the accounting information is available to be maintained or designed by the ordinary personnel. It is the first-line employees who now have the responsibility of possessing accounting information, rather than the professional accountants. The tasks to monitor cost accounting as well as to undertake related accounting and financial activities are no long only belong to accountants. Most of them are undertaken by other members. Thus there are an increasing number of employees who understand cost, variance and finance reports in the company. (Scapens 2000)

As management accounting knowledge is generally acquired by parts of employees in the modern society. In disparate industries, staffs who are not accountants but possess accounting knowledge can take the place of traditional management accountants. This characteristic can be applied to attract people who have accounting knowledge, and not trained as accountants, can access, analyze and use accounting information without the intervention of an accountant

(Scapens 2000, 21). Those workers, who are not admitted as accountants but have professional accounting skills, will decrease the need of management accountants. For instance: when a manager is educated the broaden knowledge covering every field, also include accounting, he or she can display a very high level knowledge of analysis and management by himself or herself without the help from management accountants. In that case, the accounting knowledge will be decentralized. (Scapens 2000)

- A large amount of accounting outsourcing activities.

As researcher mentioned in the above part, only the multination corporations and middle-size enterprises are available to implement and maintain such expensive systems. But how does the small-size companies living in the market? How can they overcome the weakness---less capital and own a piece of market shares? With limited money, high competitive economic environment, implement the SAP R/3 in small company seems impossible. Hence, the need of information system in small firms promotes the prosperous accounting outsourcing. Small companies outsource the accounting work to those SAP system-holding accounting enterprises. (Scapens 2000)

In pervious perspective, the accounting outsourcing tasks always refer to payroll administration and bookkeeping etc. Whereas, in some business situation, accounting activities such as management reports and auditing are outsourced to the external service providers (so called external “accounting department partners”). Form the appearance, there is a win-win situation. Small companies can obtain the reliable and correct analytical reports with less expense. And the companies taking outsourcing tasks can gain benefits. Whereas, after a deep research and long-term observation, scientists realized that the reduction of administrative costs does not deserve the risk of exposing business strategies and firms’ working condition. (Scapens 2000)

- Large amount of maintenance cost

This system is also criticized, like other enterprises resources planning systems, as its high cost, expensive maintenance expense, and the worse return on investment rate. A company must earn profits to survive. But if it put most money in purchasing and maintaining a system, less capital will be used in investment and product research. So how to control the cost in implementation is another challenge for the company. (Scapens 2000)

Simultaneously, the risk of the implementation of SAP cannot quite be predicted yet, depending on the different business environments. It indeed costs plenty time for customers to accustom to SAP R/3 environment. Thus, the best choice is to implement parts of the SAP for the first time. After employees have gained familiarity with the information system, the remaining implementation process could move forward.

6. CASE STUDY

In this chapter, the researcher will combine the theories, which have been expressed by experts with empirical findings of the case company to see if the previous assumption is correct: SAP R/3 has had a significant impact on management accounting.

6.1 Research Methodology

The research method applied in this study is a case study. The aim of this method is to have an in-depth description of the subjects mentioned in the theoretical parts and gain a profound and comprehensive understanding of the case company. Case study investigates a contemporary phenomenon within its real-life situation when the boundaries between the phenomenon and the situation are not clearly evident (Yin 1994, 13). According to this definition, the researcher can gain more detailed thoughts about the target questions, rather than simply collect and analyze respondents' answers from the paper. When applying a case study in the research, the theories will be analyzed from various perspectives, ensuring that the core thoughts can be understood. The observations from the real-world, plus the experience from the individuals will contribute to more practicable and believable conclusion.

In the study, much evidence relevant to the case company is gathered. For instance: a questionnaire with quantities questions and a few open questions, personal interview, email interview, companies' documents and direct observations. In this thesis, personal interviews, internal documentaries and observations will be used as the main tools to gather messages. To accumulate the specific factual information, only interview of accountants or financial employees is far from enough. The additional interviews of personnel who have duties

related with management accounting should be concluded. For example: product cost accountants, sales assistants etc. Due to the geographic restriction, most interviews are held online or by email. (Yin 1994)

There are some significant problems in this particular survey. For instance: the result of the case study can be affected by a personal view. Different interviewees have different perspectives. Thus the questions: “how to evaluate the respondents’ replies, whether the answers are true or not and whether the respondents are reliable or not” are essential problems in the study. As a consequence, a number of references, such as published reports, documents and direct observations are required to fulfill the task. Since the researcher has months of working experiences in the case company, close observation about the case company is feasible. In addition, the researcher has 4 years’ summer internships, not only in a small company, which still handles accounting tasks on manpower, but also in some comprehensive corporations, which have implemented the SAP software. The researcher’s duties during the internships are related to accounting, both financial and management. Therefore, the researcher has enough experiences to observe employee’s responsible reactions and action in the daily work. All these experiences make it possible to conduct a scientific and reasonable survey. (Yin 1994)

6.2 Presentation of Dongfeng Motor Corporation

Dongfeng Motor Corporation (also called East Wind and Second Automobile Works, the short name is DFM) was founded in 1969. It is one of the 3 giant auto makers in China. The main businesses include passenger vehicles, commercial vehicles, engine, auto parts & components, and other equipments. Due to the military requirement---to protect China from foreign invasion, DFM was initially

located in Shiyan City, Hubei Province. Through 4 decades development, this corporation has been established as a decisive motor enterprise in China, which contains extensive distribution, manufacturing facilities and after-sales network. Contemporarily, DFM unfolds a business display of footed in Hubei while radiating the whole nation. The major business and plants' facilities are located in Shiyan, Xiangfan, Wuhan and Guangzhou Cities. In addition, several branches are placed in Zhengzhou (Henan), Shanghai, Chaoyang (Liaoning), Liuzhou (Guangxi), Yancheng (Jiangsu), Kunming (Yunnan), Nanchong (Sichuan), Urumchi (Xinjiang), Hangzhou (Zhejiang) etc. coving the most main cities in mainland. (DFM website 2013)

DFM is a massive organization, which do not only sell commercial vehicles and passenger vehicles, but also participate in making machine components. This company is a representative of the auto industry in China.

6.2.1 Basic Framework of Dongfeng Motor Corporation

Set a goal to grow stably, DFM has aligned the trend of auto industry development, trying to keep pace with the global changing trend and satisfying potential customers. DFM was a 100% Chinese state-owned automotive manufacturing company, resulted from the special value of enterprise in history. However, around 1985, the reforms allowed DFM to get away from the government control. The autonomy took place-company administrated directed by the senior managers. In 2007, the annual output was approximately 1,137,000 vehicles and the income was about 170 billion RMB, account for 13% market shares. The full-time employees in DFM were about 121,000. (DFM website 2013)

Looking forward to become NO. 1 motor company and contribute to the auto industry, DFM puts more attention to be a player in the business world in 21st

century. It expanded the domestic market through selling trucks, buses, cars and other automobile parts. In the meantime, this automaker set joint ventures with various famous motor companies such as: Nissan and Honda in Japan, Citroen in France, to accelerate the growth of becoming competitive around the world. The shareholders in these joint ventures are DFM, Foreigner Company and individuals, each of these two former big stockholders account approximately 50% shares. Consider most joint ventures are located in China, foreigner companies choose to use designs and high technologies as investments. But for DFM, it takes the responsibility of providing manual labor and assets for corporations. (DFM website 2013)

The appendix 2 expresses the whole framework of this comprehensive organization. As shown in this graph, the number of main subsidiaries is around 40. In most branches, DFM is the biggest shareholder. But, DFM only offers some capital to those “other holding companies”, working as an ordinary stockholder. This means DFM does not have the administrative power for the other holding companies. Thus, in the following content, this survey will most concentrate on the main subsidiaries and analyze the following questions. How SAP influences the main subsidiaries? What changes does SAP bring, especially in management accounting? In order to get a reasonable and reliable investigation result, the whole process of the implementation of SAP will be studied in details.

6.3 SAP Projects in Dongfeng Motor Corporation

6.3.1 Previous Business Environment

Only appropriate management and control guarantee the survival and development of enterprises. Even though DFM is a giant maker in auto industry, there are still many obstacles lying on the front road. To start with, the company

was under the decentralized operation. In this enterprise, financial activities are diverse in 40 subsidiaries and 35 entities: departments and factories. Meanwhile, another profound issue was profit centralization. Subsidiaries, factories and reporting departments were pursuing maximize profits of single subsidiary, rather than the whole organization. Beside this, differences regulations were used in those branches when dealing with accounting activities, such as: submit financial reports, conduct accounting procedures and accounting processes. What's more, information could not flow effectively and timely in the system. The fundamentally disparate version of financial software, hardware, database center in branches stopped the possibility to transfer data through corporation without interruption. Therefore, headquarter was confronting many challenges to operate 40 subsidiaries and 35 plants more uniform and to achieve the development of whole business. (Special Report 2006)

When running under the decentralized management, DFM would spend more time in gathering and reporting financial statements. The monthly reports needed 11 to 14 days and yearly statements demanded 2 to 3 months to be published. This ineffective administration resulted in the expenditure increase, information lag behind the practical transactions and managers insensitive to market etc. When subsidiaries and plants were pursuing the personal interest maximization, they would ignore the need of the whole corporation. It could even lead to the events like the insider crimes in enterprise. In 2004, the revenue of Dongfeng Commercial Vehicle Company (DFCV) occupied around 40% of the total income in DFM. Only DFCV obtained such a big earning, other subsidiaries were all influenced and depressed by the internal competition of parts sales. Thus, to avoid this issue, corporation should link subsidiaries together, share profits and set the same target, forming a well-operated organizational structure system with centralized management. (Special Report 2006)

Furthermore, the third problem: different standards for subsidiaries had brought much more potential risks. In this particular case, the majority of departments were running under different software independently. Data could not flow through different interfaces in the system. The professional languages---subjects, systems and interfaces in financial and information technology were not easy to be understood in diverse branches. For instance, the subsidiary DFCV used to operate accounting activities with Jingdie financial software, but the financial work in headquarters of DFM was under the management of Yongyou program. Since the expertise could not keep consistent with the subsidiaries and headquarters, the data analysis was hard to be developed coordinately. In addition, the real-time and consistent management information and analysis could not be provided to the controllers in the former DFM. Information used to transfer from warehouse keeper, financial accountants, then management accountants, finally to managers. Consequently, much repeated work and manpower was required in such a simply process. (Special Report 2006)

Generally, DFM strongly lacked a standardized operational system, transparent information and high efficiency in their daily activity, when compared with other TOP 500 companies in the world. This fact prevented DFM from competing with other international automobile brands on the same scratch line. Meanwhile, case company, a corporation consisted of 40 subsidiaries and 35 plants, can only gain a place in the market with excellent management tools and skills. That why case company determine to install SAP system and operate business in a standard environment.

6.3.2 Start SAP in Case Company

Facing such business barriers, DFM decided to optimize their business processes by pushing forward SAP system in the organization. The implementation of SAP, this profound IT tool, helps corporation to establish a strong database for information system. The database is working for centralizing all financial information and data into business system and providing all levels of management decision to administrators. So that the standardized business process, reliable and timely messages would be master by the DFM. That is why SAP Project is awarded a high priority to provide company advanced management technology and optimize operation system. The goal of this project is “Operation Enrichment”, which covers centralized finance management, marketing and sales processes, planning and purchasing systems etc. (Special Report 2006)

In the general, Navigator Project should be regarded as an operational improvement, value added project, containing four vital elements: advanced SAP technique, organization, activity process and police & control. Through these four key points, this reform would build a digital infrastructure to support the management decision-making. Thus the standardization of finance and accounting, the accuracy and transparency of management information are realized.

Navigator Project Organization Chart

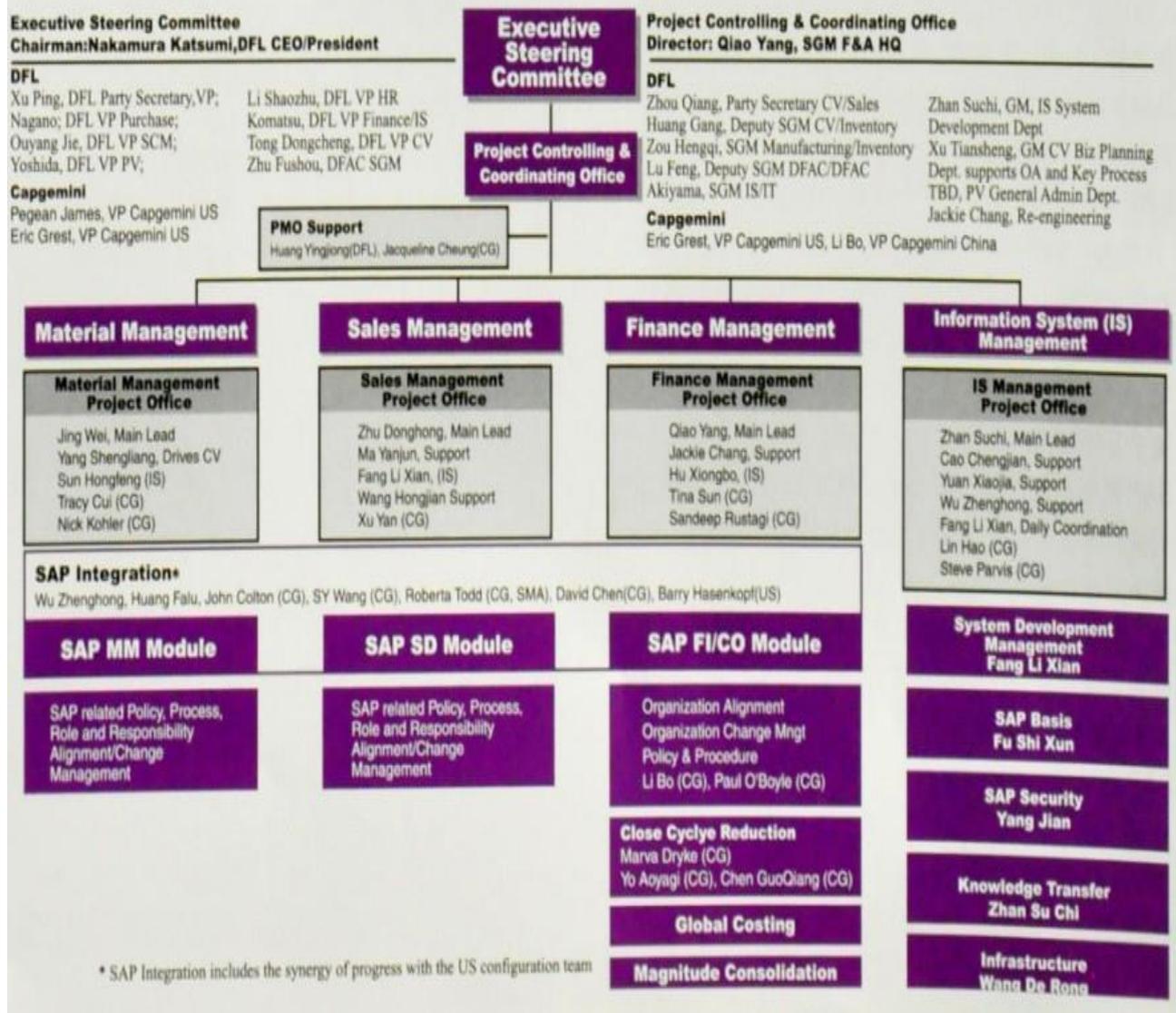


Figure3. Navigator Project organization chart (Special Report 2007)

The Navigator Project applied in DFM was a mega program which required reforms of materials, sales, finance and information system management. According to Figure 3, SAP also set 4 related modules in DFM. They are SAP MM, SD, FI/CO Modules and System Development Management branch. In this thesis, the researcher wants to analysis the effects of implementation of SAP on management accounting. So SAP FI/CO will under serious research. The main

tasks of SAP FI/CO Module are organization alignment, organization change management, policy & procedure optimization, close cycle reduction and control costing and magnitude consolidation.

Based on appearance, the SAP program seems only to focus on finance and accounting, but actually it relates to the overall business departments in every plant and subsidiary. Just as shown in Figure 3, the tasks of the SAP Modules, from MM, SD to FI/CO in DFM have formed a continuous business line. Absence of any modules will generate the failure of good management. As a result, the Navigator Project deserves the whole support from case company. (Special Report 2007)

The supplier of the SAP system for DFM is the well-known consultation company Capgemini, which offers IT, consultation, outsourcing services and management leading-edge techniques to customers. A number of big enterprises, who have already implemented the SAP program, pointed out and emphasized that the implementation of SAP is a big challenge. In DFM, SAP is not only a purchase of financial software and the Navigator Project is not accomplished by just installing this software into the computer. The action of SAP installation created a new pattern of management thought in the case company. The aim of the Navigator Project is to improve internal operation and renovate organization capabilities substantially. The system installation accompanies many reforms, both international management and standard business activities. Top controller has predicted that the management accountants can report more reliable and correct messages after gaining a deep understanding of information in manufacturing, logistics and sales departments in the SAP system. (Interview Wang Bin 2013)

In various business environments, the same project would perform differently when conducted in different companies. In order to make the SAP system more suitable for DFM business condition, managers designed a detailed planning

before the real installation. This planning not only will take the long term business strategy of DFM into consideration, but will also involve adaptable situation testing, potential barriers inspection and the enhancement of employees' abilities. The emphasis on staffs' ability improvement would help DFM to well maintain and develop the system in the future. (Special Report 2006)

The biggest challenge for DFM is the adjustment to changes after the SAP system installation. For instance: data gathering methods, main content of the work, producing process will completely different from the traditional one. Both senior managers and low level workers would face a totally different business environment. Consequently, only when individuals in the corporation really adapt to the changes and enjoy the changes, will this project successfully completed.

6.3.3 The Installation of the Project

As the researcher introduced at the beginning, DFM is a comprehensive corporation. Nissan is one of the biggest shareholders in this corporation. Originally, managers wanted to set up the SAP modules as in Nissan in DFM, for the sake of reputation and advanced technological transformation ascension. Whereas, after long time research, DFM changed some of Nissan's modules into more appropriate ones for its situation. (Special Report 2006)

The Navigator Project started at the end of 2005, which consisted of 100 employees from SAP, SCM and Sales departments. The project was expected to be finished within 2 years. Initially, the first work was to filter information. For example: through three months' hard work, the stock information for MM in DFCV changed from 12000 to 7758 pieces. After deleting 5000 useless data, consultants modified, merged and deleted the left information to reach the national standard. All these tasks were finished and summarized by Information

System Department, Manufacturing Headquarters and other branches. Then, the standard information had been transferred to the individual subsidiary for further comparison and adjustment. In the first phase, the goal of project was to integrate data acquisition subsystem and establish standardized stock information platform for company controllers. (Interview Wang Bin 2013)

Secondly, the framework of finance in the company would be redesigned in the project. Here, there are two frameworks of financial organization in DFM: big F and small f. Theoretically, big F is determined by governments, investment banks and external departments or organizations. It is working for accounting treatment, such as salary, accounting receivable, cost accounting, statements etc. In addition, the published information about accounting policies, procedures and external financial statements is also produced under big F. DFM cannot offer data, which made under the internal calculating method, to public. Thus, the external documents or tasks are followed the legal big F's regulations. In other words, only when accounting treatment is finished in the same financial framework, do global readers understand them easily. (Special Report 2006)

On the contrary, particular accounting operations of a company, such as: monthly finance analysis, finance budget and market analysis are undertaken in the small f. Moreover, the key function of small f is to support business internal decision-making. In DFM, finance planning: goal and strategy, finance analysis: information, cost and achievement analysis, and management statements are processed under the small f. As a result, small f which decided by DFM managers, should be improved for internal administration after the installation of SAP system. (Special Report 2006)

Navigator Project in DFM is not a copy work. It is divided into two levels: operational level and management level. The former one requires accurate, real-time and transparent information, which can easily be satisfied by the

standardized practical work. Meanwhile, the SAP system is good at absorbing and updating new cases and experiences yearly. Therefore, in order to keep the pace with advanced technologies, DFM should follow the international regulations and rules (big F) in operational level. However, in management level, the condition is totally different. Along with the continual expanding business of DFM, small f is changed at a large extent in recent years. The tasks, which should be processed in small f, are becoming more complex and challenging. To form a most suitable small f, special management experiences from DFM and techniques from foreigner companies should be applied. (Special Report 2006)

During the implementation process, DFM has met many problems, which slowed down the speed of the project, a potential threat to the future business activities. What calls for special attention is the decentralized organization. 40 subsidiaries in the organization were working individually, led to the separated management. When the project was first announced to the public, many branches claimed that they had no relationship with it. Thus, how to encourage all staffs to participate in the project, communicate and share information for the final blueprint is another problem. Thirdly, the project consultants were American. Even the translators built bridge between two parties, DFM still confronted amount of culture and communication barriers in the discussion, especially about technological issues. Thus, the project managers should take effective measures to overcome these difficulties. (Interview Wang Bin 2013)

Ideally, modules in SAP can run simultaneously in every field at every organization. And employees in subsidiaries will have good communications under the same standard process. Nevertheless, this does not exist in reality. Without enough capital and time, most companies have no ability to accomplish the project. As a result, it can be stated that the company should install SAP software set by set and give staffs time to adapt, rather than apply it in all the

organization. After the confirmation of one branch can work smoothly, the same implementation can repeat in other branches, finally covering the enterprise. (Interview Wang Bin 2013)

Furthermore, another issue: how to deal with staffs' fears. The fears are not only come from the senior employees, who are afraid of potential risk of the implementation, but also from the junior workers, who are scare of the changes in their routine tasks. Difficulty in leaning new knowledge about computer and dealing with complicated daily tasks keep employers from enjoying the changes. Confronting with such business environment, DFM has provided continual technical seminars of SAP to alleviate workers' fears and encourage them to acquire new knowledge. (Interview Liu Changqing 2013)

According to the Navigator Project, SAP should be applied in business units and subsidiaries throughout the company. That means this broad software will cover every corner in the case company. Personnel in DFM have no choice, but to learn how to well-handle the computer system, how to input, record and quote information through this information system. Even though not everyone like the changes, but the information age decides that you must enjoy the changes in daily life. Like dinosaur, who were colossus in thousands years ago, but still died out for unable to adjust to the changing environment. In order to keep pace with the international automakers, DFM has already started SAP, SPSS and EXCEL courses for internal workers in 2000. (Interview Liu Changqing 2013)

6.4 Changes after the Implementation of SAP

The case company took the "Navigator Project" to set up SAP system in the organization. This project is focusing on the improvement of financial information system" Nerve System" in DFM. In past decades, DFM didn't well utilize the

financial information. Firstly, less quantitative decision-making approaches were used in the business process. Controllers didn't take enough valuable financial information into consideration when they made decisions. Therefore, DFM was insensitive to the financial data. Next, DFM had been operated under the decentralized profits-center management and incoherent finance organization for a long time, led to less effective information system and non-standardized business process. The last but not least one was the different interfaces between departments, such as sales department. It was organized by 3 programs before 2003: CRM, Shunying and Wanneng. Most of them are local software brands. To become a world class organization and capable of quick reaction to the market, competitors and customers, case company demands high-quality digital figures. This evidence has indicated the importance of timely, transparent and accurate information cannot be overemphasized. (Special Report 2006)

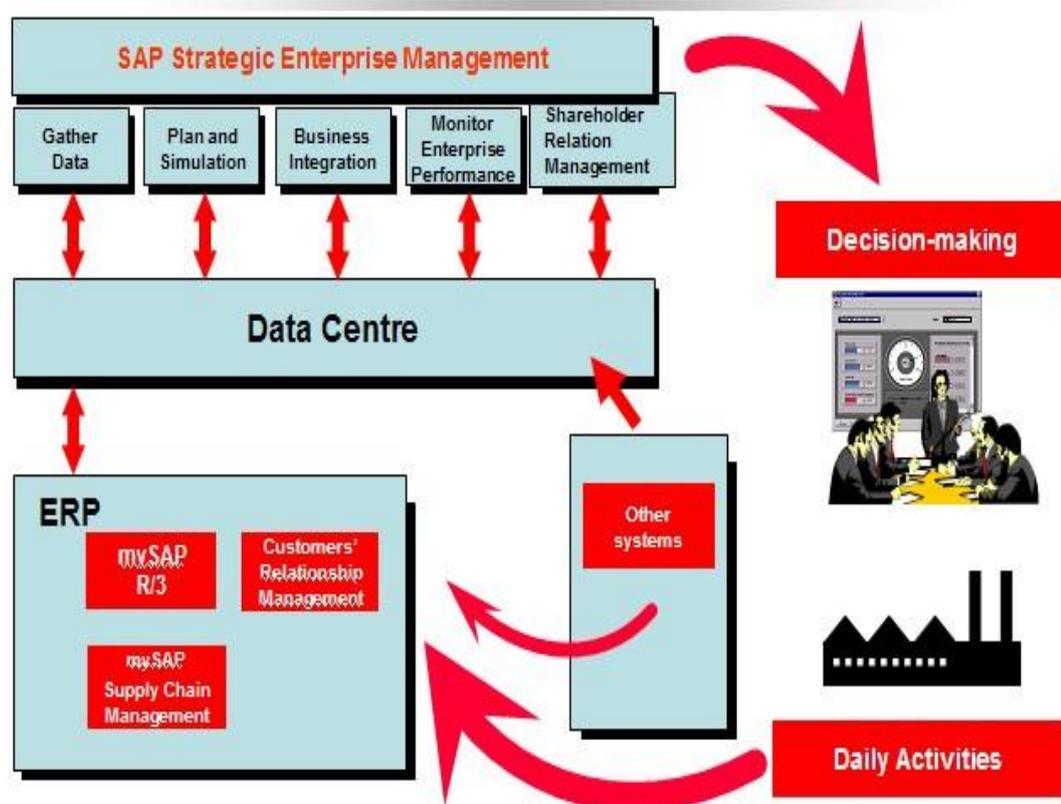


Figure4. Decision-making process (SAP Library)

Figure 4 illustrates the ordinary decision-making process in one company after SAP installation. Employees first gather data in the daily activities and other systems then transfer them into the SAP system. When data is collected in the data center, it will be used in plan and simulation, monitor business performance, shareholder relation management etc. Of course, this figure only states the outline of business process. The real business process with the SAP of DFM will be expressed in the following content.

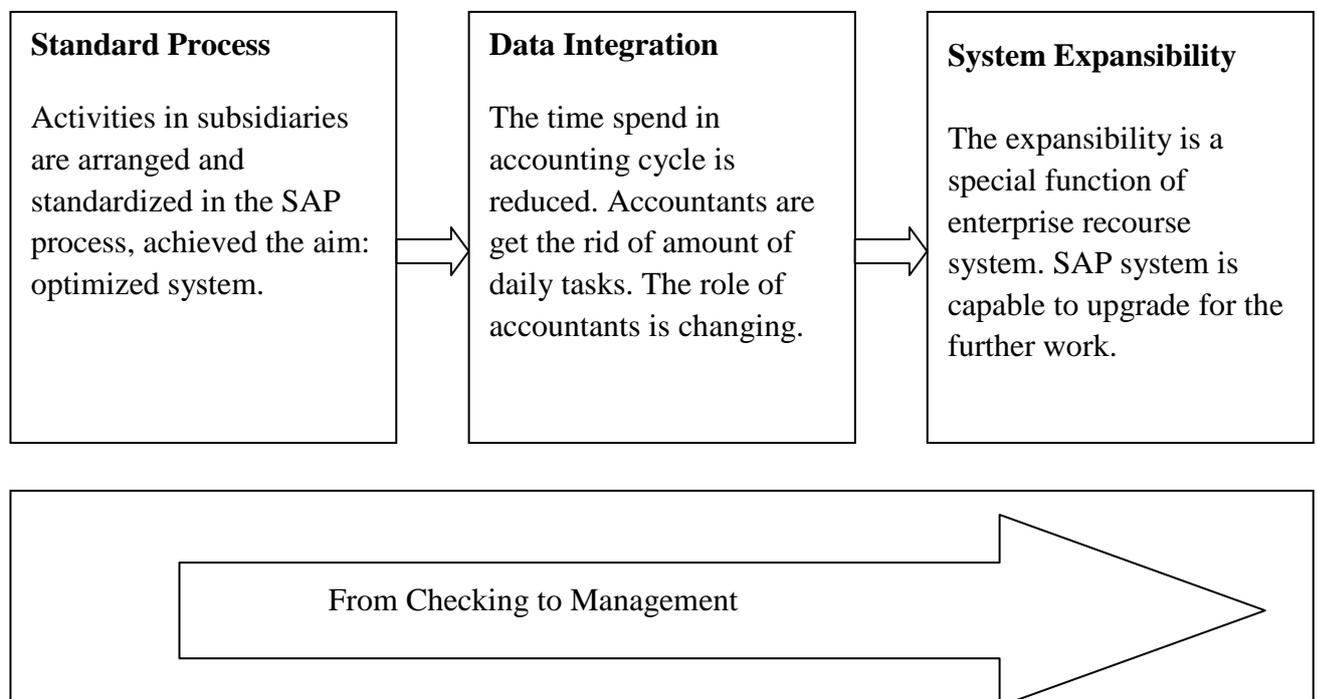


Figure5. Process from checking to management (Special Report 2007)

After pushing forward SAP in DFM, the quality of financial information is highly developed and many issues mentioned above are resolved. Generally, SAP is not simple financial software which only keeps a watchful eye on accounting activities. It is a comprehensive tool, running throughout the producing processes, including SD, MM, PP, CO and FI modules. Recording and Reporting the up-to-

date and accurate information for controllers is the core job. The following graph shows the data transformation system in DFM. (Special Report 2007)

Figure 5 cites the various characteristics of SAP from data checking to management. In DFM, most business activities are standardized with the help of SAP system and much time reduced in closing accounting cycle. What's more, the feature of SAP: expansibility, also expresses in the ongoing project 2³. But all of them only give a round description of changes, so the detailed business circumstance in DFM will be introduced in the following content.

To start with, thanks to the same interfaces between branches, a large number of high quality and accurate information are available in SAP system. The speed of information flows through DFM also increased to a higher level. Accountants could receive yearly inventory report in 5 days rather than 2 weeks. Business activities: purchasing, distributing and sales are recorded in the system and acquirable for handlers. Then, DFM improves the financial services by achieving the aim "3 days for month end closing activities and 5 days to publish yearly statements". SAP system shortens the time consumption in repeated work, remaining more precious time to make decision. The third one is that the work about data acquisition, transmission, report and analysis are allocated to different person, not only the responsibility of accountants. The role of management accountants in DFM has changed from the ordinary business recorder to business analyst. (Special Report 2006)

In conclusion, the manufacturing process of DFM is optimized under the SAP system and the managers can make more appropriate decisions on the basis of high-quality digital figures. To present how SAP optimizes the company, the researcher will give describe the operating conditions of DFM nowadays.

6.4.1 Integration

The main characteristic of this project is integration. At the beginning, DFM had already realized that the headquarters do not have enough capability to control 40 branches and 35 plants at the same time, especially since they were working independently for benefit maximization. For an automobile company, completed vehicles are the final products and automobile parts are belonging to semi-finished products. Only when the subsidiaries co-operate together to sell the completed vehicles, will DFM get the maximum benefit. (Special Report 2006)

From manufacture, transportation to finally completed vehicles sold out, there are great quantities of intermediate products such as: auto-body, components and engine produced in every subsidiary. But it is just because these intermediate goods are saleable that several subsidiaries were paying too much attention to their personal benefits, even offended the corporation interest. As a matter of fact, the completed vehicles are much profitable than the semi-finished products, but the income from them will directly belong to the headquarters, rather than subsidiaries. If DFM monopolizes the market, it would be possible to maximize benefits in this decentralized management. However, currently, the fierce competition ruins the imagination, encourages DFM to manage organization from an overall perspective. All the activities should be carried out focusing on the completed vehicles, rather than semi-finished products. Nowadays, information system SAP links departments together and ties subsidiaries into an integrated platform, guaranteeing the sustaining development of DFM. (Special Report 2006)

At the same time, integration also reflects in the software. Years ago, Jingdie and Yongyou financial software were widely used in the DFM. But since these programs only concentrate on finance, further IT tools were needed for other business activities. For instance: there were four programs working for sales department and 2 systems assisted the storage. Certainly, if a corporation is

running under more than 3 systems, it is impossible to realize the efficient and consistent data transmission. News or information will easily lose or change in the information interfaces. (Special Report 2006)

But on the conditions of SAP system, every branch is working on the integrate platform and modifying data under the administrative control. For example, the salesmen can track the inventories closely and obtain detailed data through SAP at first time when raw materials have been put into the warehouse. In addition, the cost centers are updated every day within few minutes by semi-autonomous machines. This contributes to job simplification, particularly in data analysis and report generation. Previously financial statements were only available at the end of year and mostly explained by management accountants. If there were no descriptive reports added below, managers would require further more supporting documentaries, consumed more resources. But now, the administrators can possess whatever they want in the SAP platform. (Special Report 2006)

6.4.2 Standardization

Another magnificent reform in the process of manufacture is the standard operating mode. Decades ago, in many branches, employees were dealing with activities through random and flexible manual work. But after setting up the Navigator Project, business transactions in different branches are processed in the standardized regulations and rules. Moreover, personnel are cultivated more rigorous working attitude toward their tasks. It looks like that standardized process is a good way to harmonized tasks in the plants and subsidiaries. Strictness, transparency and standard ensure the quality and effective of work. But, the standardization in DFM currently, is still far from the international level. For

the sake of narrowing the gap with those international famous companies, the whole business procedure is obliged to be standardized. (Special Report 2007)

Standardization is not an easy topic. Here, the financial department of DFM will be an example. According to the above content, the finance should separate into two f. The Big F is the external financial framework and small f is the internal one. Since the case company was built in China, the external financial activities would follow the requirements of the Chinese government. But DFM is a corporation comprised of many joint ventures. Thus in SAP system, DFM has set an international QC standard to meet both domestic and international requirements. When talking about the internal financial framework, DFM should respect management theories, follow the previous familiar experience, and retain personal enterprise culture. Absolutely, the abundant experiences will protect case company from repeating the same mistakes. In the new information system, the internal business processes still follows the former model. As a consequence, the standardization is not automatically copied form others. It is a management thought decided by internal situation and external regulations. (Special Report 2007)

6.4.3 Routinization

Routinization is a noticeable change in the case company. All the work is routine work, repeated in months or years, especially accounting tasks. Due to the implementation of SAP, the most manual routine work done by management accountants is undertaken by the information system. For instance: SAP can automatically adapt to the stock records when transactions happens. The new information system prevents and reduces the number of redundant service and duplicated efforts, saving much expense for the organization. In the past, salesmen

and accountants had to make customer master records more than twice by manual power if there was a business. While today, once the customers' information has been put into the system, the related data would be recorded and maintained forever. Using the partner functions, if further businesses (same purchaser) happen, the messages will be directly stored in the database of that customer. (Special Report 2006)

When DFM runs the SAP program, the work of management accountants shifts to others such as: sales, purchasing, or updated data in the controlling directly comes from financial accounting modules. Since the activities earlier undertaken by the management professionals are reduced, sufficient time is left for business analysis. According to the interviews, currently, Navigator Project reduce the amount of time spend in closing yearly accounting from 2 month to 15 days. (Interview Liu Changqing 2013)

6.4.4 Centralization

When applying SAP software in the corporation, DFM should calibrate its previous organization to better adapt to the new environment. The purpose of calibration is to collect advanced international management experiences suiting the structure of organization within SAP. One reflection of calibration is the business activities centralization. And to large extent, these activities are concentrated on the basis of different function. In modern society, most large automobile manufactures have already adopted the centralized financial management model.

Tasks in finance are divided into two parts: the financial accounting and financial analysis. Benefited from the centralization, SAP can fulfill the functions such as centralized monitoring, real-time data processing and data management. Therefore,

the transparency of digital figures and quality of financial analysis will be improved to a high level and the risk of making mistakes in decision-making is surely eliminated. For these reasons, it can be claimed that the calibration-centralization indeed support the revolution of financial organization. (Special Report 2006)

How to calibrate the organization structure of the case company will be introduced in this paragraph. Initially, SAP encourages the finance departments in DFM divided into two parts: financial accounting and financial analysis---big F and small f, which have been cited in the former chapter. Then, the management of financial departments turns into another way. Previously, there were 3 financial departments and 7 subsidiaries working for accounting issues in DFM. Every single subsidiary had a personal financial perspective. That means 10 financial departments were handling business activities in variable regulations at the same time. Nevertheless, after applying SAP in the company, the financial employees are totally separated out of the former subsidiaries. The SAP system requires financial departments to be independent in the management from pervious organization. They have no relationship with factories which they used to work for anymore. 10 departments were amalgamated into one branch in DFM. From then on, financial staffs are subordinate to the headquarters directly. (Interview Jiang Hong 2013)

SAP system promotes professionals to manage and coordinate business activities in one platform. This action plays a favorable role in controlling effective information flows in DFM. Isolation of management departments not only rounds up the similar tasks together, but also enhances the internal control. It strongly forbids accountants to commit partnership crime with other employees (salesmen, purchaser and storekeeper) as well as to release inside information. Therefore, the

number of false vouchers, false documents and internal corruption will be eliminated or even disappeared. (Interview Jiang Hong 2013)

Beside this, the centralization also shows in the network. Because of the advanced techniques of SAP, the responsibilities of financial organizations are clearly defined in SAP system under international standard. In practical work, the business activities are centralized on the basis of same characteristics. In DFM, the SAP information system summarizes accounting works into FI and CO Modules. Simultaneously, other modules such as: Material Management Module and Sales & Distribution Modules are working as assistants for FI and CO to record and transfer important information into the system. Thus management accountants can observe the information fluctuation throughout the whole business process at anytime, anywhere.

For instance: In the past, the sales invoices generated in the sales system would be packed and transferred to the accounting departments together. Management accountants used to spend more than half of the month in monitoring changes of raw materials and entering product cost into excels. Now, these tasks are done by other employees in the organization. When the sales invoice is created in SD modules, the sales revenue account, bank account and account receivables will automatically update in FI and CO modules. In addition, the former management accounting work, which relate to material and cost are finished by front-line worker: purchaser and warehouse keeper etc. Constantly gathering, organizing and updating information about purchasing, transportation and sales processes will appear in the SAP system if there are business transactions. As a consequence, management accountants are more capable to concentrate on handling centralized accounting activities in several stable steps. (Interview Jiang Hong 2013)

6.4.5 Management Accounting

Since much “previous accounting work” is done by other members in the enterprise, the role of management accountants is extensively affected. The following tasks were earlier parts of the management accountant’s daily activities in DFM:

- Checking the information coming from the interfaces and solving problems in the transformation;
- Maintenance of accounting master data, especially in the cost of products;
- Posting correct documents, books and financial reports;
- Collection and preparation of monthly or yearly cost centre reports and the analysis report of the differences between them and previous strategy;
- Assistant for manager to analyze and design business planning.

At the beginning, there are an amount of daily routine tasks of the management accountants, which put much pressure on their shoulders. In DFM, most management accountants maintained 40-49 working hours per week at the end of month or year. After installing SAP software, the tasks of management accounting narrowed to the activities most related to cost centre, profit centre, product cost and profits analysis. Although much manual work is replaced and routine activities are reinforced by machine, but this does not mean plants “lose” financial staffs. (Interview Qiao Ling 2013)

Undoubtedly, human beings would never be replaced by machines. In DFM, the number of management accountants is not decline in SAP system, but increase instead. Management accountants are being spread out in headquarters, subsidiaries and factories etc. The number of financial professionals in every

financial branch rises from 10 to nearly 20 (including the front-line workers with accounting knowledge). Monitoring, recording and reporting digital data at the first line of producing are their new responsibilities. Merchants have placed management accountants in every level of the organization, even though they are not totally named accountants anymore. This effective measure helps managers keep in contact with figures and different modules closely in the enterprise, making decisions on the more correct, transparent and real-time messages. (Interview Qiao Ling 2013)

The cost accounting records start from storage of raw material in warehouse, delivery voucher, transfer related voucher at the end of month and product cost calculation to product cost analysis report. Most financial data are gathered and analyzed by the front-line personnel and automatic computers, before be delivered to the senior managers. These first-line works are of great benefits to the organization by improving information-processing speed. Hence, much more attention is paid for the fluctuation of data in warehouse, logistics and sales, rather than only care about the accuracy. Questions about the data become the essential issues. “Why is there lost materials without any record? Who is responsible for these mistakes? Do the lower incomes and less prosperity are only attributed to less productive?” In DFM, from 2004, there are continual SAP and accounting courses have been offered to the fist-level employees. More than thousands workers have received such kind of education within 4 years, from 2004 to 2008. The accountants’ job in DFM changes from gathering information to analyzing business performance, from recording information to assisting controllers. All this should thanks to the advanced SAP system. (Interview Liu Changqing 2013)

The general manager in DFM once said: “Employees in DFM never lack passion, handwork and creativity, but only miss a tool or method in managing company.” Just as in a tricycle, the passengers are sitting behind the driver, unconscious of

the front situation. When it comes to SAP, the financial and accounting departments are motor vehicle passengers, who are confronting the driver and road condition directly. Management accountants with a broad horizon are turning their perspectives on business market supervision as well as up-to-date information analysis. The changes of raw materials, expenditure in transmission and sales revenue are displayed and updated in an integrate platform. Consequently, the financial branch is focusing on bringing the most accuracy digital figure to controllers than anytime.

Furthermore, in the old organization structure, accounting and finance departments lacked the communication and collaboration with other departments. The financial and accounting departments were considered less important, owing to the job duties on gathering, recording and reporting data. To be specific, when compared with sales department, those two departments seem less useful, only giving rise to expenditure and producing no revenue. In the former DFM, the status of salesmen highly outweighed the one of financial and accounting employees. Financial professional were regarded not totally contribute themselves to building up organization. However, in financial and accounting staffs' opinions, the purchasing, logistics and sales departments were not provide most accuracy and correct figure to support financial work. Different standpoints led to potential barriers between them on enterprise administration. (Interview Liu Changqing 2013)

But nowadays, all employees in DFM are working in an identical platform. Management accounting is fully developed in departments' collaboration. As described in the former content, the simple tasks of management accounting are performed by first-level workers. The functions: monitoring, analyzing and decision-making of new management accountants are enhanced by the SAP system. That is why management accountants in DFM change from business

reporter to business analyst. Meanwhile, the horizon of management professionals is broadened, not only keeping a watchful eye on the accounting knowledge, but also caring about the whole business performances. Modern management accountants in the case company are obliged to acquire all the professional knowledge from purchasing, product, logistics to sales, even aware of the knowledge of information system maintenance. (Special Report 2007)

6.4.6 Costing Method

The corporation consists of 40 subsidiaries and 35 plants. Most of them were controlled in different regulations years ago. Just like one family has many members who are working according to their personal habits. Whether this family will boom or not is difficult to be expected because of the uncertain measurements. The Navigator Project has solved this issue by standardized accounting and financial operations in every subsidiary and unified financial organizations management, especially in cost accounting method. (Special Report 2007)

Never contented with the standardized calculation process, DFM wanted to explore more advanced costing method to help its to be accustomed to fierce competition in the international market. Traditionally, management accounting is mainly for checking and evaluating the differences between practical data and budget, especially in cost calculation. Products' cost reflects the most essential producing situation of a company, decides the yearly business performances. In DFM, cost accounting is not a trivial job. (Special Report 2007)

The traditional costing method used in the case company is the job-order costing method. This method most used in small companies, who are producing small quantities of products. Thus DFM has to separate tasks into several small pieces to suit this costing method. The relevant cost analysis report could not show the

direct cost, manufacturing expenses and work-in-process cost respectively. Beside this, if the manufacturing expenses change dramatically, the direct labor hours are completely different each month, the manufacturing overhead would be only calculated as an average data not the real one. (Interview Wang Bin 2013)

But since DFM applied ABC method in SAP 2007, the cost calculating process are changed. In the costing analysis report, the management accountants list the volume-based cost directly (direct labor, machine hour, water expense, electricity expense etc.) The cost is allocated on different rate to every activity involving in the manufacture. And an additional work appeared: management accountants should compare the expenditure of different activity with its history record, evaluate the fluctuation and provide solution to decline it. (Interview Wang Bin 2013)

6.4.7 Digital Data

The implementation of the SAP system in the Navigator Project has realized the improvement of data quality and sense of risk. Traditionally, DFM used to collect qualitative data in the daily work, because of the decentralized organization. It was difficult to analyze and use data, especially some of them are conducted in different indexes. This phenomenon was a threat to result analysis and the data comparison, prevented organization from monitoring the whole business effectively and correctly. Hence, the quantitative indexes (chassis bearing degree, the stiffness quota: load and vibration, and the tie-pressure indication etc.) are necessary in the information system. In this integrated SAP system, data is under the evaluation at same index. This function empowers the corporation to compare business performances in different subsidiaries. (Special Report 2006)

Another change is the acceleration of information processing. Financial statements and digital data in DFM were only available at the end of the accounting cycle. It means that managers can only be aware of business performance at a set time, mostly in the March of next year. This inflexible management resulted in an insensitivity of market. Despite the long time spent for data collection and analysis, the delay of information and information distorting also called more attention. For instance: salesmen used to get several hours information lag from material flow to currency flow. Thus, DFM was kept accepting vehicles order with the shortage of inventory for a long time lie in the large time gap.

But now, input and output sufficient information can be done with few seconds in the SAP system, strongly guarantee the timeliness of data transmission. DFM has optimized its accuracy data by checking business transactions and information every day. Figure 6 expresses how the information transfers from the production line to management accounting in case company.

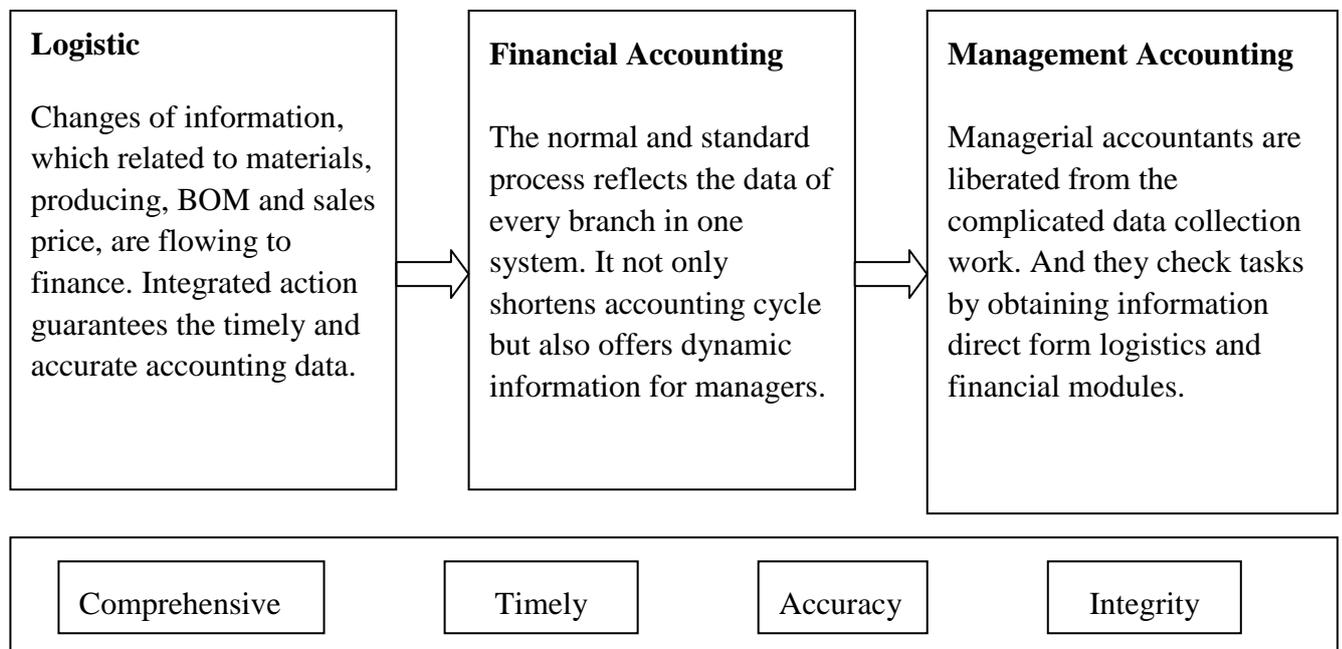


Figure6. The process of information transformation (Special Report 2006)

Presently, the senior managers in DFM can easily get all the comprehensive, timely, accuracy and integrity information in SAP system. The messages not only first gathered in Logistic modules, but also be checked more than 3 times when they are flowing from logistic, financial accounting to management accounting module. Therefore, the management accountants are liberated from their former simple work. At the same time, they are able to make more professional evaluation depends on the high-quality information.

6.4.8 Time Reduction and Effectiveness

Accounting cycle refers to a series of activities that begins with dealing with a transaction and ends with closing of the books. Because these activities are repeated in a short period, it also called accounting process. Generally, the accounting cycle is a limited period in relationship with economic entity. For the case company, the accounting cycle was approximately 12 days for monthly reports and two month for yearly financial statement. But in the plan of Navigator Project, after installing SAP in the information system, DFM should “closing monthly accounting in 3 days and publish yearly reports in 5 days”. (Special Report 2007)

When the company used manual work to place an order, this task would transfer from manufacturing department, subsidiaries & plants to product line. The large amount of time spent in information transmission was a profound weakness of DFM. At present, the online order system is provided in SAP system. Customers can order products online by one mouse click. Within one second, this order is delivered to the purchase, manufacturing departments and plants at same time. DFM usually gathers orders and inform plants in one day, rather than collect all the orders in a package then send it to the plants once a month. The quick reaction

and time saving contribute to maintain consistent information in the transmission and narrow the accounting cycle. (Special Report 2007)

The function of saving time for closing accounting cycle is not only beneficial to publish financial statement in a short time, but also improve the decision-making process. What is more important, it has a dramatic impact on management accounting. The short period in closing accounting cycle helps management accountants to obtain up-to-date, accurate information and plenty of time to conclude the correct analysis. Time elimination in closing the books and consolidating reports allow DFM and the second biggest shareholder Nissan to acquire economic situation and business performance of case company at the first time. That is why numerous worldwide top automakers are operating their businesses under high demanding accounting cycle.

The less time spent in gathering and recording data, the more time can be left for analysis and summary. Management accountants in DFM used to have 2 working weeks for performances evaluation before published the financial reports. But now, they are providing more than one month working period for this task. The analysis report will first made by internal personnel, and then send to the external professionals for duplication check. (Interview Qiao Ling 2013)

In this changing world, numerous companies are facing bankruptcy due to the decision mistakes. Through gaining a clear awareness of the company's financial situation, being sensitive to the market, competitors and walking at the cutting edge, will companies survive in the competition.

6.4.9 Cooperation

Previously, the tasks were repeated undertaken, because of the less standard regulations and rules in case company. However, the advanced enterprise resource planning system---SAP has reconstructed the organization, broke the walls between different subsidiaries and built a same platform for all branches. The entire staffs have participated in the Navigator Project, without care about which department they come from. The collaboration between various subsidiaries in DFM reaches an unprecedented height. Collaboration strongly enhances the information communication and transformation in DFM, especially comparing with independent working subsidiaries decades ago. Financial departments are not be neglected. Moreover, the closer relationship and well cooperation strengthen the ability of finding mistakes in the business activities. Logistics and sales departments will not ignore error messages anymore since recording digital data becomes part of their mission. (Special Report 2006)

Before setting up the SAP software, business departments only cared for the tasks that were theirs. There was less cooperation between branches. For example: sales department only report the sales results to finance department once a month. If some misunderstandings founded in the statements, financial professionals have to call sales employee back for further discussion. Therefore, at the end of month or year, accountants used to work overtime for repetitive work. (Special Report 2006)

However, in the SAP system, some tasks are shared by different departments. For example: documents opened by sellers can directly be regarded as accounting vouchers. And management personnel hold the role of auditing. Since data collection and inspection are undertaken by several departments together, the frequency of communication increase to a high level. There is another example: in the credit management, sales department could decide customers itself years ago. That means, the sales managers had 100% power to determine which customers

can purchase on credit. But nowadays, the decision is determined by several departments together. To sum up, in the new system, departments are linking together with no one left. Because of the close collaboration of departments in DFM, personal power is decentralized and executive force is strengthened. (Special Report 2006)

6.5 Forecast this Project

As a representative of enterprise resource planning system, SAP software is named “Never end ERP”. In other words, even when the implementation is finished, SAP project still face changes. For case company, DFM has only installed the most crucial modules. As times going on, the high-level administration will require furthermore assistant modules. (Special Report 2007)

To continue optimize information system, Project 2³, a long-term plan aim at improving business operation in DFM has been designed. In the project, 2³ refer to three different 2. The first one is to gain 2 times of the previous sales and revenues by high productivity and advanced machines. Next, the second one is to increase 2% of the previous trading profit. The final one is to makes friends with two partners: Nissan and Fukuda, to build the bridge to lean and share technologies with them for the sake of resource optimization. (Special Report 2007)

The Project 2³ encourages the two biggest shareholders: Dongfeng and Nissan cooperate together, both in technologic skills and management experiences. Of course, SAP system is the strong fundamental of this plan. Keeping absorbing the advanced SAP techniques form Japan and management experiences from Dongfeng, DFM is growing up to be a giant China automaker beyond reproach.

Even though SAP has helped managers to access data throughout the business, getting accurate data is not the final goal for this project. DFM is planning to explore SAP system's function in analyzing data automatically and scientifically, so that the decision-making process will be simplified and pressure of managers will be reduced.

7. CONCLUSION

This study focuses on the research how enterprise resource planning system changes management accounting in an organization. Most organizations do not have the information process or tools needed to make informed, responsive decisions due to underinvestment in information infrastructure and IT tools. The proper implementation of information system in enterprise facilitates the roles transition, removal of many tasks, enough time left for managers to make decisions. The most positive effect of this information system is the management and organization structure optimization.

Then in the empirical part, the changes brought by the implementation of SAP are analyzed by the researcher in the case company: Dongfeng Motor Corporation (DFM). Although the implementation of SAP is finished in DFM, but the optimizing project is never-ending.

There are many positive impacts of SAP on management accounting. To start with, the SAP system changed the original management and improved the integration, cooperation between different departments. The purchasing, logistics and sales departments are linking together, working at the same platform. This characteristic removes much manual work which should be done by management accountants. Once the data is input into the system by first-line employees, it will automatically transfer to every process throughout the business. In the transformation, the data keeps consistency and acquirable by staffs. From another perspective, this function guarantees the accuracy and transparency of data and provides more reliable information for management accountants.

The unique techniques of SAP information system realize the standardization of management accounting in DFM. As the researcher mentioned in the empirical chapter, the purpose of the Navigator Project carried by case company is to build

a data platform, which control subsidiaries and plants at same regulations and rules. It can be said that applying the same standards in DFM breaks down the barriers between different subsidiaries, promotes communication and collaboration, and ensures the effective information flows. The accruals and cost of the products calculation processes in every subsidiary are readable and acquirable by senior managers. In addition, the time spent in the data transition is reduced, more available time for management accountants to analyze data and design correct business strategies and plans is left.

In the case company DFM, the activities of management accounting are centralized after installing SAP software in the organization. In the project, DFM separated the financial departments out of the subsidiaries, centralized them into one financial branch and commanded them only to obey the headquarters of the organization. The financial department working independently, enhances the internal controlling and declines the risk of commit crimes. According to the fact that much gathering and recording work are finished by the computer in SAP, management accountants can concentrate on analyzing performance and evaluating business risks. Moreover, the routine of daily tasks are also developed by machines to a certain extent. Years ago, the time spent in closing accounting cycle was around 12 days, but currently, there is only 3 days for closing the monthly accounting cycle. Thanks to the advance technology, the faster in close accounting cycle, the much more time left for management accountants to make more accurate business analysis.

Beside these, the role of management accountants is also influenced by the program. The fist-line managers in purchasing, logistics departments or warehouse are training to be able to read and check accounting information in SAP system themselves, rather than see the reports made by others of their working areas. Some management accountants left finance departments and

became members in other branches for the reason of assisting first-line managers. Knowledge of accounting is decentralized in the organization, no longer only the accountants' specialty. Due to the standardization and integration of the enterprise recourse system, much basic work, such as: information collection and checking are done by computer or employees who are not accountants. Hence, in contemporary DFM, the core activities for management accountants are analysis and evaluation. Senior administrators will operate the corporation on the basis of analysis reports coming from management professionals. In conclusion, management experts become business analysts rather than traditional reporters.

Furthermore, the SAP system offers a sophisticated costing method, namely the activity-based costing (ABC) to calculate product costs. Obviously, the widely used overhead costing method is out of date in business organizations. The accuracy of cost counted by this approach cannot satisfy enterprises anymore. Therefore, a more advanced and scientific method ABC approach appears. In this approach, the vehicle cost is allocated by resource consumption in the manufacturing process. Operating the company in such costing approach provides DFM closer observation on the various activities involving in the producing process. Generally, management accountants will have a more detailed and accurate business assessment of cost on the basis of activity-based costing.

Even though, the positive influences of SAP strongly outweigh negative ones, it does not mean the disadvantages should be ignored. The most significant one is the big cost both in human recourse and capital. More than one hundred people worked on this project for approximately 2 years, but still only accomplished parts of the project. And the enormous maintaining expenditure is another problem. DFM pays more than hundred thousands RMB yearly. Nevertheless, other weaknesses of SAP such as: many outsourcing accounting activities has not

happened in the case company. This means the business situation of DFM is not affected by these drawbacks.

Generally, as the literature cited in the theoretical part, the routine work in case company is indeed reduced. The forward-looking information, changes of the role of management accountants and the improvement in line managers are confirmed in DFM. But because the special business environment of case company, the accounting outsourcing activities have not appeared yet. And for the characteristic of over dependent on computer, DFM still not treated it as a big issue. The left two features: decentralized accounting knowledge and large amount of maintenance fee have already called more and more attentions.

From this longitudinal case study, the conclusion that enterprise recourse system, especially SAP system indeed has a profound impact on management accounting can be made. The special characteristics of SAP optimize the management accounting and organizational structure, offering more opportunities for enterprise to stand in the leading edge of market competition.

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APPENDIX 1. Company documents---special report (in Chinese)

东风有限 SAP 系统成功上线

Minutes of DFL SAP Project Practitioner Symposium

座 谈 会 实 录

记者：先请顾问公司龚振飞总监对 SAP 项目整个推进过程作个简单的介绍吧。

龚振飞：这个项目开始两年多，从企业管理咨询做起，然后启动 SAP 实施。启动初期，我们考虑的是如何将 Nissan 模板推进到东风运作中，这个过程出现的问题主要是文化差异和沟通不畅，造成项目推进过程中的困难。从去年4月起，凯捷国内顾问逐渐替代了来自美国的专家。这个转型非常重要，应该说本地的顾问和东风文化能够融合得更好一些，大家相互比较理解，沟通基本没问题。所以到七厂一部开始实施的时候，基本上都是本地顾问在做。在4个月的时间内，七厂一部和财务总部项目都上线，过程非常辛苦。上线之后还存在各种各样的问题，经过项目组成员的共同努力，目前已经基本实现我们的大目标，也就是“3天关帐，5天报表”的目标。反过来再看销售部，它上线的最后日期是今年的1月9号。期间也是经历了很多波折，但结果从现在看来还是比较好。每个人经历了这个过程后都成长了很多。无论是顾问也好、核心成员也好、凯捷也好、东风也好，SAP 的实施已经证明了我们这两个团队具有非常高的合作精神。项目困难时期，东风有限的领导给与项目关注的力度也是我做 SAP 项目以来感受最深的。销售部上线标志着整个东风商用车已经完全完全实现了“3天关帐，5天报表”的初步目标，当然后续还有很多东西要改善。这也是 ERP 实施的特点，并不是几个月的时间就可以解决企业的所有问题。通过建立这样一个平台后，我想以后东风信息化建设的速度以及质量会越来越越好。

记者：目前 SAP 从功能角度看有哪些模块？

龚振飞：有5个：财务会计 FI、管理会计 CO、物料管理 MM、销售分销 SD、目前正在实施的包括生产计划及控制 PP。这都是 SAP 最核心、最基础、最困难的模块。

记者：请 FI 模块的主管介绍一下你们实施过程中遇到的最大困难是什么？

雷林：相对于 MM 和 SD 来说，FI 的困难变化没那么大。它是很基础的模块，主要用于会计核算。以前我们采用的国内用友 ERP 系统也是做得可以的，很合中国人

的习惯。在 SAP FI 模块使用过程中，很多人认为没有以前用友的好用。但国内的 ERP 系统侧重于财务方面，它可能和其他模块有关联，但肯定没 SAP 集成的这么好。这是我感触很深的一个地方。因为东风以前使用用友的基础比较好，所以相对于其它模块来说，我们碰到的困难没有那么大。以前我们大部分使用的用友软件不同版本，还有金蝶的，以及其它一些财务软件，但上了 SAP 以后，把这个平台统一了。就像商用车这边，都在一个平台上进行核算，非常好进行管理，可以进行实时监控。而以前没有统一平台时，只有等到别人上报报表的时候才能看到。也就是说，以前用友的软件主要集中在财务核算上，而 SAP 已经不单单是一个财务核算系统，而具有了企业管理的功能，把财务核算的概念和企业生产、财务、销售、采购都结合到一块了。集成是 SAP 比较有特色的一个特点，在做 FI 时，肯定要涉及到 SD、MM、PP、CO 等。所以在实施过程中，单纯 FI 不会遇到太多问题，主要是和其它模块的沟通协调，要和其它方案达成一致，融合起来。

记者：FI 是不是东风基础最好的模块，所以最容易导入？

龚振飞：FI 和其它模块上线以后，我们已经走到了管理的前沿。原来的报表、数据分析都是在结完帐后才能得到，甚至不能验证数据的准确性。但现在我们可以随时从系统中导出想要的的数据，然后专业厂、销售部、专业厂之间就能进行核对，便于随时发现问题。甚至每天都可以核对。以前是做不到这一点的。虽然



领航计划



东风有限全面改善包括系统、组织结构、流程和步骤在内的财务组织基础架构；同时，日产和东风提出在2005年11月30日前对财务和管理信息实行标准化的宏伟目标

- 一致、准确、透明的数据
- 自2005年12月开始东风有限所有子公司能够在3天内提交财务报表，9天完成对财务报表的合并（使用Magnum工具）
- 自2006年开始，所有子公司在5天内完成对东风有限财务报表数据的合并
- 2005年11月1日确定信息代码设置使用的要求
- 到2005年12月31日能够提交产品和市场的管理信息以及产品信息
- 实现成本核算的硬件需求（全球成本核算）
- 支持业务战略的业绩评估指标（将安）
- 支持业务战略的业务评估报告和关键绩效指标（销售、采购、库存管理和财务）
- 预算控制

Special Report

特别报道

以前有用友的ERP,但SAP的FI使得我们的数据准确性得到更好的提高。

姚挺:整个东风有限集团从来还没有像现在这样集成的工作过。现在从仓库收料开始,就自动形成了会计凭证,一直到车间领用,系统都自动把凭证做好了。我们这些分析工作全部来自现场一线人员数据收集。股份公司总经理朱福寿曾经说过“在东风有限和股份公司,我们缺乏的不是激情,而是一种工具和方法”。SAP这种集成的方法可以帮助我们做一些过去想做却做不了的事情。举个例子,十年前襄樊市有种三轮车,乘客坐前面,骑车人坐后面,这样当这个车横穿马路时前面的人是非常非常害怕的。现在我们感觉财务部就是坐在前面的乘客,后台的一举一动都牵扯到我们。现在集成之后,我们就可以分析我的采购价差、利润水平,以及这些数字是怎么来的。现在股份公司上线的是FI、CO、MM三个模块,我们财务部从来都没有像现在这样关心物料的移动、发出,也从来没有像现在这样关心我们的产品结构数据的正确性。所以说管理一下子就被前移了。

姚志力:以前库房月结的时候工作量非常之大,核算、盘点。但现在财务已经完全不需要这个工作了。对库房的管理,物料的管理,现在关心的是数据的变化,而不再是准确不准确了。

姚挺:现在财务主要是问“为什么”。为什么一个车型的成本订单上有投入没产出?为什么有产出而没投入?到底是哪个环节发生了问题,是现场数据错了,还是工人没有按数据装车?财务已经从过去的信息收集员变成现在的分析师,从过去单纯核算向管理转变。

记者:谈一下CO模块,整个模块你们有哪些感受最深?
周红兵:我感受最深的就是主数据的分析工作是最重要的,它可以直接带来很大的影响或危害,它的评估结果直接影响到决策或分析工作。

南鹏:我说一下具体的数字。物料主数据上传的有104100个,模具具有43491条,维修配件达到了52740条,原材料是10794个,整车品种422个,整个商用车公司级别的数据合计大约是211547个。也就是公司级的数据一共是21万多条,还有工厂级,以及财务的

SAP实施总体状态



相关数据,整个数据收集工作从05年3月26号的动员会开始,一直到8月9号七厂上线,前后陆陆续续进行了四拨战役,以7月份最为艰苦。在没有上SAP系统之前,有各种各样的系统支撑着不同单位部门数据的应用,比如说,研发中心有研发中心的试制数据,各个工厂有自己的小系统。但上了SAP以后,要它们满足一个公司级的标准,在这个标准化统一的过程中,我们也经历了一个痛苦的过程,就像当年红军长征爬雪山过草地一样。

梁栋:应该说数据收集还是一个比较容易的事。但数据收集上来后,一筛选、一分析,发现很多都是没法用的,没办法导入到系统,不符合系统要求。6月份我们就发现了这些数据,有些前后编码不同,有些前后修改不同,还有些数据会采用重复。然后我们把这些数据筛选出来,进行重新整理,重新编。

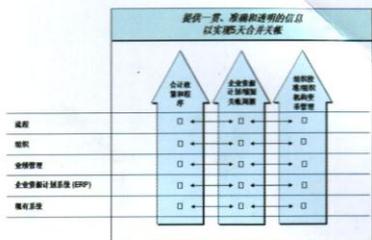
南鹏:这样不准确的数据应该占全部数据的5%-10%。举个例子,我们有个最小计量单位“瓶”,一种维修用的瓶装气体。49厂用“瓶”,重型车厂用“瓶”,43厂也用“瓶”。但43厂和重型车厂的瓶是国家标准,24升大瓶;而49厂的是4升装小瓶。因此这里面就有一个1:6的关系,这样的问题我们当时都要纠正出来。后来我们决定将大瓶作为标准,49厂的小瓶就要有一个换算关系,否则帐面库存数量就有变化。

记者:也就是说在主数据收集阶段,我们把最小的数据都收集上来了,然后发现有大概7%左右的不准确率。那你们是怎样克服这7%不准确率的?

南鹏:从高层开始就认识到7%的危害性。乔阳和黄刚这两位老总级别的人物就开始部署攻坚战。每天专业厂一把手或二把手都要汇报“你今天消灭了多少个潜在的危害,做了哪些工作,哪些工作没有做”,然后根据顾问的要求,以及SAP数据小组的要求进行改善。

梁栋:我说一下股份公司的情况。我们整理数据的时候,公司领导就说“如果数据整理正确,这个项目就成功了一半”。最开始,我们挑了两个最常用的车型进行测试。我们拿着BOM在现场装车时一个对一个。一辆车的结果

整合的方案



好一些,算上通用件是84%的准确率;去掉标准件,光算专用件是97%的准确率。还有一辆车是94%的准确率,包括标准件是79%的准确率。这个数据就非常可怕了。因此公司领导就说,要一辆车一辆车重装。我们经历了几个阶段,首先将400个车型每量车的BOM数据打印出来发给现场的工艺人员核对,然后反馈回来。这时数据进入系统还会有错误。第二步,我们再挑十几个常用车型,现场打地摊进行数据核对。就是在现场专门作一个试制阵地,用系统里的数据一个对一个对照进行装车。一个星期只能装两辆车,所以这个阶段我们整整花了两个月时间。到最后上线,我们有一个“7+3计划”,就是一周内挑出三天时间,在这三天内通过销售公司把常用车型筛选出来,将102个车型压缩成59个车型。在这三天中共有59个车型,二十多个研发人员,十几个制造人员,十几个工艺人员,还有厂里一线所有工人都在现场。因此现场人数基本达到一百人。在这三天里,从早上转到晚上,一辆车一辆车过,只要和数据不一致,我们就停下来,在现场分析为什么不一样。总共有几千条数据都是在这三天内解决的。

南鹏: 总而言之,数据方面打了三大战役。第一大战役是静态数据,也就是物料组数据,这种不会变化的,以及公式、定额等。第二个战役就是动态数据,在某个时点上的数据。第三大战役就是补数据。静态数据收集时,我们项目组内部没少吵架,已经顾不上很多了。

记者: 我听到这么一句话,东风有限在推进SAP过程中,要“先僵化、再优化、后固化”。这句话应该怎样理解?

龚振飞: 这句话是很经典的。一个项目的实施不可能在有限的时间里完成所有东西,或者说通过八个月或十个月项目的实施不可能解决企业所有的问题,包括流程方面的问题。我们在谈流程、谈报表、谈开发的时候,有很多东西进行完了之后还要变更,因此我们提出这样一个观点“一个问题都不能闹,一个问题都不能掉”,这也是项目的出发点。项目的出发点是至关重要的。比较这两个出发点,我们进行“先僵化、再优化、后固化”的方法才是最切合实际的。我们顾问公司也非常同意这种说法。

王宏建: 一般上ERP是要进行业务流程再造的,但我们没有这个过程。如果先将现有流程进行优化后再进行实施,时间就会拖得很长,项目风险很大。因此我们要把目前的流程僵化到系统里,然后进行优化、改善,优化完了之后再最终固化下来。因此说“僵化、优化、固化”讲的是一个很长的过程,并不是说一上线就完成了这三个过程。上线只是完成了“僵化”过程。也就是06年3月底我们完成了“僵化”过程,3月底以后进行优化,达到固化还要很长时间。

记者: 请主管MM模块的主管介绍一下这个模块推进情况。
杨希尧: 原来东风有一套供应管理系统,但有的厂上了,有的厂没上,内部信息系统管理不统一,缺少一个信息共享平台。我们既是一个管理部门,也是业务部门,对

财务信息质量的全面提升



各个工厂的数据要有一个统一的管理平台和快速简洁的分析软件。我们首先在总部使用了这个软件,但工厂方面则不统一。SAP上线后使我们的业务实现了共享的平台。物料管理方面,通过我们的查询,可以随时清楚地知道七厂的库存、收发,以及所有动态数据。和前面两个模块一样,数据集中也有准确性的问题,以前工厂标准不统一,有些物料描述不规范,还有各方面的理解不一样,因此报上来的数据可能就五花八门。然后进行反复筛选,这个工作量非常大,也非常细致。我们本身习惯了东风原来的系统,在SAP上线时我们非常担心会造成物流停滞:原材料的收发,还有汽车零件的收发,一旦造成停产,这个责任谁来负?对这个问题,我们都已经作了很多种备选方案。

记者: 请主管SD模块的主管介绍一下吧。

王宏建: 相对乘用车来说,商用车业务是非常复杂的,这么多年,市场销售总部也是不断的在摸索,自己也是一套行之有效的管理流程和营销举措,它们和SAP里的流程有些不太一致。所以怎样把二者结合在一起,融合在一起是这个项目进行中的难点。也正是因为这个难点没有很好的解决,导致SAP在市场销售总部的上线一再推迟。从5月1号推到8月1号,又从8月1号一口气推到06年1月份。市场销售总部的认识是非常统一的,坚定不移地按照东风有限高层的决定在市场销售总部推SAP管理软件。市场销售总部信息化的时间也比较长,在80年代末和90年代中期以前都曾是行业标杆。这都是我们自主开发,没有统一用一个专门软件。我们的主要业务是整车销售、配件销售、财务管理和物流管理。过去是一、二十个系统在支撑这四个业务,杂乱无章,不能利用系统对业务做到很好的管控。SAP上线后实际就是做成了一个集成系统,这也是我们的迫切需要。一再推迟是因为我们实际业务和SAP流程不能吻合,因此很多业务需求不能得到满足,然后挂在问题管理清单上。这样的问题在5月1日攒了有100多个,没有得到有效解决。这些问题不解决,系统也没办法配置



Special Report

特别报道

“从核算到管理”的平台



出来。配置出来后, 我们还有一个测试、培训、数据准备工作, 但這些工作都没有办法安排进行。所以5月1日就推到了8月1日。

在SAP推进当中, 我们一直强调顾问主导。这一点不一定正确, 但对市场销售总部来说必须这么做。我们之间的“妥协”更多的是业务流程和做法, 都可以进行调整, 不一定非要按现有的做法进行。但顾总认为“通过一种变通的方法是一定能够走通的”。我们有些业务人员总是在部门局部的角度看问题, 总是要坚持非全局的做法, 这样的话, 很多问题都解决不了。05年6月份是市场销售总部SAP项目实施的一个转折点。龚振飞加入项目, 直接领导市场销售总部上线工作。在我们内部, 顾建明总部长亲自挂帅, 成为我们业务决策组组长。组员就是销售部所有高管。在项目组层面上解决不了的问题全部提交给他们, 他们在一个比较高的角度来决定这些流程和做法。高层领导介入后, 分析判断, 很容易就贯彻执行了。经过大概3个月, 至9月份所有遗留问题基本全部解决。

龚振飞: 我来这里两个星期后, 组织了一次七厂上线评估和销售部上线评估, 做成两份文件。基于SAP上线基本条件给它们设定了打分标准。ERP实施一定要保证每个阶段和实施点达到要求, 才能够进行上线。8月份评估结果就是: 七厂可以上线, 但时间非常紧; 销售部要推迟上线。但销售部具体上线目标时间当初和乔部长初步定在11月份。七厂上线时, 我的主要精力放在七厂, 但之后就主要是销售部了。到9月份的时候, 我们把之前遗留的156个问题基本全部解决掉。另外七厂上线后, 我们认为销售部上线还需要更多的演练, 也就是实际业务数据的测试, 完全模拟实际情况的一种测试, 所以我们定在11月底完成所有的培训、测试、文档, 然后12月初到12月中旬作演练, 如果不行就再多两周时间进行。这样我们就在1月初进行了上线。

记者: 1月份上线后, 成功的标志有哪几点?

王宏建: 首先我们的营销业务能够在平台上正常运转, 再一个

就是“3天关帐”目标的实现, 这些都是上线成功的标志。SAP不光结束了以前销售总部信息系统混乱的情况, 同时也为新业务的发展建立了一个非常坚实的平台。这实际就是一个优化过程。

马启擎: SAP的成功上线为公司建立了一个平台, 对生产等有着积极的影响。我们厂的业务比较分散, 多出来一块改装业务, 这和43等厂可能不太一样。下面请贾师傅给我们做个介绍。

贾红: 从调研、蓝图编写、集中测试、项目上线, 我一直跟着SAP项目。整个过程中, 我学会了管理, 有始至终的管理。SAP上线后, 我们厂的各个职能部门都调动起来了, 技术、生产等部门各负其责, 一环套一环。我担任培训的工作, 把从顾问学到的知识传授给下面的操作人员。一个财务顾问和一个MM顾问从调研起就和我们在一起, 结合已有业务将SAP的操作流程一一进行讲解, 介绍这些业务如何在SAP中进行操作, 非常细致。开始朦朦胧胧不太懂, 但听了几次就明白了。

记者: SAP上线对员工的思维方式有什么影响? 对工厂有什么影响? 对公司有什么影响?

贾红: 刚开始接触时, 大家都觉得“怎么这么复杂啊”, 但应用以后就知道它是规范了管理。工作中有不到位的地方, 一个软件、一个操作就规范起来了。员工变得很爱学习, 喜欢问问题“以后存在的问题, 该如何解决……”。现在基本大家都知道了SAP。

姚志力: 只要是在SAP实施的单位里, 员工的印象是非常深的。有人问“SAP的中文名称是什么”, 没有! 基层员工可能有些不太清楚, 认为是一个信息系统。但SAP在管理层面是很流行的。朱总就强调一句话“以SAP作为平台进行DFAC的信息化建设”。大家要改变一个意识, SAP不是软件, 也不是系统, 它其实是一套管理思想。只不过它借助了软件的形式表现给大家。我们选择它, 也是希望通过SAP提高DFAC管理能力。站在DFAC角度看, 我认为现在只是进行了“领航计划”的一期, 领航计划还没有结束, 这个系统的推广范围也没有结束。DFAC目前只实施了总部, 下面的子公司还没有推。另一个, 我们只实施了最基础的MM, FI, CO, 但我们没有对它其它外围工作进行准确、全面的分析。

吴正洪: 其实“领航计划”就六个关键字“标准、错误、准确”, 这是一个过程。而“3天关帐, 5天报表”是个结果。过程产生结果。透明产生效率。2004年12月份是这个项目的最大转折点, 乔总作为项目主任启动新组织体系。项目过程中我们始终面临两个课题: 业务范围和系统的边界始终不能确立。作为项目管理来说, 这是最大的风险。如果范围和边界确定不下来, 那么项目范围就会越扩越大。我们当时确定的范围就是“MM、SD”, 严格按照日产模板来套, 按照日产能来实现。

任志远: “进”和“出”是SAP的两个支撑点, SAP的管理效

APPENDIX 2. Organization structure of the case company (DFM)



APPENDIX 3. Questionnaire in personal interviews

1. Which part is most important in the Navigator Project?
2. What changes of the role of management accountants happen after SAP installation?
3. What changes does SAP bring, especially in management accounting (the organization, the employees and the activities)?
4. How SAP software influences the main subsidiaries?
5. The difference between job-order costing method and ABC method?
6. How does the business cycle influenced by this project?