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Exploring CRM Adoption in Chinese SOEs: Insights from A Case Study

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Abstract – **Customer Relationship Management (CRM) systems, which are advanced enterprise information system (IS) packages, have been widely perceived by modern companies as a strategic tool to manage and maintain effective relationships with customers, as well as to satisfy their growing demands on high quality services and products. The study reported in this paper aimed to explore the state of the art of CRM adoption in Chinese companies, in particular State-Owned Enterprises (SOE). By using a case study approach, the research adopted a questionnaire survey as the main method of data collection. The questionnaire findings showed that a range of independent and isolated sales and customer-related applications (including sales and marketing systems, accounting systems, and human resources systems) have been used by the case company. However, an integrated CRM system seems to be currently missing in Chinese SOEs. These findings pointed out a strong need for SOEs to replace their legacy and isolated sales-related systems by an integrated CRM package, in order to satisfy the increasingly high demand of customers under the current very competitive market conditions in China.**

Keywords-*CRM; functional information systems; integration; Chinese SOEs*

I.   I. INTRODUCTION

Under the increasingly high competition in both global and local markets, maintaining customer loyalty and building long term and effective customer relationships are of crucial importance to companies [1, 2]. In order to better satisfy the needs of their customers, many companies are performing substantial changes and transformations on their organizational culture, structure, and business processes, from the traditional product-oriented style to a more customer-oriented one [3]. Customer Relationship Management (CRM) systems are widely perceived as one of the strategic tools to enable and facilitate these fundamental business changes in organizations [3, 4].

In China, the economic system of the country has been changed very essentially since 1978, from the traditional planning economy to a more open and competitive market-oriented system. However, this continuous national economic reform has also significantly changed China's business *status quo* [Peng and Nunes, 2010]. Probably the most important change introduced is the very severe competition raised in the domestic market [Peng and Nunes, 2010]. Faced with this competitive environment and economic pressure, there is an increasing need for Chinese companies to implement and use CRM systems, in order to improve customer satisfaction and loyalty, enhance revenue growth and increase employee productivity [Pan]. Consequently, the Chinese CRM market is growing rapidly in recent years. According to a market research report provided by the International Data Corporation (IDC, a global market intelligence firm), the sales of CRM systems in China grew from US\$25.8 million in 2003 to US\$108.6 million in 2008. It was also expected in the same IDC report that this sales figure will be increased in an annual rate of 33% from 2008 to 2013 [IDC report]. Moreover, this growing CRM market in China had attracted not just local Chinese CRM providers (such as Ufida, Kingdee and Powerise), but also many world leading vendors (such as SAP, Microsoft, Oracle, and Sieble) [Pan].

However, and despite this fast development of the domestic CRM market, the implementation rate of CRM systems in Chinese State-Owned Enterprises (SOEs) has been very low [Chen, 2006]. There may be various reasons that lead to such a low CRM implementation rate in Chinese SOEs. In particular, SOE managers and staff may not have a clear understanding on the concept of CRM. More importantly, they may not recognize the need and benefits for implementing CRM in the company. However, not many studies were done in the past to investigate these CRM issues in the context of Chinese SOEs. The study reported in this paper thus aimed to contribute to this research gap, by exploring the current situation of CRM adoption in Chinese SOEs. It aimed to provide valuable insights to make Chinese managers become more aware of the needs for implementing and using CRM in SOEs.

II.   LITERATURE REVIEW

As shown in Figure I, a typical commercial organization generally contains three hierarchical levels, namely operational level (involves daily operation and short-term planning of the company),

tactical level (deals with medium-term planning and controlling on budgets and resources), and strategic level (involves long-term strategic planning) [6]. Moreover, and in the horizontal dimension, a company also consists of a number of functional areas, such as sales, manufacturing, purchasing, finance, and human resources areas (Figure 1).

FIGURE I.   DIVISION OF ORGANISATIONAL LEVELS AND FUNCTIONAL AREAS (MODIFIED FROM FIGURE 2.1 IN LAUDON AND LAUDON [6])

A wide range of information systems (IS) can be developed, implemented and used by organizations to support the diverse information needs in different functional areas [6].   For instance, a sales information system can generally be used to handle business processes and data related to customer details, sales orders, and product promotions. Furthermore, diverse IS applications can also be used to deal with tasks at different organizational levels, including:

- Transaction Processing Systems (TPS) – for operational tasks, e.g. order tracking and processing;
- Management Information Systems (MIS) – for general management tasks, e.g. sales control and reporting;
- Decision Support Systems (DSS) – for analytical management tasks, e.g. carrying out regional sales analysis;
- Executive Information Systems (EIS) – for strategic planning and control, e.g. 5-year sales plan.

However, these diverse IS applications, which support a single functional area or organizational level, are traditionally isolated and run separately from each other [6]. These isolated IS applications are not able to communicate or exchange data with each other, which resulting in very low efficiency and productivity in their use [6, + Alter, 2002]. Consequently, cross-functional enterprise systems emerged in the 1990s as a solution towards this IS integration issue [6]. CRM system is one type of such enterprise applications (other types of enterprise systems include Enterprise Resource Planning or ERP systems, and Supply Chain Management or SCM systems).

Originally, CRM is a management concept and a "customer-focused business strategy that aims to increase customer satisfaction and customer loyalty

by offering a more responsive and customized service to each customer" [5].   Combing this concept with advanced information technologies, CRM systems are enterprise-wide IS packages, that aim to integrate and "coordinate all of the business processes that deal with customers in sales, marketing and service to optimize revenue, customer satisfaction, and customer retention" [6, 7]. CRM systems typically consist of three types of basic functions, including [2]:

- Operational functions – to support order processing, order delivery, customer account records, and customer payments;
- Analytical functions – contain data mining or data warehouse tools to examine purchasing patterns of customers and analyze sales data;
- Collaborative functions – to facilitate interaction between companies and their customers by using different types of channels, such as postal letters, online services, emails, and interactive voice response tools.

Accompanied with continuous technology evolution, contemporary CRM packages are often embedded with two other advanced software modules, namely partner relationship management (PRM) and employee relationship management (ERM) [6]. The PRM module uses a set of tools and techniques to support collaborations between organizations and their selling partners, such as distributors or retailers.   This module enables organizations to share customer information with their business partners more effectively, and also provides tools to evaluate partner performance. On the other hand, the ERM module is used to handle employee issues that are closely related to sales and customer aspects, such as setting sales targets to employees, managing employee performance and sales commission relative compensation, or training sales staff.

Overall, it clearly emerges from our discussion that CRM systems cover and integrate information and business processes in three functional areas of the company, namely sales and marketing, accounting, and human resources area. Moreover, CRM systems contain not just operational (i.e. TPS) functions, but also management (i.e. MIS and DSS) functions for sales report generating and data analysis (as summarized in Table I).

TABLE I.   SUMMARY OF CRM FUNCTIONS

CRM functions	Functional areas	IS nature
Operational components	Sales, marketing & accounting area	TPS
Analytical components	Sales, marketing & accounting area	DSS & MIS
Collaborative components	Sales & marketing area	TPS & DSS
PRM module	Sales & marketing area	MIS & DSS
ERM module	Human resource area	MIS & DSS

These findings of the literature review shed lights on the design and development of the questionnaire used in this study, as discussed in the next section.

III. METHODOLOGY

CRM adoption and usage involves inevitable interactions between the system and its organizational context. In particular, the success of CRM innovation is heavily dependent on the context of application. On the other hand, the implementation and use of CRMs can reshape an organization's culture, structure and processes. Therefore, it is impossible to separate CRM from its application context. According to Yin [Yin, 2003], a case study is an adequate approach to investigate "a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". Consequently, a case study approach was adopted for this research.

This case study involved a typical Chinese manufacturing SOE group, which operates in the Aluminum industry and employs more than 208,000 employees. Moreover, this SOE group consists of 9 branches and 1 research institute that are geographically dispersed in different cities and provinces in China. In order to seek insights from managers and system users from the different branches that compose the SOE group, questionnaire was used as the main method of data collection. The designed questionnaire contained a very extensive set of questions, but only findings related to the following questions are reported in this paper:

1) Whether the company has adopted CRM;
2) Whether the company has adopted any IS in the sales and marketing area;
   If so, whether the sales & marketing system contains TPS/MIS/DSS functions;
3) Whether the company has adopted any IS in the accounting and financial area;
   If so, whether the accounting & financial system contains TPS/MIS/DSS functions;
4) Whether the company has adopted any IS in the human resource area;
   If so, whether the human resource system contains TPS/MIS/DSS functions.

In this research, managers and systems users in the head office and 5 branches of the SOE group were set as the research subjects. With support of the CIO of the SOE group, the questionnaire was sent by email to the target respondents. Five respondents (1 manager + 4 system users) of each branch answered the questionnaire. In other words, a total of 30 valid and usable responses were received and analyzed.

IV. FINDINGS AND DISCUSSIONS

The questionnaire findings show that only 3 respondents (10%) considered CRM was adopted in their companies (Table II). However, and despite this low CRM adoption rate, 17 (56.7%) respondents stated that their companies had adopted information systems in sales and marketing area. Similarly, and as also highlighted in Table II, more than 27 out of the 30 respondents (90%) considered accounting systems and human resources systems had been implemented in their organizations. These findings clearly indicate that a set of IS applications had been used by the SOE group to support business processes in the sales, accounting and human resources areas. However, an enterprise-wide CRM system, which can integrated all of these legacy IS applications, seems to be missing in the case company.

TABLE II. IMPLEMENTATION OF CRM AND FUNCTIONAL ISs IN THE SOE GROUP

CRM		Sales and marketing systems	
Yes	No	Yes	No
3	27	17	13
Financial and accounting systems		Human resources systems	
Yes	No	Yes	No
29	1	27	3

Furthermore, the questionnaire also explored what types of IS functions (e.g. TPS, MIS or DSS functions) were contained in the legacy sales, accounting, and human resources systems in the case company (as shown in Figure II).

Sales and marketing systems

Finance and accounting systems
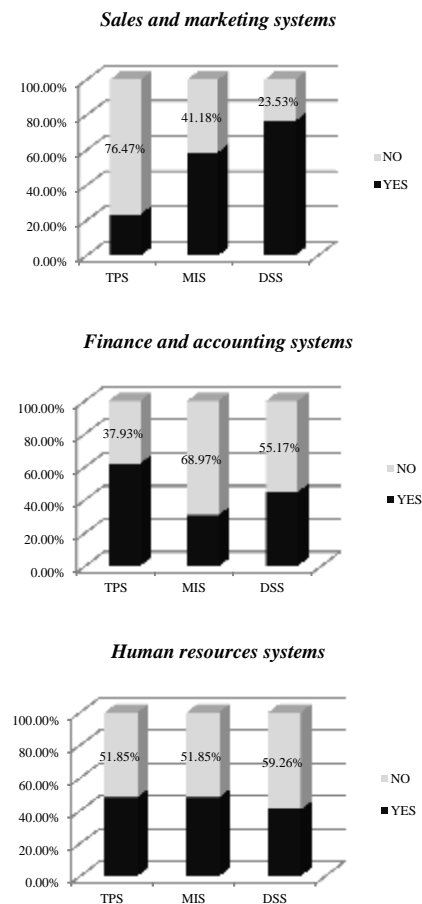

Human resources systems

FIGURE II. THE USE OF FUNCTIONAL INFORMATION SYSTEMS IN DIFFERENT ORGANIZATIONAL LEVELS

It clearly emerges from the findings presented in Fig. II that, the legacy sales, accounting, and human resources systems in the SOE group contains a great diversity of functions, including TPS functions (for daily operational tasks), MIS functions (for general reporting and planning), and DSS functions (for data mining and analysis). However, when these diverse IS applications are not properly integrated, the SOE group will inevitably encounter the typical IS phenomenon of "islands of automation".

"Islands of automation" refers to the phenomenon that isolated information systems are running separately from each other in a company [10]. These IS applications are usually developed by using different hardware, software and data resources. Therefore, these systems will not be able to communicate or share data and information with each other. From a CRM perspective, these isolated IS applications can cause a lot of sales and customer-related problems to the SOE group. For example, sales managers and personnel of the firm will need to spend a large amount of time to assemble data (e.g. sales figures, customer account details, and performance of sales staff) they needed from the isolated ISs. It may therefore be difficult for sales managers to establish efficient sales plans, or for sales staff to respond promptly to customer queries. These isolated IS applications, of which each focuses on a very limited area, will also not support proper integration of business processes across diverse functions of the company. The lack of integration of sales-related business processes can in turn be a barrier for the company to analyze and obtain lower buying prices and also prevent them from reacting rapidly to market changes [6]. Moreover, the maintenance cost of these isolated information systems could be very high, but companies generally receive very little benefits from their use [11].

Consequently, the questionnaire findings suggest a strong need for the SOE group to replace their legacy and isolated sales-related systems by an integrated CRM package. Having an enterprise-wide CRM system can help the SOE group to reduce operational and IT costs, as well as to improve efficiency and productivity, when dealing with sales and customer-related issues [3].

V. CONCLUSIONS

This paper reports on a case study that investigated CRM adoption in Chinese SOEs. Through the literature review, the researchers identified that CRM systems cover three main business areas of organizations, namely sales and marketing area, accounting and financial area, and human resources area. The findings derived from the case study indicate that a range of IS applications have been used to support the sales, accounting, and human resources areas in different branches of the SOE group. However, a central CRM system, which integrates all these three functional areas across different branches of the SOE group, was found to be missing. These findings seem to confirm the current low CRM adoption rate in Chinese SOEs, but also clearly point out the need for implementing CRM in these Chinese firms. More importantly, the findings also suggest that there may be currently a lack of central IS planning in SOE groups. As a result, different branches in the case company are currently using very different and totally independent ISs to support diverse business areas. This IS isolation issue can significantly and negatively affect long-term development of Chinese SOE groups. In conclusion, we would suggest that Chinese SOEs need to carry out more effective strategic IS planning in the long-term, as well as to make a further attempt to implement enterprise applications (i.e. CRM) to enhance their core competitiveness.

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