The effect of CRM use on internal sales management control: An alternative mechanism to realize CRM benefits

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ABSTRACT

This case study investigates how effective internal sales management control is achieved through CRM use and why enhanced control is beneficial to firms, which are largely overlooked by the extant literature. The main theoretical lens is organizational control theories. Results show that CRM use strengthened formal control and informal control simultaneously. Formal control was significantly boosted by enhanced outcome measurability and process visibility of sales work. CRM use also facilitated informal control, by serving as the carrier of new institutional processes and sales philosophy, which bolstered clan control, and by functioning as tools for self-control.

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1. Introduction

Over the past decade, the application of customer relationship management (CRM) has experienced rapid growth. Between 2000 and 2005, organizations spent 220 billion dollars implementing CRM solutions [35], to improve customer services, satisfaction, and retention [40,46]. However, prior research has produced equivocal results on the effects of CRM on firm performance. Although some studies (e.g., [9,40]) have provided evidence of positive relationship between CRM and performance, many academic and business reports have shown disappointing results. For example, Hendricks et al. [22] analyzed a sample of 80 announcements of CRM implementations, and found insignificant improvement on long-term stock price and profitability. Moreover, the Gartner Group has found that approximately 70% of CRM projects resulted in either losses or no bottom-line improvements in firm performance [45].

To account for the apparent discrepancy between the popularity of CRM implementation and lack of consistent research findings on CRM effectiveness, there is a need to take a closer look at how CRM is used to realize its full potential benefits. Indeed, researchers have recognized a lack of understanding of the mechanisms through which CRM affects firm performance (e.g., [6,18,45]). There is a need for research that specifically examines the mechanisms for achieving CRM benefits, and such qualitative studies in particular.

Furthermore, prior conceptualization of CRM impact on firm performance tends to be narrow, primarily focused on financial terms and customer-related benefits (e.g., [27,29,40,46]). In contrast, far less attention has been paid to operation-related benefits [50]. Similar to other enterprise systems (ESs) such as enterprise resource planning (ERP), CRM has multiple impacts on a firm. In particular, a CRM system involves the specification of standard and replicable business processes, and the automation of these processes [50]. The centralization of information, standardization of processes, and transparency of employees' work can satisfy the need of firms for better controlling internal processes. The control effect of CRM is important because CRM is usually used in departments with external boundary-spanning responsibilities, such as sales, marketing, and customer services. Employees in such sales-related departments typically spend most of their time in the field. This makes the job of monitoring and controlling these employees difficult [43]. Therefore, it is important for management to improve their control over the sales function. However, such control-related CRM benefits have been neglected in prior research. As far as we know, no prior research has directly addressed control-related CRM usage.

In this exploratory case study, we observed an interesting CRM application in a small provider of system integration services. The firm's original purpose was to use the CRM to better manage client information and make sure it stayed in the firm rather than being private to the sales representatives. However, overtime CRM use

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produced a much broader range of operational benefits including institutionalizing new procedures. For example, behaviors of sales representatives became more closely aligned with the expectation of the management. Managers could monitor the progress of sales continuous. As a result, not only the outcome but also the process of sales became visible to management. Processes embedded in the CRM provided a more structured approach to conducting sales by guiding sales representatives' work and making them more effective.

This case offers a vantage point to study CRM impact on internal processes, and to broaden understanding of CRM effect on firm performance. Since the extant literature of CRM impact offers no comprehensive theoretical explanation for what we have observed, there is a need to develop a theoretical perspective to account for the observed phenomenon. Therefore, drawing upon organizational control theories, this case study sets out to investigate: (1) *how is effective sales management control achieved through CRM use, and* (2) *why is control-related CRM usage beneficial?* "Effective" in research question (1) refers to either enabling a previously non-existent control mechanism, or substantially strengthening an existing one, for achieving management objectives. The meaning of "beneficial" in research question (2) is twofold, instrumental to achieving management objectives at the organization level, and enhancing employee performance and capability development at the individual level.

The rest of this paper is organized as follows. First, we review organizational control theories to orient our research. We then describe the case context and research methods. Next, results of data analysis are presented. Lastly, we discuss the key findings and implications.

2. Theoretical background

To shed new light on the operational benefits of CRM use and broaden the conceptualization of CRM impact, this section reviews organizational control theories [15,25,42]. They have been widely adopted by research in sales and marketing (e.g., [11]), information systems (IS) development (e.g., [31,49,51]), information technology (IT) outsourcing (e.g., [7,47]), and knowledge management (e.g., [53]).

2.1. Formal and informal controls

Consistent with prior studies, this research views control in a behavioral sense (e.g., [25,31,47]), as formal and informal processes of negotiation between organizational members (e.g., managers and employees), in which various strategies are developed to produce desired outcomes [10]. In general, there are two major *modes* of control, formal control and informal control [15,25].

Through formal control, management influences employees' behavior and activities by establishing a set of procedures to monitor, direct, evaluate, and reward them. Formal control can be further classified into two specific modes, outcome control and behavior control. The former focuses on whether interim or final outcomes are achieved without consideration to the process. Management sets performance metrics, evaluates the results and rewards employees for meeting those goals [3,11,25]. Common mechanisms for outcome control include explicitly specifying desired outcomes and then evaluating employees' performance based on the specified standards. Examples of these mechanisms for sales management include bottom-line performance results such as sales volume, gross margin, and sales expense [1,2].

In contrast, the focus of behavior control is on the means to achieve desired ends. Management prescribes specific rules and procedures, then monitors and evaluates employees' behavior, and

lastly rewards them based on the extent to which stated procedures have been followed [3,11,47]. Mechanisms for behavior control include explicitly defined rules and procedures, and information systems to help monitor and evaluate whether employees' behavior meets the specified rules and procedures. Behavior control on salespeople can be achieved via constant monitoring, frequent contact, and more subjective performance metrics such as salespeople's efforts, activities, and the like [2].

In general, informal controls emphasize social or "people" factors [32,42], including clan control and self-control, to reduce divergent preferences between organizational members. There are two specific modes. First, clan control is implemented when management promulgates shared experiences, values, and beliefs within a group of individuals [32]. Through clan control, management can "minimize the differences between controller's and controllee's preferences" ([7], p. 293) so that members will exhibit strong commitment to the clan. Clan control mechanisms include hiring and training practices, peer pressure, and team building activities [31,49]. Second, self-control aims to ensure that employees are intrinsically motivated and set task goals and procedures for their own behavior [7]. Examples of self-control mechanisms include self-set goals, self-monitoring, and self-rewarding [30].

2.2. Antecedents of organizational controls

Prior theories tend to feature the choice of one particular mode of control over others, instead of simultaneous exercise of a full range of control. It has been suggested that the choice of control depends upon task characteristics, and the controller's knowledge of the transformation process [7,15,30,42]. More specifically, task characteristics include behavior observability and outcome measurability. If management has ability to specify and track desired outcomes, outcome control is more likely to be exercised to evaluate employees' task performance [7,15,30]. If the appropriate behaviors of a task can be specified in advance and management has the ability to gather information about employees' behavior, behavior control is more likely to be used to ensure that the prescribed task process is followed. A manager who clearly knows the transformation process will be confident to exercise behavior control and specify the rules and procedures that employees should follow [7,30,33]. When a task is complex and the standards are difficult to set, management may exercise clan control or stimulate employees to perform self-control.

2.3. Organizational controls enabled by enterprise systems

To get a better understanding of CRM-enabled sales management control, it could be helpful to briefly review how other ES (especially ERP) influences organizational control. As ES has the potential to facilitate control through improved visibility of operations and standardized business processes, ES-enabled control has drawn attention of prior research (e.g., [4,17,24,41,48]). Several mechanisms have been identified to play important roles in realizing ES-enabled controls. For example, surveillance associated with ES use affords "panoptic visibility" for management [17,28,48], which is also referred to as the "informating" power of IT [56]. ES use is also seen as a disciplinary technology [14]. As carriers of organizational processes, rules and regulations [21], ES embeds institutional elements through the design and implementation [54]. In other words, assumptions about organizational processes and how organizational units should function are built into ES, and thus these assumptions emerge from ES use and constrain the behavior of organizational members [41].

Therefore, it makes sense to examine the effect of CRM use on control over employees. However, in contrast to prior studies of

ES-enabled control, this research aims to understand the benefits of control-related CRM usage and "escape the dualism of 'control' and 'resistance'" ([13], p. 606). Organizational control theories have been chosen as the theoretical lens. They inform this study by sensitizing our attention to issues of theoretical importance. More specifically, they call for attention to a variety of control mechanisms, which will be identified and analyzed in relation to operational benefits.

3. Research methods

We employed the case study method, which fits this research well for two reasons. First, we focus on understanding how control-related CRM usage was exercised and why it was beneficial, and the case study method is ideally suitable for "how" or "why" questions [55]. Second, since there is little prior research on control-related CRM usage, the case study method is appropriate [16].

3.1. Research setting

Nodes Company (hereinafter referred to as Nodes) was a small Chinese IT firm founded in 1996. It provided wireless network products and total solutions for organizations, and its business covered distribution of hardware products, system integration, and software development. Along with the wide-spread adoption of wireless network technology in China, Nodes' sales increased rapidly at an annual rate of 50% from 1999 to 2004. Its size also enlarged from about 10 employees in 1999 to more than 60. In addition to the headquarters in Beijing, three regional offices were set up in other major cities.

In its first few years of operation, Nodes' business development mainly relied on its three founders, who were the bosses inside the firm and sales representatives and engineers outside the firm. They personally undertook many tasks and possessed all the information such as sales data and customer data. The founders essentially knew every project and every customer. As Nodes expanded, the founders turned their attention to managerial work. Management problems gradually emerged. For example, Nodes' sales representatives used Excel spreadsheets, and paper and pens to record customer information. These data were scattered in sales representatives' personal computers and notebooks. They gradually became personal assets rather than organizational resources, which resulted in the loss of customer resources, soured customer relationships, and poor services. Moreover, Nodes' executives lacked means to monitor those who worked in out-of-town offices.

To deal with these problems, Nodes decided to implement a CRM system at the end of 2005. After several months of implementation and three years' actual use, the CRM system proved to be effective in improving not only Nodes' customer service but also internal management. In fact, many organizational processes were moved onto the CRM platform, and all employees were required to document each customer-related activity in the CRM as soon as they got a chance. The use and impact of the CRM were much broader than initially expected, including significantly strengthened sales management control in particular.

This research setting qualified as a revelatory case to study according to Yin [55]. First, the extensive control-related usage of CRM was quite unusual, and both Nodes' management and employees believed that CRM-enabled sales management control played an important role in sales performance improvement. This was likely because Nodes lacked well defined work processes prior to the CRM implementation, as described next, which offered a vantage point to observe CRM usage for internal operational benefits that was not documented in prior studies. Second, a distinct feature of the Nodes case was that CRM-enabled control hit all four modes of control, i.e., outcome, behavior, clan and self control, simultaneously, which departed from the organizational control theories. These features offered an ideal opportunity for us to investigate the role of CRM for sales management control.

3.2. Project background

The control-related CRM usage in Nodes was influenced by the organizational context prior to its implementation, including its inefficient information management, small firm size, and lack of process management and training on sales. These contextual factors made control-related CRM usage particularly salient and beneficial. Therefore, it could be worthwhile to take a closer look at them.

First, Nodes' primitive approach to managing sales information was the primary reason to implement CRM. It was inconvenient for sales representatives to update information timely using Excel and paper to manage customer data, and do it in a systematic manner. More importantly, it was difficult to make use of such data to facilitate work. A sales manager remarked:

> "It's troublesome in Excel to calculate data or trace information. When you have more and more customers, it's difficult to find things [in Excel]. Customer information is also changing as time goes. As data in Excel accumulates, you are prone to miss something."

Another sales manager added, "*documents could not be shared conveniently. It was really troublesome to ask for documents from each other all day long.*" Therefore, the general manager initiated the CRM project personally, and picked the vice general manager for sales to be the project manager.

Second, despite its rapid growth over the past few years, Nodes was a small firm, operating as a product agent. According to the vice general manager, Nodes "*had neither core products nor unique services,*" and "*its core competence was its customers and experience.*" What Nodes' executives worried most about was the loss of customers and experience due to personnel turnover. Therefore, when Nodes decided to implement CRM, their first consideration was how to use such a tool to retain customers and work experience.

Third, the management maturity and skill level of Nodes' sales representatives were rather low in general because of the lack of training and experience. There were two main sources of sales representatives. One was fresh college graduates, and the other was engineers who were rotated from technical or service positions. The vice general manager explained:

> "Many of our sales reps come from our pre-sales engineers. Those who lack professional trainings may struggle at some stages during the sales process. For example, what should I do after I have called customers? How should I persuade them? They have no ideas about that."

Therefore, Nodes hoped to better monitor, evaluate, and direct sales representatives' work. The processes embedded in CRM provided a structured process for sales representatives, based on industry "best practices."

3.3. Data collection

We collected data from two main sources, archival documents and in-depth interviews. Before the interviews, we read an internal document written by the vice general manager of Nodes, who was the leader of the CRM project. The document was about 50,000 words long, revealing details of Nodes' history, the pre-existing management problems, the implementation process of the CRM

project, and the impact of CRM on Nodes. By reading through the document repeatedly and talking with the vice general manager, we gained understanding of the CRM application. Furthermore, this document functioned as an independent data source for us to compare and corroborate with the interview data.

Two rounds of in-depth interviews were conducted in 2009. We interviewed eight informants, including the general manager, the vice general manager, two sales managers and four sales representatives, who were all CRM users. Each interview lasted between one hour and one hour and a half. The interviews were conducted by both authors together. One of them followed a semi-structured interview template [55], and the other raised related questions aimed at exploring incidental findings. Interviewers encouraged free reporting, and there was no forced answer if the informants had no recollection. The interviews were recorded and transcribed for analysis, resulting in a total of 137 pages of single-spaced text of transcripts, comprising about 140,000 words.

The interview protocol consisted of three parts. First, we inquired about the personal background of the informants. Then, we asked the informants about their CRM-related work experience such as how they did their daily work and how they interacted with customers, executives, or peers. Lastly, we asked reflective questions, such as *what roles the CRM played in the sales processes*, or *what functions of the CRM were most helpful in their work*. Although high cognitive capabilities might be needed to answer these reflective questions, the informants were keenly interested in them and gave insightful comments.

In our research, data collection and data analysis overlapped as prescribed for case studies [16,55]. After each interview, the authors discussed their key discoveries immediately, and then read through the transcripts carefully to adjust questions for the next one. Between both rounds of interviews, we wrote up a teaching case and emailed it to informants to seek feedback, and sharpen our understanding. After the second round of interviews, we compared the results using an iterative data analysis approach, and found that incremental learning was minimal. Therefore, we considered that the saturation point had reached, and decided to end data collection [16].

3.4. Data analysis

Our data analysis was largely based on the comparative method, more specifically, the "before-and-after" research design [19,38]. By dividing a single longitudinal case into two sub-cases, before and after an event of interest, this method permits researchers to achieve controlled comparison within the sequential development of the case. Such a research design provides the opportunity to analyze how and why pivotal event affects the changes under study, and the impact of the context. Accordingly, we divided the case into two stages of pre- and post-CRM implementation. Four steps of data analysis were undertaken, as described below.

Step 1: Identifying sales management control mechanisms of pre- and post-CRM implementation respectively. Both authors reviewed the archival document and each interview transcript several times to grasp its meaning. The first author marked off all the transcripts related to sales control activities before and after CRM implementation, which helped us divide the data into meaningful chunks for analysis. Our coding strategy was between the a priori and inductive approaches [39]. Organizational control theories provided a general accounting scheme for coding. They were not CRM usage specific, but pointed to the general domains in which coding could be developed inductively. This approach was consistent with Kirsch [31] and Choudhury and Sabherwal [7]. The first author coded the transcribed notes sentence by sentence based on the

definition and classification of the four modes of control and established the initial coding result.

For example, evidence on the evaluation of sales representatives' performance through interim results of each sales process stage captured in the CRM were coded as outcome control enabled by CRM use. Similarly, if managers monitored sales representatives' compliance with sales procedures, through accessing "real-time CRM records," this would be coded as behavior control enabled by CRM. Furthermore, the use of CRM to configure "work schedules" by sales representatives for prioritizing daily tasks would be coded as self-control.

The second author cross-checked the coding results and discussed with the first author till they reached agreement. We also used the triangulation strategy [55], retaining only the coding result that was supported by at least three informants (or two informants and the archival document). After all the data were coded, we re-examined the archival document and each transcript to ensure that we had not omitted any valuable content.

Step 2: Identifying the effect of CRM on the evolution of sales management control mechanisms. We compared the four modes of control, i.e., outcome, behavior, clan, and self control, and corresponding control mechanisms, and then identified their similarities and differences. Following the approach of Cardinal et al. [5], we identified the evolution of control mechanisms as to (1) whether a new control mechanism was established, (2) whether a previous control mechanism was discarded, and (3) whether a pervious control mechanism was retained after CRM implementation but was augmented or lessened in intensity.

Step 3: Identifying the effect of control-related CRM usage on sales representatives. As one of our research objectives was to explain why control-related CRM usage was beneficial, we explored its impact on sales representatives. We found evidence from two sources of data that employees' professional capabilities had been improved. One source was sales representatives' own perception and another was their manager's evaluation. We extracted and triangulated related transcribed notes and found that it involved the following aspects, i.e., the improvement of their capabilities to perform routine tasks and non-routine tasks, and to prioritize various tasks to be more effective. We further related these aspects to CRM-enabled control mechanisms identified at steps 1 and 2 to infer their causal relationships.

Step 4: Drawing conclusions. We interpreted the relationships between the identified control mechanisms, and the impact of control-related CRM usage on sales representatives.

4. Results

This section presents the results of data analysis. The focus is on a comparison before and after CRM implementation in terms of how CRM enabled or strengthened each of the four modes of control, and the impact on the effectiveness of sales representatives.

4.1. Outcome control

Prior to CRM. Previously outcome control was the primary mode of control in place before CRM use. Management set annual performance targets for sales representatives, such as the number of contracts signed and total contract value. Sales representatives were also required to submit monthly activity reports for performance evaluation. However, management felt that these mechanisms were not effective enough, because it was difficult to get information on sales work in great detail and in a timely manner for necessary management intervention.

CRM-enabled Control. As a byproduct of CRM use, performance of sales representatives was not only measured by the number of

contracts signed, but also decomposed into interim results of every stage throughout the sales process, such as the amount of sales leads created and sales opportunities upgraded. These interim results were adopted as metrics to assess employees' performance. In addition, with the help of CRM records, not only could managers have a general understanding but also quantitative judgment on employees' work status and project progression. Therefore, CRM use significantly strengthened performance management by improving the quality and levels of detail of performance data, as the general manager reflected:

"After the application of such a platform [CRM], we can quantify many more things when we evaluate sales representatives' performance. In every stage, such as every month, we require them to create a certain number of new sales leads, or we will examine the upgrading status of sales opportunities. If they encounter any difficulties, managers can trace related data from the CRM, which is very useful for our administration."

Clearly, CRM use strengthened outcome control by enhancing the measurability of sale representatives' work. Because the interim results and details were kept in the CRM system, management could assess sale representatives' performance more precisely and timely, such as the number of calls to customers. In particular, the frequency of sales representatives' interim results evaluation was shortened from monthly to continuously.

4.2. Behavior control

Prior to CRM. There was no formal mechanism to specify or enforce processes and procedures for sales. In fact, Nodes did not have a clearly espoused sales philosophy or structured process. There was a great deal of idiosyncrasy and inconsistency in sales activities. Management relied upon weekly meetings and direct observations to collect information about sales representatives' behaviors. At weekly meetings, sales representatives reported their work based on Excel spreadsheets, and managers gave them feedback. Managers also participated in sales representatives' field work, which afforded opportunities to observe sales behavior directly. However, these mechanisms were inadequate for propagating and enforcing the "best practices" of sales. For example, the amount of information and the level of detail maintained in Excel spreadsheets depended on each sales representative's personal preference, intuition, ability and self-consciousness. Important customer and project information was sometimes omitted by inexperienced sales representatives.

CRM-enabled Control. With the CRM, numerous control activities were enabled in relation to the sales process. Sales representatives were required to follow the procedures embedded in the CRM to advance a project. Each sales project was divided into several stages in sequence, which were prescribed as the standard process. Based on the CRM, sales representatives started from sales leads, then identified sales opportunities in them, and pursued these opportunities till contracts were signed. In essence, CRM institutionalized the routines of sales work, as accounted by an informant: "*Now the sales work [in CRM] is just like software installation. Next step, next step, you proceed following the next step and it will be OK.*" A sales representative commented:

"Now some of the initial business processes are regulated. Interaction with customers, for example, is divided into several sub-stages. We start with the initial contact stage, then the solution design stage, quotation stage, customers' evaluation stage, contract stage, and so on. We deal with customers by multiple stages. The current status of each customer is reflected in the CRM clearly. We also take notes after each stage, which provide lots of references for our business."

Nodes recognized the importance of quality, timeliness, and completeness of data in the CRM for process tracing. Therefore, all employees were required to update customer information and input their "actions" into the CRM system as soon as they gained access to the Internet. Management monitored sales representatives' behaviors by looking over their CRM records. A department manager said, for example, she usually logged on to her CRM account and stayed online when she was at work. Besides her own work, she also kept an eye on the newly updated records of her subordinates frequently. As a result, it became difficult to hide things from her intentionally or unintentionally. Another sales manager said:

"I don't watch them [subordinates' CRM records] all the time. I need to do my own work as well. I'd, for example, take a look at them every one or two hours. . . . Sometimes I choose a specific time to do it, such as after finishing my work in the evening, or before starting work in the morning. During the day, I usually do it according to my schedule."

"All your work is on it [CRM]," a sales manager explained. "Every day's work is on it [CRM]. . . . The information such as customer' requirements and your solutions, the details you communicate with them and the documents you provide to them can be seen very clearly. We list all of such information into CRM."

The behavior control function of the weekly meetings was improved by CRM use. The meetings were conducted with the CRM system. Sales representatives used a data projector to display their CRM records on a big screen to report their account activities. Managers provided their evaluation and feedback.

In the event that management found an inconsistency in employees' actual work processes or deviation from specified procedures, they might intervene through the CRM system. Such intervention occurred in two forms, directing or assisting sales representatives, and coordinating their work. When sales representatives came across problems, managers had the necessary information to know what kind of help was needed in a timely manner, such as helping differentiate between customers based on their importance, or providing advice to advance a project, at key stages. A service manager explained how she helped her subordinates to be more effective:

"I can help them with a certain type of work. I know what kind of help they need and what kind of information they want through the CRM. Sometimes they are not willing to communicate with me face-to-face too frequently, and maybe they can solve problems by themselves, but they would need much more time than under my assistance."

In sum, CRM strengthened behavior control in the following two ways. First, compared to the absence of structured sales processes prior to the CRM, a new sales philosophy and its processes configured into the CRM package were adopted for sales representatives to follow. Second, CRM enhanced the visibility of the sale representatives' work. Management could monitor their behavior through CRM records continuously, with much greater details. Interestingly, CRM-enabled behavior control was beneficial to sale representatives for enhancing their effectiveness and capability. The built-in sales process and tools in the CRM, and timely intervention by management provided guidance for them to conduct sales more methodically than before. These CRM-enabled mechanisms were particularly helpful for new employees.

4.3. Clan control

Prior to CRM. Clan control was exerted primarily through training and oral communication. Previously, there was little

formal training in place. New sales representatives were trained largely through learning-by-doing. They were given a list of prospective customers, and asked to start their jobs by contacting customers, although managers made known requirements and procedures such as the frequency of customer visits. New sales representatives were expected to get familiar with the business and improve their sales skills through practice. They relied upon their intuition, personality, and personal experience to conduct their tasks.

CRM-enabled Control. The processes, procedures, and related concepts embedded in CRM acted as training tools for employees. The CRM system brought into Nodes a structured process and a new sales philosophy operationalized in concepts such as "sales actions," "sales leads," and "sales opportunities." Through the application of CRM, not only were these concepts widely adopted as standard of practice, but they also became terminologies of daily communication and work. The general manager reflected:

"We didn't have such concepts as 'actions' and notions about sales process. . . . Before the implementation of CRM, we might promote projects only by calling and visiting customers. Now we start with sales leads, and then discover more opportunities. One customer may have several opportunities, and we upgrade them step by step following these concepts."

Another concept that CRM introduced was how to deal with customers in business, or the notion of "relationship marketing." Based on the built-in functions of CRM, sales representatives collected key customer contacts' personal information, such as their hobbies, family and children. Such information was used to strengthen relationships in informal communication and interactions. A sales representative indicated:

"You can gather and store information such as the customer's hobbies and family background into the CRM. Maybe you will contact the customer half a year later. Then you know his preference, for example, he enjoys smoking, drinking, or basketball; or you can buy gifts for his kid. Satisfying customers' desire can help us carry out our business."

Furthermore, with the CRM, the weekly sales meetings became more effective for employees' sharing of ideas through brainstorming. With relevant information in their CRM accounts projected on the screen, the department manager and other team members discussed and analyzed what to do in the next step. Through such brainstorming mechanisms, Nodes strengthened the atmosphere of mutual advice-giving. At the same time, employees could also feel peer pressure. If the CRM records of one's colleagues were in great detail and full of new sales leads and opportunities, while one's own records were thin, this individual would be under peer pressure to work harder to exhibit better performance in the next weekly meeting.

CRM also facilitated coordination among employees. Sometimes different departments in Nodes or different sales representatives in a department dealt with the same customers. In this case, sales opportunities might come from not only the sales representatives, but also the service representatives, engineers, or employees of other departments. The sharing of important information was facilitated among employees using CRM to promote joint sales projects. Through the CRM, Nodes also unified and enforced business rules, such as payment terms and service response time, to avoid customers' negative impression arising from inconsistent business practices in different departments.

In sum, CRM strengthened clan control by serving as the carrier of a new institutionalized sales philosophy, which was instrumental to minimizing undesirable performance variance among managers, senior sales representatives, and new employees. Such institutionalization was further reinforced at weekly meetings by the extensive usage of CRM and emphasis on CRM-enabled concepts and processes. Moreover, CRM also enhanced the coordination with each other among individuals and organizational units. Disruption to service by employee turnover or sick-leaves was also alleviated.

Sales representatives recognized the benefits of CRM-enabled information sharing and team coordination, which gradually became part of their work routine. To the sales representatives, CRM-enabled clan control was beneficial, too, for enhancing their effectiveness and capability. In particular, they were much better equipped than before to deal with non-routine work, to respond to emergency quickly, and to follow-through uncompleted tasks, because of improved information sharing through the CRM.

4.4. Self-control

Prior to CRM. Sales activities used to be largely individual and personal, beyond the sight of management. Therefore, sales representatives needed a high level of self-discipline and time management. However, it was difficult to prioritize work and optimize time management, as there were a large number of contacts to deal with, up to over two thousand contacts for some senior sales representatives. A sales representative gave an embarrassing example of a forgotten client request:

"Once I spent three and a half days of a week working in the field. On the previous Friday a customer made an order, requesting delivery in seven days. That week passed by quickly. In the following week, as soon as my sales assistant and I arrived at that customer's office, she reminded me suddenly that it was that day to deliver the equipment. I was getting into a muddle right away. . . ."

CRM-enabled Control. CRM provided an effective tool for sales representatives to enable self-control through the built-in work schedule and the knowledge base functions. Using CRM, employees could arrange their work schedule based on an explicit differentiation of customers and "important task versus urgent task." More specifically, they were asked to arrange their timetable in relation to customers and tasks with varying levels of importance and urgency, so as to concentrate on the high-yield customers and tasks. After explicitly classifying customers and work in the CRM, employees first finished tasks that were both important and urgent, such as tender bidding and service requests. Then they focused on tasks that were important but not urgent. Besides work scheduling, employees also set task reminders in the CRM, alerting themselves about the need to complete planned tasks before the deadline. A sales representative explained about the beneficial influence of CRM on his work:

"When I log on to the CRM, I'd examine my 'actions' to see what I should do today. I'd first finish important tasks. Then I'd do things to maintain relationships with customers. CRM can rank customers according to their importance. I may maintain relationships with important customers once a week and with ordinary customers once a month. All my work is carried out according to the CRM."

Furthermore, employees could learn about the experiences of their predecessors and colleagues through the knowledge management function of CRM. This was especially valuable for new staff. When employees encountered problems or puzzles in their work, they would first look up related experience summary articles in the knowledge base. An employee added:

"In my department, there are several senior colleagues. If I were a new member, they'd know much more than me. There are lots of their articles in the CRM about troubleshooting, which are summaries of their experience. I can log in to read them anytime, and then such knowledge gets accumulated in my mind gradually. When I come across a problem afterward that is mentioned in the troubleshooting database, I will know how to solve it and respond quickly. I needn't ask somebody else for help and solve it by myself."

In sum, the CRM served as an effective tool for self-control. Without the CRM, although sales representatives might have been motivated to exercise self-control, they lacked necessary support and tools. Armed with CRM, sales representatives could better arrange their work and improve their professional skills.

5. Discussion

5.1. Key findings

In contrast to the relatively narrow focus on customer-related impact in prior research, this study addresses how effective sales management control is achieved through CRM, and why control-related CRM usage is beneficial. Several interesting results have been found (as summarized in Table 1). First, the strengthening of formal controls is the most salient feature of CRM usage in this case. Through CRM use, Nodes decomposed performance indicators for sales representatives, which constituted outcome control. As a result, sales representatives' activities were brought under closer monitoring, and timely intervention became feasible. Moreover, CRM use established a structured sales process with specific rules and procedures, whose adherence by sales representatives was made transparent by records in the CRM. These

CRM-enabled behavior control mechanisms were particularly salient and effective.

Moreover, through CRM use, Nodes also significantly boosted informal control over sales representatives. Clan control was achieved through work coordination by information sharing and brainstorming based on the CRM, and more importantly through institutionalizing a new sales philosophy including concepts and the notion of relationship marketing. CRM use aligned the ways managers and team members behaved, while promoting common beliefs among employees. CRM use also reinforced self-control by assisting employees in prioritizing tasks and job scheduling.

Interestingly, the strengthened control was beneficial to not only management but also employees. Through the CRM, sales representatives deepened their understanding of sales work, and improved their capabilities in performing both routine and non-routine tasks. They also gained easy access to their colleagues and predecessors' experiences accumulated in the CRM, which improved both the quality of work in terms of consistency and uniformity in customer experience.

5.2. The effect of the context

To fully account for the salient and highly effective CRM use for management control in this study, it is important to consider the organizational and social contexts, which could be regarded as the boundaries of our findings and theoretical explanation. In terms of the organizational context, as a small high-tech startup, Nodes clearly had reached a point where it had a tremendous need for more sophisticated management control, as evidenced by its inefficient management of customer information, the absence of a structured sales process and philosophy, and sales representatives' lack of training. Therefore, CRM use inclined toward addressing these problems, i.e., the lack of management maturity and effective

Table 1
Control mechanisms exercised through CRM.

Control mechanism	Role in regulating sales representatives	Effect of CRM
Outcome control		
Interim performance results	Performance of sales reps was not only reflected in the contracts signed, but also decomposed into CRM-enabled interim results of each sales stage.	Enhancing outcome measurability
		• Performance metrics were decomposed into interim results
CRM records	Management evaluated sales reps' performance and work status through CRM records.	• Performance was measured more precisely, timely, and flexibly
Behavior control		
Embedded rules and procedures in CRM	Each sales project was divided into multiple stages through the embedded rules and procedures in CRM, which were prescribed as a structured process.	Serving as the carrier of newly institutionalized sales processes
		• Sales processes were configured into CRM in advance
Continuously updated records	Managers monitored continuously sales reps' activities via records in the CRM.	Enhancing sales process visibility
Weekly meetings	Sales reps were required to demonstrate and report work progress at weekly meetings based on information in the CRM.	• Activities could be monitored in real time
		• Behaviors could be observed more completely
Management interventions	Management directed or assisted sales reps in their work, and coordinated their work through CRM.	
Clan control		
Embedded rules and procedures in CRM	The embedded rules and procedures in CRM introduced a new sales philosophy, especially the notion of relationship marketing.	Serving as the carrier of the new institutional sales philosophy
Weekly meetings	Shared sales ideas were promoted and the atmosphere of mutual advice-giving was strengthened through CRM-enabled weekly meetings.	• The embedded "best practices" set a benchmark for the sales philosophy
		Facilitating information sharing and team coordination
Information sharing	Team members relied on and coordinated with each other more closely through CRM.	
Self-control		
Work schedules	Sales reps arranged their own timetable with variant levels of importance and urgency and set task reminders through CRM-enabled work schedules.	Serving as a more effective self-control tool
Knowledge base	Sales reps learned the experience of their predecessors and colleagues through the knowledge base of CRM.	

control in particular, which are not uncommon in many small and medium sized firms in emerging economies.

It is important to note that the CRM project was initiated by the general manager, which is another key context factor. She personally chose the particular CRM product, and took a hands-on approach to the implementation. Everyone in the firm understood that she was the driving force, and her deputy took charge of the project. Interestingly, the potential for internal process control was not an intended objective. Instead, the CRM project was promoted as a platform for efficiency, sales effectiveness, and elimination of repetitive manual data management chores. In the absence of strong top management backing and commitment, the extent and effectiveness of CRM use might not have been the same.

The CRM usage for strengthening management control could be also associated with the social context. Cultural differences can lead to varying outcomes in IT applications [34]. One of the most commonly cited dimensions of cultural difference is power distance [23]. This case is situated in a high power distance society, in which management has a tendency to maintain decision power and to leave relevant information selectively to subordinates [12,36,37], whereas employees are more inclined to doing what are asked to and leaving the control information and decision making to their managers [44]. Therefore, resistance to management's initiative to strengthen control tends to be weak. Whereas the organizational context created Nodes' need for strengthened management control and a structured process, the social context facilitated the acceptance by the employees. In other words, the organizational context and social contexts explained in part the desirability and feasibility of major benefits of CRM use from strengthening management control.

In fact, the implementation process was not problem-free. However, it is not discussed because it is beyond the scope of this research. The effects of CRM on management control and employee effectiveness were gradually achieved long after the rollout of the CRM. Employees did not understand the potential of CRM initially, nor did they embrace it enthusiastically. For example, some sales representatives thought CRM was a web-based version of Excel, without any understanding of its embedded sales process, as explained by a sales representative:

> "We all felt it was cumbersome to use the system, so we were reluctant to use it. However, once we started using it, we realized it indeed benefited our work, fast, straightforward, and efficient. Therefore, we gradually accepted it, and the use became self-motivated eventually."

5.3. Contributions and implications

This research has several theoretical contributions to literature in both IS and marketing. First, it illustrates an under studied aspect of CRM usage, which extends our understanding of CRM impact on firm performance. More specifically, we focused on CRM use for strengthening sales management control. A key theoretical contribution is that it has identified an important mediator, CRM-enabled control over internal sales process, for research of CRM impact on firm performance. The control implications of CRM use may help account for some of the equivocal findings in prior research on CRM impact. Moreover, findings on control-related benefits of CRM use suggest that the measure of CRM impact on organizations should be broadened. Future measures of CRM impact should incorporate the sales management control dimension. In short, this research adds a key mediator in the relationship between CRM use and firm performance, and a dimension to the conceptualization of CRM impact. Both of these additions constitute theoretical contributions [8].

Second, this study has enriched organizational control theories from the standpoint of CRM use in two ways. On the one hand, although prior research has indicated that formal and informal controls could be combined synergistically to influence the attainment of objectives in an organization, the focus is mostly on the "choice" of one control mode versus others based on task characteristics [20,52]. In this research, we demonstrate that all four modes of control can be simultaneously activated or strengthened by CRM use. On the other hand, by comparing control mechanisms of pre- and post-CRM implementation, we also illustrate how the combination of different modes of control in an organization can evolve from a low control system to a high control system [26]. This highlights that ES can play an important role in the creation and evolution of organizational control, which was rarely discussed in the extant research.

Moreover, this research also contributes to the sales and marketing literature. We deepen the understanding of salesforce control in prior research. Our analysis shows that sales technologies, such as CRM systems, can be effective for exercising sales management control. There is limited research on this issue in both IS and marketing literature. Our study helps clarify how and why such IT-enabled salesforce control can be exercised effectively.

This research has important managerial implications for practice. The most important one is that control-related CRM usage is a key dimension of CRM impact on firm performance, especially in the Chinese business context and likely other emerging economies, in which firms exhibit similar characteristics in management maturity. In case there is a lack of a structured sales process and visibility to management, CRM usage can be expected to be highly beneficial in strengthening management control over sales process. CRM-enabled control could partly compensate insufficient training and low management maturity, and reduce idiosyncrasy and inconsistency in service. In these firms, a CRM system's payback could be significant in sales management control, and comparable to external benefits gained from customer service. Therefore, it is also important to be mindful of the characteristics of the organizational and social context of CRM use.

Moreover, this research highlights the need for organizations to recognize the dual impact of CRM use, both external and internal. Whereas the external gains associated with improved customer relationship management is widely recognized, the internal benefits on management control overall sales process have received relatively little attention. It is, therefore, important for managers to target both customer-related and control-related CRM usage in implementing and using CRM. Firms should aim to align CRM usage with business requirements instead of narrowly focusing on customer-related CRM use, to benefit fully from CRM investment.

5.4. Limitations and future research

There are several limitations in this study, and most of them are related to the contextual factors of the case. First, the single case design and the small size of Nodes may constrain the generalizability of our research findings. Moreover, since this research was conducted in China, an emerging economy in transition in the Asian culture, the findings may be context-specific and different in other cultural contexts. It would be desirable to study the phenomenon and the scope of CRM impact in different cultural contexts. Second, the data analysis was mainly based on interview records, which were retrospective and subject to memory decay. Archival data and direct observation were helpful for understanding the context, but the amount of such observation was not adequate for full triangulation despite our effort. Lastly, restricted by the space limit, we are not able to explore any potential negative

consequences of CRM-enabled management control. In particular, too much control might result in diminishing gains or negative outcome. It may be interesting to conduct another case study to investigate negative aspects of control-related CRM usage in the future. It would also be interesting to evaluate in future research to what extent the findings can help us understand CRM impacts in general. In conclusion, findings of this research offer insight to researchers and managers about control-related CRM usage and how to fully realize CRM benefit to achieve better sales performance.

Acknowledgements

References

[1] E. Anderson, R. Oliver, Perspectives on behavior-based versus outcome-based salesforce control systems, Journal of Marketing 51 (4), 1987, pp. 76–88.

[2] E. Anderson, V. Onyemah, How right should the customer be? Harvard Business Review 84 (7–8), 2006, pp. 59–67.

[3] A. Baldauf, D.W. Cravens, N.F. Piercy, Sales management control research – synthesis and an agenda for future research, Journal of Personal Selling & Sales Management 25 (1), 2005, pp. 7–26.

[4] N. Berente, U. Gal, Y. Yoo, Dressage, control, and enterprise systems: the case of NASA's Full Cost initiative, European Journal of Information Systems 19 (1), 2010, pp. 21–34.

[5] L.B. Cardinal, S.B. Sitkin, C.P. Long, Balancing and rebalancing in the creation and evolution of organizational control, Organization Science 15 (4), 2004, pp. 411–431.

[6] W. Chang, J.E. Park, S. Chaiy, How does CRM technology transform into organizational performance? A mediating role of marketing capability, Journal of Business Research 63 (8), 2010, pp. 849–855.

[7] V. Choudhury, R. Sabherwal, Portfolios of control in outsourced software development projects, Information Systems Research 14 (3), 2003, pp. 291–314.

[8] J.A. Colquitt, C.P. Zapata-Phelan, Trends in theory building and theory testing: a five-decade study of the Academy of Management Journal, Academy of Management Journal 50 (6), 2007, pp. 1281–1303.

[9] T. Coltman, T.M. Devinney, D.F. Midgley, Customer relationship management and firm performance, Journal of Information Technology 26 (3), 2011, pp. 205–219.

[10] R. Coombs, D. Knights, H.C. Willmott, Culture, control and competition: towards a conceptual framework for the study of information technology in organizations, Organization Studies 13 (1), 1992, pp. 51–72.

[11] D.W. Cravens, F.G. Lassk, G.S. Low, G.W. Marshall, W.C. Moncrief, Formal and informal management control combinations in sales organizations: the impact on salesperson consequences, Journal of Business Research 57 (3), 2004, pp. 241–248.

[12] R. Davison, Cultural complications of ERP, Communications of the ACM 45 (7), 2002, pp. 109–111.

[13] R. Delbridge, M. Ezzamel, The strength of difference: contemporary conceptions of control, Organization 12 (5), 2005, pp. 603–618.

[14] B. Doolin, Information technology as disciplinary technology: being critical in interpretive research on information systems, Journal of Information Technology 13 (4), 1998, pp. 301–311.

[15] K. Eisenhardt, Control: organizational and economic approaches, Management Science 31 (2), 1985, pp. 134–149.

[16] K. Eisenhardt, Building theories from case study research, Academy of Management Review 14 (4), 1989, pp. 532–550.

[17] M.B. Elmes, D.M. Strong, O. Volkoff, Panoptic empowerment and reflective conformity in enterprise systems-enabled organizations, Information and Organization 15 (1), 2005, pp. 1–37.

[18] H. Ernst, W.D. Hoyer, M. Krafft, K. Krieger, Customer relationship management and company performance – the mediating role of new product performance, Journal of the Academy of Marketing Science 39 (2), 2011, pp. 290–306.

[19] A.L. George, A. Bennett, Case Studies and Theory Development in the Social Sciences, MIT Press, Cambridge, MA, 2005.

[20] A. Gopal, S. Gosain, The role of organizational controls and boundary spanning in software development outsourcing: implications for project performance, Information Systems Research 21 (4), 2010, pp. 960–982.

[21] S. Gosain, Enterprise information systems as objects and carriers of institutional forces: the new iron cage? Journal of the Association for Information Systems 5 (4), 2004, pp. 151–182.

[22] K. Hendricks, V. Singhal, J. Stratman, The impact of enterprise systems on corporate performance: a study of ERP, SCM, and CRM system implementations, Journal of Operations Management 25 (1), 2007, pp. 65–82.

[23] G. Hofstede, Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations, second ed., Sage Publications, Thousand Oaks, CA, 2001.

[24] I. Ignatiadis, J. Nandhakumar, The impact of enterprise systems on organizational resilience, Journal of Information Technology 22 (1), 2007, pp. 36–43.

[25] B. Jaworski, Toward a theory of marketing control: environmental context, control types, and consequences, Journal of Marketing 52 (3), 1988, pp. 23–39.

[26] B. Jaworski, V. Stathakopoulos, H. Krishnan, Control combinations in marketing: conceptual framework and empirical evidence, Journal of Marketing 57 (1), 1993, pp. 57–69.

[27] B. Karakostas, D. Kardaras, E. Papathanassiou, The state of CRM adoption by the financial services in the UK: an empirical investigation, Information & Management 42 (6), 2005, pp. 853–863.

[28] O.G. Kayas, R. McLean, T. Hines, G.H. Wright, The panoptic gaze: analysing the interaction between enterprise resource planning technology and organisational culture, International Journal of Information Management 28 (6), 2008, pp. 446–452.

[29] J. Kim, J. Choi, W. Qualls, J. Park, The impact of CRM on firm- and relationship-level performance in distribution networks, Communications of the Association for Information Systems 14 (1), 2004, pp. 632–652.

[30] L. Kirsch, The management of complex tasks in organizations: controlling the systems development process, Organization Science 7 (1), 1996, pp. 1–21.

[31] L. Kirsch, Portfolios of control modes and IS project management, Information Systems Research 8 (1), 1997, pp. 215–239.

[32] L.J. Kirsch, D. Ko, M.H. Haney, Investigating the antecedents of team-based clan control: adding social capital as a predictor, Organization Science 21 (2), 2010, pp. 469–489.

[33] M. Krafft, An empirical investigation of the antecedents of sales force control systems, Journal of Marketing 63 (3), 1999, pp. 120–134.

[34] D.E. Leidner, T. Kayworth, A review of culture in information systems research: toward a theory of information technology culture conflict, MIS Quarterly 30 (2), 2006, pp. 357–399.

[35] S. Maklan, S. Knox, J. Peppard, Why CRM fails – and how to fix it, MIT Sloan Management Review 52 (4), 2011, pp. 77–85.

[36] M.G. Martinsons, R.M. Davison, V. Martinsons, How culture influences IT-enabled organizational change and information systems, Communications of the ACM 52 (4), 2009, pp. 118–123.

[37] M.G. Martinsons, R.I. Westwood, Management information systems in the Chinese business culture: an explanatory theory, Information & Management 32 (5), 1997, pp. 215–228.

[38] V.L. McDonald, Before-and-after case study design, in: A.J. Mills, G. Durepos, E. Wiebe (Eds.), Encyclopedia of Case Study Research, Sage Publications, Thousand Oaks, CA, 2009, pp. 51–54.

[39] M.B. Miles, M. Huberman, Qualitative Data Analysis: An Expanded Sourcebook, second ed., Sage Publications, Thousand Oaks, CA, 1994.

[40] S. Mithas, M. Krishnan, C. Fornell, Why do customer relationship management applications affect customer satisfaction? Journal of Marketing 69 (4), 2005, pp. 201–209.

[41] W.J. Orlikowski, Integrated information environment or matrix of control? The contradictory implications of information technology, Accounting, Management & Information Technology 1 (1), 1991, pp. 9–42.

[42] W.G. Ouchi, A conceptual framework for the design of organizational control mechanisms, Management Science 25 (9), 1979, pp. 833–848.

[43] N.G. Panagopoulos, G.J. Avlonitis, Sales force control systems: a review of measurement practices and proposed scale refinements, Journal of Personal Selling & Sales Management 28 (4), 2008, pp. 365–385.

[44] W.A. Randolph, M. Sashkin, Can organizational empowerment work in multinational settings? Academy of Management Executive 16 (1), 2002, pp. 102–115.

[45] M. Reimann, O. Schilke, J.S. Thomas, Customer relationship management and firm performance: the mediating role of business strategy, Journal of the Academy of Marketing Science 38 (3), 2010, pp. 326–346.

[46] K.A. Richards, E. Jones, Customer relationship management: finding value drivers, Industrial Marketing Management 37 (2), 2008, pp. 120–130.

[47] S. Rustagi, W.R. King, L.J. Kirsch, Predictors of formal control usage in IT outsourcing partnerships, Information Systems Research 19 (2), 2008, pp. 126–143.

[48] S.K. Sia, M. Tang, C. Soh, W.F. Boh, Enterprise resource planning (ERP) systems as a technology of power: empowerment or panoptic control? The DATA BASE for Advances in Information Systems 33 (1), 2002, pp. 23–37.

[49] C. Soh, C. Chua, H. Singh, Managing diverse stakeholders in enterprise systems projects: a control portfolio approach, Journal of Information Technology 26 (1), 2010, pp. 16–31.

[50] J.F. Tanner, M. Ahearne, T.W. Leigh, C.H. Mason, W.C. Moncrief, CRM in sales-intensive organizations: a review and future directions, Journal of Personal Selling & Sales Management 25 (2), 2005, pp. 169–180.

[51] A. Tiwana, Systems development ambidexterity: explaining the complementary and substitutive roles of formal and informal controls, Journal of Management Information Systems 27 (2), 2010, pp. 87–126.

[52] A. Tiwana, M. Keil, Control in internal and outsourced software projects, Journal of Management Information Systems 26 (3), 2009–10, pp. 9–44.

[53] K.L. Turner, M.V. Makhija, The role of organizational controls in managing knowledge, Academy of Management Review 31 (1), 2006, pp. 197–217.

[54] O. Volkoff, D.M. Strong, M.B. Elmes, Technological embeddedness and organizational change, Organization Science 18 (5), 2007, pp. 832–848.

[55] R.K. Yin, Case Study Research: Design and Methods, fourth ed., Sage Publications, Thousand Oaks, CA, 2009.

[56] S. Zuboff, In the Age of the Smart Machine, Basic Books, Inc., New York, 1988.