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CONTROLLING THE ABUSE OF GUANXI: A MULTI-CASE STUDY FROM THE PERSPECTIVE OF SUPPLY CHAIN INFORMATION SYSTEMS

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Abstract

While the role of guanxi in organizations has attracted much attention of scholars and the practitioners, few studies have explored how IT influences guanxi and guanxi practice. Based on theories of incomplete contract and governance, an exploratory multi-case study is conducted to understand how IT enables contracts in controlling the negativity of guanxi and strengthening the positivity of guanxi. This paper argues that power alienation resulting from the negativity of guanxi can lead to transformation of organizational social capital into personal social capital. The introduction of IT in organizations enables the regression of contract function and the restoration of the organizational power and organizational social capital. We also show that the negativity of guanxi can be controlled by IT and contracts, while the positivity of guanxi can be enhanced and it plays an indispensable role in dealing with interorganizational business crisis. We develop a causal loop diagram to show the interactive processes among IT, contract, and components of guanxi. Finally, we discuss the implications and limitations of this study as well as future research directions.

Keywords: Guanxi, Information Technology, Contract, Power, Social Capital, Interorganizational Relationship
1 INTRODUCTION

Guanxi generally refers to a social connection based on the common interests and favors (Yang 1994). It represents an informal reciprocal obligation, which includes continuous exchange (Chen 1995). Scholars recognize the dual effects of guanxi in social and business exchanges. Some scholars affirm the positive effects of guanxi on creating business opportunities, lubricating relationships, and improving competitive advantages (e.g., Sheng et al. 2011), while others expose the dark side of guanxi that breeds corruption, breaks rules, creates unfairness, and undermines business profits (e.g., Warren et al. 2004). Guanxi has been found in various aspects of enterprise management in China with many positives and negatives (Park & Luo 2001; Cui et al. 2013; Shou et al. 2014). With the sustained widespread application of information technology in organizations, how will information systems impact guanxi in business? What are the relationships among contract, IT, and guanxi from the governance perspective? And how can firms control the negativity while strengthening the positivity of guanxi with the help of IT and contract? These are the core questions this study attempts to address.

Despite the prominence of guanxi in management literature, little research has been conducted on how to utilize guanxi effectively in two aspects: avoiding the negativity and taking advantage of the positivity. Relational governance research suggests that trust and guanxi can provide the benefits similar to those of contracts in terms of controlling opportunism and facilitating adaptation (Gulati 1995; Uzzi 1997; Choi et al. 2013). However, the negativity of guanxi often makes firms fearful using it, ignoring its positive roles in dealing with interorganizational business crisis. We believe it is necessary to delineate the negativity from the positivity of guanxi from a governance perspective and develop a clear understanding of the relationship among IT, contract and guanxi. Moreover, the extant literature has largely focused only on the one-way impact guanxi on information systems (Chang 2012; Choi et al. 2013), with little research on how the widespread use of information systems in organizations affects the role of guanxi in organizations. This study describes and explains how information systems weaken the negativity of guanxi and meanwhile strengthen the positivity of guanxi in the context of supply chain collaborations.

Based on the result of a multi-case study we show that information systems can weaken the negativity of guanxi and strengthen the positivity of guanxi by extending the scope of monitoring and improving the enforcement of contract provisions. We show that the negativity of guanxi can be controlled by information systems and contract embedded in the governance structures and processes. In addition, we show it is power alienation that promotes the transformation process from organizational social capital to individual social capital. We also show that how the interaction between information systems and contract can prevent power alienation and reverse the transformation process, while interorganizational trust is built and the positivity of guanxi is strengthened. Finally, we discuss the differences in governance values of contract, information systems, and guanxi, as well as challenges in and implications for interorganizational governance. The organization of the rest of paper is as follows. We present the theoretical background and framework in Section 2. We then introduce the case study research methodology in Section 3 and discuss the main findings in Section 4. Afterwards, we discuss theoretical and practical contributions in Section 5 and present a brief conclusion in Section 6.

2 THEORETICAL BACKGROUND AND FRAMEWORK

2.1 The Double-Edged Nature of Guanxi

Guanxi generally refers to a social connection based on common interests and favors (Yang 1994). It represents an informal reciprocal obligation, which includes continuous exchange (Chen 1995). In organizational context, guanxi has been extensively studied. Park and Luo (2001) develop an integrative framework theorizing guanxi and argue that guanxi leads to higher firm performance, but
mostly related to increased sales. Shou et al. (2014) suggest guanxi strengthens the performance of marketing in domestic firms but not that of foreign firms in China. Sheng et al. (2011) find that instead of relying on technology, Chinese firms prefer using guanxi (e.g., political ties) to sustain their competitive advantages. Other studies reveal that guanxi can decrease frictions, encourage investment in future opportunities, and become an excuse to end a business relationship in Chinese style (Yin et al. 2008). However, scholars have argued that the reason why guanxi facilitates firm performance is that interpersonal guanxi can be converted into organizational guanxi (Gu et al. 2008; Yang & Wang, 2011). Organizational guanxi refers to a reciprocal relationship between two or more organizations. The personal guanxi between top management of two firms usually transforms into the organization-level guanxi. In such conversions, the negativity of guanxi remains. For example, it takes time, energy, and money to maintain guanxi. Due to lagged returns of guanxi investment, people or organizations investing in guanxi have to take risks (Standifird & Marshall, 2000). Chen et al. (2004) argue that guanxi has negative effects on organizational trust and lowers employees’ procedural justice. Furthermore, guanxi-based business relationships may burden the managers and push them into the moral dilemma (Su & Littlefield, 2001), which may induce future reciprocal obligations or “renqing debt”, and get the individuals and organizations involved into hot waters down the road (Chris 2000).

Despite the increasing attention to the double-edged nature of guanxi, few studies have explicitly explained how firms can control the negativity of guanxi and meanwhile leverage the positivity of guanxi. Many relevant studies have incomplete analyses by focusing either on promoting ideal guanxi practice or controlling the negative effects of guanxi. For instance, Shou et al. (2011) examine how trusting relationships influence employee behavior and show that trust and goodwill are important factors in promoting ideal behavior in relationships based on guanxi. Nie et al. (2011) show interorganizational trust and relationship-specific investment can enhance and amplify the eroding effect of guanxi on firm performance. Some scholars attempted to provide a more comprehensive understanding of the negativity and positivity of guanxi, but they tend to focus more on what are the positive effects and the negative effects of guanxi on certain organizational properties and less on how to control its side effects and at the same time strengthen its positive effects on the organizational properties (e.g., Shou et al. 2014).

2.2 Information Systems, Contracts, and Guanxi in Corporate Governance

Governance literature proposes three main governance approaches to interorganizational relationships. First, research on governance traditionally emphasizes minimizing opportunistic behaviours (Harrison 2004). This approach relates to third-party enforcement of agreements, such as using contracts (Baker et al. 2002), and formal self-enforcement mechanisms, such as financial collaterals (Cannon et al. 2000). Second, advancements in governance theory recognizes that relational features of governance such as trust and guanxi, can provide benefits similar to those of contractual features of governance in terms of controlling opportunism and facilitating adaptation (Gulati 1995; Uzzi 1997; Choi et al. 2013). This approach relies on informal self-enforcement governance mechanism. The third approach uses a hybrid mechanism including both third-party enforcement and self-enforcement governance and explores ways to complement each other (Xiao & Xie 2010; Ryall & Sampson 2009). Due to limitations of any single governance mechanism, firms tend to explore complementary ways to maximum governance effectiveness.

Contract research attempts to investigate efficiency of various governance forms in these exchange relationships (Baker et al. 2002; Harrison 2004). Many studies suggest that there are no complete, fully contingent, and costless enforceable contracts due to bounded rationality, information asymmetries, and transaction cost (Segal 1999; Williamson 1985). Incomplete contract theory exposes the incompleteness of contract governance and explores fixing incomplete contracts by supplementing with other governance mechanisms, such as IT and guanxi (Xiao & Xie, 2010; Banker et al. 2006). From the governance perspective, information systems have a significant influence on contracts in many aspects. The business practices in supply chain collaboration can be divided into the contractibles and the noncontractibles where the noncontractibles indicate high contracting costs and identification costs such as innovation, responsiveness, and information sharing (Bako & Brynjolfsson...
Interorganizational information systems (IOS) can promote interorganizational interactions and provide extended-scope, long-distance, and low-cost monitoring, which becomes the driving force of outsourcing non-core businesses with contracts (Bakos 1991). With the help of information systems, firms are likely to put more business details in contract design and conduct better coordination in contract management. In addition, some studies show information technology can transform the noncontractible into the contractibles and significantly reduce the costs in negotiating and implementing interorganizational contracts when the degree of interdependence is high (Banker et al. 2006; Zhang and Liu 2006). Other studies have shown that information systems have an impact on contract performance, therefore, the combination of two governance mechanisms can better prevent opportunities behaviors (Srivastava & Teo 2012; Xiao & Xie 2010).

Because of the double-edged nature of guanxi, its positivity, such as flexibility, participation, and solidarity, representing a kind of relational norms, is beneficial for controlling opportunism and facilitating cooperation (Lumineau & Henderson 2012), while its negativity, such as corruption breeding and rules broken, cannot be resolved by contractual governance due to incompleteness of contracts and concealments of guanxi. Although considerable attention has been devoted to exploring the interaction between contractual and relational governance (Carey et al. 2011; Li et al. 2010), limited effort has devoted to figuring out how to control the negativity of guanxi and meanwhile strengthen the positivity. It seems that contractual governance works well with the positivity of guanxi, but is incapable of controlling its negativity.

Extant research has explored the linkage between information systems and guanxi. Marble and Lu (2007) use a case study to argue for the adaptation of enterprise system to support guanxi-based business practices. Chang (2012) explains how Confucian ethics and the guanxi culture affect IS professionals’ ethical dilemmas. Choi et al. (2013) identify four measures for successfully implementing ERP systems, one of which emphasizes the importance of guanxi with both internal staff members and external business partners. However, these studies explore only the one-way influence of guanxi on information systems, with only slight mention of the reverse effect of information systems on guanxi. Throughout the extant literature, the issue of how information systems influence guanxi has not attracted much attention. Ou et al. (2014) propose that computer-mediated communication technologies can mimic traditional interactive face-to-face communications, thus enabling a form of guanxi, namely swift guanxi, in online marketplaces.

In Chinese business practice, guanxi is often regarded as a substitute for contracts because it seems more reliable in dealing with some opportunistic problems. Formal contracts still exist in daily interorganizational business activities. However, their functionality is gradually diminished by some stakeholders with an undeserved reputation in enterprise governance. We strive to show that IT enables contracts to control the negativity of guanxi and promote the positivity of guanxi, and further articulate the distinctions of governance values among IT, contracts and guanxi.

2.3 Social Capital and Power

Nahapiet and Ghoshal (1998) conceptualize social capital as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. In this study, we differentiate personal social capital from organizational social capital. Personal social capital refers to the expected collective or economic benefits derived from the preferential treatment and cooperation between individuals (Nahapiet & Ghoshal 1998). Organizational social capital refers to firms can capture social resources that reflects the social relationships within firms or among their partners (Leana & Van Buren 1999).

Social capital has many different attributes (Putnam 1995), while three clusters are widely used to define the features of social capital: structural dimension, relational dimension, and the cognitive dimension (Nahapiet & Ghoshal 1998; Sherif et al. 2006; Carmona-Lavado et al. 2010). Although these three dimensions of social capital are often analyzed separately, they are highly interrelated. Coleman (1998) argues that one person’s social capital cannot be transferred to another, which is called the untransferability of social capital. We argue that this view only considers the transfer of
social capital at the same level. We propose that transformation of social capital at different levels is possible, such as individual to organization or organization to individual. This is because organization social capital contains two parts: one is the social relational resources at organizational level; the other is the social capital of the interfacing personnel or top-managers. This suggests individual level social capital may influence organizational level social capital (Peng & Luo, 2000; Su et al. 2009).

The relationship between social capital and power is bidirectional as well. Social capital is an essential source of channel power (Zhuang & Zhou 2004). Based on theory of channel power, the economic and production power of the firm lies in the resources it owns and, at the same time, the others’ needs for the resources (Nahapiet & Ghoshal 1998). In resource-based theory, it is impossible for a firm to possess all the resources, and parts of them can be embedded in the social networks (Davies et al. 1995). It is undeniable that power can come from social capital. An alternative view is that power is a type of resource, which should be a part of social capital. This argument emphasizes the resource dimension of power, which is also recognized by some scholars. Weber (1946) proposes that power is a type of social relationship, which represents a structural control of resources. Lin (2001b) suggests that power indicates the individual or the organizational ability of managing and controlling resources. Extant literature on social capital theory argues the significance of social networks because of resources involving social networks. However, few studies have noted the issues of interfacing personnel (like purchaser and salesman) siphoning out the organizational resources to build individual social networks. Because of the difficulties in monitoring personal behaviors, it creates opportunities for the interfacing personnel to build personal guanxi with suppliers (or other partners) utilizing the power they owns due to their positions in organizations. This kind of guanxi is often attached to the interfacing personnel, which indicates that the organizational resources originally developed to establish organizational social capital are being used to build personal social capital. We argue that it is the negativity of guanxi that stimulates power alienation, which in turn creates new negativity of guanxi with future reciprocal exchange relying on personal social networks. And in this vicious circle, organizational resources are often consumed for building personal social capital and guanxi.

2.4 Conceptual Framework

Although the literature demonstrates the diversity of guanxi research, few studies put the negativity and the positivity of guanxi together in an integrative framework and discuss how to control the disadvantages of guanxi and leverage the advantages. Furthermore, another focal point of our study is the governance value distinctions among contracts, information systems, and guanxi. We argue that it is important to clarify the governance functions of the three concepts which are essential to implement effective corporate governance.

This study proposes that it is the incompleteness in drafting and implementing contracts that breeds the negativity of guanxi because it allows for bypassing the rules of the contracts. It extends personal power beyond the authority that the organization mandates, which we define as power alienation in this study. In reality, there are various types of contracts in firms and not all of them are carried out as expected. That is because the negativity of guanxi often replaces some governance function of contracts. This could be due to self-interest of the interfacing personnel or rent-seeking of corporate partners, both of which are motivated to connect with each other and build good personal guanxi. To maintain this guanxi, the interfacing personnel help the partners get benefits with power (such as delaying arrears or concealing events) and the partners pay them back with kickbacks. The erosion of organizational interest equals to the organizational resource loss, and the negativity of guanxi channels the loss to the establishment of personal social capital. When business opportunity occurs, the partners usually get connected with the interfacing personnel instead of connecting via someone who really represents the organization.

Based on the analysis of five cases, we explore the interaction cycles among IT, contract, power, and social capital to understand problems above. We submit that by removing the power of the interfacing individuals, contracts are able to assert their authority and reduce personal power, which in turn helps stop the loss of organizational resource and further weaken the negativity of guanxi. We further argue
that information systems can enable the contracting partners to effectively monitor the business connections between the interfacing individuals and the partners with lower cost, and therefore transforming the guanxi-based transactions to contract-based transactions, which presents a regression to contract function.

Equally important is that this IT-induced regression to contract function further strengthens the positivity of guanxi mainly in two ways. The first is that the IT-induced regression nourishes greater organizational level of trust (e.g., IS record accurate cooperation information like delivery time and quality information) which promotes the positivity of guanxi, and help the organization accumulate social capital. Second, the interactions between information systems and contracts restrain corruption (e.g., gifts and bribery) and uncertainty (e.g., oral commitment), which lowers the risks and strengthens business process, and therefore increases organizational social capital and strengthens the positivity of guanxi.

In summary, the interactions among IT, contract, personal and organizational power, personal and organizational social capital constitutes the interaction cycles which weaken the negativity of guanxi and strengthen the positivity of guanxi. This conceptual framework is outlined in Figure1:

![Conceptual Framework](image)

### Figure 1: The Conceptual Framework

#### 3 CASE STUDY DESIGN AND METHODOLOGY

Although the literature that explores information systems, contract, and guanxi is rich and diverse, to the best of our knowledge, there is little analysis about the distinction of the three from the governance value perspective. We are interested in knowing how and why information systems impact contract, how and why their interactions influence guanxi, and how and why the positivity of guanxi can be enhanced while the negativity of guanxi can be reduced by information systems and contract. Case study methodology is prefect to deal with “how” and “why” questions (Yin 1989). Hence, an exploratory case study is appropriate for our purpose (Paré 2004).

We followed three standards in case firm selection. First, the firms should have a considerable amount of partners in their supply chain and use contracts and guanxi at the same time in interorganizational governance. Second, information systems should have been introduced into the supply chain collaboration for some time. Third, we want to focus on firms in different industries, different sizes and different properties to increase the reliability and decrease the sensitivity of our findings (Graebner & Eisenhardt 2004). Based on these criteria, a case study protocol was first developed from an extensive literature review and following the criteria of theoretical sampling (Glaser & Strauss 1967), and five companies were selected as the target of this study from a list of candidate manufacturers in the Southeast region of China. Table 1 shows the detailed profiles of the focal and their suppliers selected. Note that firms A and B are within the same appliances industry but with different properties and firm sizes.
Table 1: Profiles of the Case Firms

In terms of interviewee selection, we wanted to interview about 4-7 individuals in each firm, mainly top executives and mid-level managers in different departments (see Table 2). It was expected that the interfacing personnel who were asked for describing their individuals’ opportunistic behaviors might refuse or avoid revealing relevant information. Hence, we interviewed their top managers and gained considerable amount of information. In all, 27 managers participated in the interviews, resulting in about 25 hours of digital recording which were later transcribed by the research team into a document about 226 pages in Chinese, averaging over 60 minutes for each interviewee. The research team also visited the plants of these firms and took the field notes.

<table>
<thead>
<tr>
<th>Firm</th>
<th>Industry</th>
<th>Property</th>
<th>Annual Sales (million RMB)</th>
<th>Num. of Employees</th>
<th>Num. of Partners (Suppliers&amp;Buyers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Appliances</td>
<td>Publically Traded</td>
<td>19,500</td>
<td>18,500</td>
<td>500 suppliers 5,000 buyers</td>
</tr>
<tr>
<td>B</td>
<td>Appliances</td>
<td>Taiwan-funded Owned</td>
<td>2,200</td>
<td>8,000</td>
<td>750 suppliers 461 buyers</td>
</tr>
<tr>
<td>C</td>
<td>Electronics</td>
<td>Publically Traded</td>
<td>6,600</td>
<td>5,000</td>
<td>350 suppliers 500 buyers</td>
</tr>
<tr>
<td>D</td>
<td>Automobile</td>
<td>Chinese-Japanese Joint Venture</td>
<td>50,000</td>
<td>5,500</td>
<td>154 suppliers 240 buyers</td>
</tr>
<tr>
<td>E</td>
<td>Textile</td>
<td>Privately Owned</td>
<td>5,000</td>
<td>2,000</td>
<td>300 suppliers 12,000 buyers</td>
</tr>
</tbody>
</table>

Table 2: Profiles of the Informants

In the data analysis phase, three researchers first coded the transcripts from two firms, identified core concepts and key statement related to our research questions. By going over the transcripts, we identified the relationships among information systems, contract, and guanxi, and focused on the information systems’ role in corporate governance mechanism. In this stage, the coding results were compared between three researchers and as disagreements occurred, discussions aimed to improve consistency were frequently carried out. In the second stage, based on the open-coding results, three researchers conducted a focus coding in order to form an integrative theorizing framework. For replication and theoretical saturation (Yin 1989), we went back and forth between the extent literatures and the transcripts. Finally, we tested the theorizing framework with the remaining three cases by comparing and contrasting concepts and relations in these cases. If theoretical saturation failed to emerge, the steps above were repeated.

4 MAIN FINDINGS

4.1 Abuse of Guanxi in Interorganizational Relationships
Due to the incompleteness of contracts, the negativity of guanxi allows the interfacing persons to go beyond their authorities for suppliers rent-seeking. In the cases, we find the suppliers give kickbacks to the purchaser in exchange for higher prices or lower quality. Some interviewees explicitly mentioned that because of the good personal guanxi between the supplier and the purchaser, if the supplier has troubles, they prefer to communicate with the purchaser first even though there is business department that is responsible to deal with these issues. This resulted in the elevation of the importance of purchaser in interorganizational processes because they control valuable information about the supplier (e.g., the true capacity and their real needs). The negativity of guanxi is likely to lead to power alienation of the interfacing persons. An IT manager in firm B describes that:

“The extended power of a purchaser can lead to many problems. Before the introduction of ERP, if our staff in production plant found some quality problems, they would give a paper report to the purchaser. But if the purchaser had a good guanxi with the supplier, he would not tell his boss! Instead, he threw this paper away as if nothing happened. In doing so, it may be possible for him to get other benefits from the supplier.”

Abusing guanxi not only refers that the interfacing persons violate rules to help suppliers and seek self-interest, but also refers that guanxi is used when it is unnecessary to be used. As described by the CIO of firm C:

“When it is the time for payment, some suppliers who are suffering cash-flow issues will find the purchaser for help. They have to give some favors to the purchaser who has the power to find excuses to delay the payment. But they do not have to do this. If we believe they really have some problems, according to the rules of our contracts, we can extend the time limit. But they seem to be used to use guanxi or prefer to believe it.”

The negativity of guanxi at individual level stimulates power alienation which in turn creates new negative guanxi with future reciprocal exchange relying on personal social network. The serious problem is that the suppliers actually lost the motivation to build relationship with the focal firm because of the good individual-level guanxi with the interfacing persons. And what's more, the interfacing persons can extract organizational resources of the focal firm for them with personal favors exchanged for lower cost. When business opportunity occurs, the partners tend to connect with the interfacing person first instead of connecting with someone who really represents the focal firm. When this happens, the focal firm has lost its organizational social capital. In our cases, most interviewees confirmed that if a purchaser resigns and goes to another firm or builds his own firm, he or she will take many suppliers away, causing significant damages to the focal firm.

Another negative effect of abusing guanxi is it weakens the positivity of guanxi. If a supplier has a long-term collaboration with the focal, it would have built good guanxi at the organizational level. However, this good organizational-level guanxi cannot prevent the supplier from giving favors to the purchaser for illegitimate purposes at the same time. In our research, we find that abusing guanxi at individual level lowers the organizational trust. Thus, if the supplier suffers major problems and the purchaser cannot help, the focal firm would not help it either. As described by the CIO of firm C:

“In the initial stage of our firm, some suppliers have a good relationship with us. But after a period of time, most of them would lie to us when the payments are due. They would lie to us about having cash-flow problems or something else, and ask for delay of payment over and over again. We rarely believe it.”

These analyses and discussions lead us to propose:

**Proposition 1**: Guanxi abuse at individual level can lead to power alienation of the interfacing personnel, damage the interest of the focal and the partner firms, weaken the positivity of guanxi, and potentially replace parts of governance functions of contracts in the interorganizational relationships.

### 4.2 IT-enabled Regression of Contract Function

Based on the analysis above, the reason for power alienation is the stimulation of negative guanxi
with contract incompleteness. This leads to the transfer from organizational social capital to personal social capital. We argue that information systems enable the regression of the contract function in organizational governance by extending the monitoring scope and improving the enforcement of contracts.

Information systems help extend the monitoring scope of contracts. Innovation, responsiveness, and information sharing are often beyond the contract’s reach due to high monitoring and information searching costs (Banker et al. 2006). With the implementation of IS, firms can embed contract details in the interorganizational business processes and are able to monitor problems as they are occurring in the business processes. Let’s take the example of firm B mentioned in Section 4.1 again to show the influence of IT. As the manager described, the purchaser threw report away and concealed the quality problems of the supplier:

“With the introduction of IT, the staff in production plant who find quality problems of the supplier submit a form in the system to the purchaser, and the purchaser must give a feedback to the supplier. This record is shared in the system and the purchasing manager will see it, other departments will see it as well.”

That means the behavior of the purchaser in dealing with quality problems is monitored and recorded by the information system in place. And this helps the firm manage personal behavior in real time. What’s more, by extending the scope of monitoring, the contract asserts its authority by taking over the purchaser’s power with the help of information systems.

Information systems can also improve the enforcement of contracts with information sharing and information traceability. Information sharing can prevent the purchasers’ opportunistic behaviors who have the comparative advantage of the information asymmetry. As described by the purchasing manager in firm A:

“Before the implementation of the ERP system, purchasers were authorized to decide the purchasing price, quantity, quality etc. If there were no severe discrepancies, their top managers would write ‘I agree’ on thousands of approval forms. Now we know all the details in the system, their price, their capacity and even their reputation in business are open and transparent. And in our system, it is easy to compare all the information among different suppliers. The purchasers cannot cheat anymore.”

On the other hand, information systems help bring the responsibilities out of chaos with information traceability. Information traceability means the business information and other details are recorded and stored in IS, when necessary, these past information can be located easily by information technology. Because there are operating records that stored in IS, the related IS users are unlikely to hide their behaviors. As the CIO of firm B mentioned:

“We all suffered from the blame game in trans-department cooperation. If I have a good guanxi with you, I would immediately deal with your request. In contrast, if I do not like you, I would let you wait for one day or two. Now we introduce the electronic approval. The information about who gives the agreements, when you sign in and how long you take is all traceable in the system. And if we find some hidden problems, we can trace it to specific person or sources.”

These analyses and discussions lead to our next research proposition of the study:

**Proposition 2.** Information systems enable contracts to be more effective in asserting their authority over business transactions and processes with the extended scope of monitoring and improved enforcement of contract through information sharing and information traceability.
4.3 IT, Contracts, Guanxi and Social Capital

In Section 4.1, we argue that abusing guanxi can lead to power alienation of the interfacing personnel, weaken the positivity of guanxi, replace the governance function of contracts, and thus transfer social capital from organization to individuals. In Section 4.2, based on the case evidence, we propose that contracts can more effectively assert its authority by taking over the purchaser’s power with the help of information systems. Following this logic, the reverse process of power alienation starts from blocking the access to the extended power of the interfacing personnel by IT-enabled contracts. Suppliers who leverage negative guanxi for opportunism would lose the motivation to build or maintain guanxi with the interfacing person with vanishing reciprocity. Hence, the negativity of guanxi is weakened. We find significant evidence to support this argument. Because of IT-enable contracts, some of interorganizational relationships that have been guanxi-based can be implemented under contract rules. The CIO of firm C mentioned an example of information systems bringing down the bad-debt levels:

“Generally speaking, we give our buyers a grace period for payment, like three months. When the time is up, some buyers will call the salesman and say: ‘Our clients haven’t given the money to us. We ask for a one-week delay. You can rest assured! Please give permission to delivery.’ The salesman in most cases will issue permission to the request because of the good guanxi between them. As the introduction of online approving system, a buyer must submit an application to the business monitoring department, if it is passed, the application will submit to our department, and we submit it to the financial department, and after acquiring all permissions, the information will be transmitted to the warehouse, and finally it is possible for the buyer to get the products. It is so complicated. But fortunately, after a period of time most of them seems to be used to it and we basically have no bad debt in recent two years.”

Furthermore, blocking the access to the extended power of the interfacing personnel creates conditions for the prevention of organizational resources outflow, which means the resources are back to be deployed to generate organizational social capital instead of personal social capital. The five firms studied confirm the positive influence of IT-enabled contracts on lessening the importance of the interfacing personnel in interorganizational relationships. This compels the partners to follow organizational rules instead of relying on the negative guanxi to deal with daily business. The curtailing of the extended power means controlling the formation of personal social capital based on organizational resources. Hence, organizational power replaces personal power in this process and ensures interorganizational business to operate in a normal state.

Equally important, IT-enabled contracts can further strengthen the positivity of guanxi by promoting organizational trust. Without information systems, the opportunism of the interfacing personnel and the partners can lead to distrust of the focal firm. If the partners really have serious business troubles that are beyond the reach of the interfacing personnel, the focal firm will prefer not to believe or extend its helping hands. According to our analysis based on the cases, information systems help the partners develop a business habit that they have to settle all business and problems following the rules.
embedded in the system. If some of them attempt to leverage guanxi for personal benefits, they will not be able to avoid the high cost. Hence, in this circumstance, if the partner still insists on bypassing the rules and hoping to use guanxi for settling problems, the focal firm is likely to believe them and help them, an indication that information systems can promote the organizational trust and further strengthen the positivity of guanxi when the emergency occurs. As described by the CIO of firm C:

“We can see the details in our information systems, and we know the supplier. He will not ask for our support for small problems and we can see its delivery time and quality records or other information. He has a good reputation. So if one day he find us and say ’we have a problem and we need your help’, we will believe him.”

And the same view was mentioned by the CIO of firm B:

“We will see his reputation and how long we have been doing business with him in our system. We are willing to cooperate to solve his problems.”

Based on the analysis above, we develop a causal loop diagram to describe the interactive processes among IT, contract, and elements of guanxi, as shown in Figure 4. First, IT has a positive effect on the contractibles and a negative effect on the noncontractibles in an interorganizational relationship. Our case evidence suggests that IT enables a contract to extend monitoring scope with low cost and real-time features, and enhances its enforcement by information sharing and information traceability. This enables firms to transform more noncontractibles to contractibles. Second, more contractibles and the improved contract enforcement strengthen the organizational power, and subsequently cultivate more social capital at the organizational level. This organizational-level social capital, in turn, further promotes effectively coordination among partners, breeds interorganizational trust, and enhances the contract enforcement. The cycle “R1” in Figure 4 represents this interaction cycle. Accordingly, we propose that:

**Proposition 3**: The interaction cycle among IT-enabled contracts, organizational power, and organizational social capital strengthens the positivity of guanxi in interorganizational relationships.

On the other hand, the noncontractibles, due to the incompleteness of contracts, create opportunism and result in extended power of the interfacing personnel. Extended personal power reduces or replaces organizational power and extracts organizational resources for personal benefits, such as personal social capital. When this happens, the power alienation occurs. By replacing organizational power and accumulating personal social capital, the interfacing personnel extract organizational resources and weaken organizational social capital. Along with this logic, if IT decreases the noncontractibles by providing better monitoring with lower cost, it curtails extended personal power and prevents power alienation. By cutting off the source of personal social capital, the negative guanxi then loses the stimulant and is weakened, that enables contracts to assert its authority and organizational power recovers. In this process, the business norm of following contract rules embedded in the information systems is gradually institutionalized. Meanwhile, the power of organization comes back and interorganizational trust is restored. The regaining of organizational power based on the regression of contract function promotes the accumulation of organizational social capital. The cycle “R2” in Figure 4 represents this interaction cycle. Based on the analysis above, we propose that:

**Proposition 4**: The interaction cycle among IT-enabled contracts, organizational power, and organizational social capital weakens the negativity of guanxi in interorganizational relationships.
5 DISCUSSION

This research contributes to extant literature in at least two ways: i) it demonstrates IT’s value in enterprise governance. IT enables contracts to control the negativity of guanxi and strengthen the positivity of guanxi; and ii) it demonstrates the interactive cycles among IT, contract, and elements of guanxi and their impact on interorganizational relationships. Our case evidence suggest that contract is appropriate for the governance of the routine, well-defined, describable, organizational level business practices; guanxi in contrast is suitable for interorganizational governance when market fluctuations or internal operational risks occur; and IT guarantees the governance target implementation of contracts and controls the negativity of guanxi and improve the positivity of guanxi.

We suggest a portfolio management approach toward governance in Chinese firms or foreign firms in China. Implementing and using information systems have already become the necessity of enterprise management. However, without the interactions with contract, it has yet to show that IT can provide the necessary governance alone. Thus contracts embedded in IT play a significant role in effectively managing interorganizational business relationships. Hence, for firms with a strong guanxi culture, the use of IT can help transform interorganizational relationships from guanxi-based to contract-based with enhanced governance effectiveness and efficiency. For firms that have already implemented information systems, the integration between IT and contract is critical in order to enhance the effectiveness and efficiency of governance for dealing with opportunism.

As an exploratory case study, this study has three main limitations, which also provide opportunities for future research. The first is that this research focuses on the abusing behaviors of the interfacing personnel (such as purchasers and salesmen). However, to our knowledge, this issue also occurs across other business functions that span firm and department boundaries. The second is our argument that it is primarily IT that enables contracts to control the negativity of guanxi and improve the positivity of guanxi. However, to what extent it can control and to what extent it can improve remain questions. More qualitative and quantitative studies will help enrich and extend this research. Last but not the least, due to space limit, we are not able to provide a more detailed cross-case analysis to triangulate key theoretical constructs and relationships.
6 CONCLUSION

Despite the prominence of guanxi in social and management literature pertaining to China, little research has been done about the influence of IT on guanxi. This study proposes a process model that describes how IT enables contracts to control the negativity of guanxi and strengthen the positivity of guanxi. We conclude with three main findings of this research: i) the negativity of guanxi can be controlled by IT enabled contracts, while the positivity of guanxi is irreplaceable as it plays an indispensable role in dealing with interorganizational business emergencies; and ii) power alienation resulting from the negativity of guanxi can lead to the transfer of organizational social capital to personal social capital; and iii) the implementation of IT enables the regression of contract function and further regains organizational power, which in turn improves the accumulation of organizational social capital and thus strengthen the positivity of guanxi. This study calls for more future research on the interactive cycles among IT, contract, and elements of guanxi in order to develop a better understanding of the complexity of interorganizational relationships and more effective and efficient interorganizational governance mechanisms.

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