STRIKE A SUBTLE BALANCE BETWEEN BEING TOO LENIENT AND TOO STRICT: THE IT ENABLED AMBIDEXTERY OF GOVERNANCE CONVERSION

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Abstract

Firms in China and in Asian-Pacific countries normally encounter a governance paradox of being too lenient via relational-based governance or being too strict via contractual-based governance under uncertainty. While both governance mechanisms have been extensively studied separately under inter-firm governance contexts, though some studies showing complementary and substituted as the interactions between these two, few, if any, studies focus on the further conversional process in details of how these two make complement or substitute especially in the digital age. In this study, from the lens of ambidexterity theory, we employ an exploratory case study methodology and attempt to understand its interaction process in a Chinese firm. We submit there is a conversion via information technology between contractual-based governance and relational-based governance and IT acts as an intermediary to support organization ambidexterity thus enabling governance conversion. Precisely, IT can bring flexibility and support general trust exploration as well as system-based change exploitation thus enabling contractual-based governance to convert into relational-based governance. Besides, IT can assess and standardize relationships via providing process and rules, and support knowledge-based trust exploitation as well as system-based process exploration thus enabling relational-based governance to convert into contractual-based governance. Our study inspires firms to response uncertainty and keeping inter-firm cooperation by IT-enabled governance conversion.

Keywords: Inter-firm Governance, Inter-firm Cooperation, Hybrid Governance, Information Technology, Ambidexterity.
1 INTRODUCTION

Extensive studies have been conducted in the area of inter-firm or inter-organization governance (Poppo & Zenger 2002; Carson et al. 2006; Rai et al. 2012; Gopal & Koka 2012). Many of them focus on how to use different governance mechanisms to maintain inter-firm cooperation and against opportunism, especially in the context of uncertainty (Carson et al. 2006). As the two common mechanisms, contracts and inter-firm relationships are considered and being used into governance process to keep inter-firm cooperation such as R&D, outsourcing, etc. The contractual-based governance, also being named contractual governance or formal governance, refers to firms using a legal or formal way such as contracts to define obligations and provide exchange parties with an instrument of control and escalation (Lee & Cavusgil 2006; Rai et al. 2012). Whereas the relational governance normally was considered as an informal mechanism, represents “ex post, extra-contractual aspects of the relationship in that these are not contractually stipulated but represent what actually transpired during the project” (Carson et al. 2006). The relational perspective emphasizes non-contractual aspects of the inter-firm relationships such as trust (Gulati 1995), reciprocity and flexibility (Heide 1994) as safeguards against opportunism. In addition, there are studies focuses on the interactions between these two governance mechanisms, especially how these two interact under uncertainty. Those are considered relational governance as a complement of contractual governance (Poppo & Zenger 2002), and those are proposed the two mechanisms are substituted (Gulati 1995). Though there are studies represent that contractual and relational governances each have advantages and disadvantages in specific situations and are not simply substitutes (Carson et al. 2006). However, few studies focus on how these two mechanisms make complement or substitute (Woolthuis et al. 2005), or there is lacking studies with an integrated perspective to understand the underlying interaction with a situation which exists both complementary and substituted interactions.

With the increasingly heated global competition, there is no time for firms to hesitate and they need to confront with quick response. However, firm responses uncertainty with many goals or solutions, and even sometimes their goals are ambidextrous (Gupta et al. 2006). Thus, firms may encounter a paradox of how to achieve their ambidextrous goals. Ambidextrous goals represent firms simultaneously pursuit the two contradictory goals (Gibson & Birkinshaw 2004). In terms of inter-firm governance, the different mechanisms represent different characteristics as a safeguard against opportunism. The contractual-based governance represents a formal way of governance while the relational-based governance represents a way of informal. The inter-firm governance that simultaneously involved both contractual-based and relational-based governance was considered as a way of ambidextrous governance (Blome et al. 2013). Thus, with the theoretical lens of ambidexterity, it is suitable to understand the context including both contractual and relational governance, and the detail aspects of ambidexterity such as exploration and exploitation (Im & Rai 2008) can help to understand the underlying interaction between contractual and relational governance. Understanding the interactions and striking a balance between contractual and relational governance is very important during inter-firm governance since different governance mechanisms may lead to different impacts and consequently affect the inter-firm cooperation performance. Thus, we hope to extend the ambidexterity research into inter-firm governance area to open the “black box” of interactions between contractual and relational governance.

The increasing use of Information Technology (IT) into business exchange enables firms systematically to manage their relationships with partners, such as the applications of customer relationship management (CRM) systems. IT plays an increasing key role in inter-firm cooperation and being continuously improved to meet management needs (Schmenner & Tatikonda 2005). Thus, IT makes it possible that records the underlying interaction process between contractual and relational governance, and enables firms to do their business exchange with ambidextrous goals. With the customized setting into information systems, IT enables flexibility into inter-firm cooperation thus taking quick responses to uncertainty (Gosain et al. 2004). Besides, information systems contain process data, process logic, business rules that can help to standardize the process (De Toni & Zamolo 2005). Flexibility and process standardization were considered as a pair of ambidextrous goals that firms pursuit during inter-firm cooperation (Simsek 2009). In terms of inter-firm governance, during the environment with uncertainty, contractual governance aims to share risk among cooperative actors
with a fix and relative stable way (Gopal & Koka 2012) while the relational governance enables actors share risk on a basis of non-contractual factors such as trust, commitment etc. (Rai et al. 2012). Thus, in the area of inter-firm governance, few studies focus on how IT enables firms to achieve their ambidextrous goals during cooperation with the theoretical lens of ambidexterity. Besides, with the extensive use of IT into inter-firm cooperation, few studies analyse how IT influence or support the interaction between contractual and relational governance.

Firms in china or Asian countries may encounter a paradox of how to achieve a balance between contractual and relational governance, especially during the context of uncertainty. This is a practical issue based on theoretical discussions of interactions between contractual and relational governance (Poppo & Zenger 2002; Carson et al. 2006; Rai et al. 2012). As the context related to this issue involved ambidextrous characteristics, the ambidexterity theory provides a suitable lens to analyse the underlying interaction process. Besides, with the widespread use of IT into inter-firm cooperation, understanding the role of IT during the interaction process is important for the research of IT values and help to solve the inter-firm governance paradox issues. Thus, having integrated the potential aspects to contribute, we deploy an exploratory case study in a Chinese firm to understand how organizations achieve contractual-relational governance conversion during inter-firm cooperation through IT-enabled ambidexterity? And how IT affects such governance conversion?

2 THEORETICAL BACKGROUND

There is a rich body of literature on inter-firm governance mechanisms of contract and inter-firm relationships (Williamson 1993; Poppo & Zenger 2002; Woolthuis et al. 2005). However, there is also an on-going debate about the interactions between contract and relationships, and how contract interacts with relationships during inter-firm governance process. Some scholars argue that there are complementary interactions between contract and relationships (Poppo & Zenger 2002), while others consider such interactions as a substituted process (Woolthuis et al. 2005). And some scholar proposes that the interaction depend the specific context, and contracts and relationships are not simply substitutes (Carson et al. 2006). Besides, the majority of the academic researches view relationships as a complement of contract during inter-firm governance, it is shown that relationships can be a governance mechanism providing contract with flexibilities, as inter-firm actors already own trust with their partners in the relationships (Woolthuis et al. 2005). Studies on the interactions of substituted are based on the lens of risk control that relationships can act a same role of contract into inter-firm governance through making actors invest in risk response (Blome et al. 2013). However, there are few studies on the underlying process about contract-relationships interactions by answers on how these two mechanisms complement or substitute? Especially with the application of IT, will it be same interactions like the previous literature saying? Or will it be appearing a new type of interaction? Or whether complementary and substituted interactions both exist into governance process or both not? Such issues have significant influences on how to balance the role of contract and relationships during inter-firm governance to maintain the long-term cooperation (Woolthuis et al. 2005). Meanwhile, inter-firm governance via single contract or relationships separately has been shown limitation under environmental uncertainty (Blome et al. 2013). Thus, to response uncertainty, firms consider a combined governance mechanism by integrating characters of contract and inter-firm relationships (Lee 2002). However, it lacks examples or conceptual process in details on how firm integrates these two mechanisms via information technology. To conceptualize such process, we introduced a theoretical lens of organizational ambidexterity to examine how firms use IT to support their organizational ambidexterity thus achieving interactions between contractual-based and inter-firm relational-based governance. In the following sections, we provide a brief summary of the literature related to our research questions.

2.1 Contract and relationships into inter-firm governance

The literature on inter-firm governance shows that contract and relationships act as two important mechanisms during governance process (Woolthuis et al. 2005; Poppo & Zenger 2002). The contractual-based governance is treated as a formal way of governance (Yu et al. 2006) while the
relationships-based governance is treated as an informal one (Zhang & Keh 2010). Precisely, the contractual-based governance origin from the studies of transaction cost economics (TCE) (Williamson 1985). It is shown that firms eager to saving cost on unpredictable inter-firm cooperation thus making rules, process and any other institution properties to avoid opportunistic behaviours. From the lens of TCE, contracts are introduced into uncertainty context, to ensure actors can collaborate with each other as usual. Thus, contracts can benefit firms by reducing lost from unpredictable risk. However, the contractual-based governance represents some limitations when inter-firm cooperation meets uncertainty. It is called contract incompleteness, showing that all the potential risks from inter-firm cooperation cannot be controlled just by a contract (Williamson 1993). Besides, it may increase cost to maintain and monitor inter-firm cooperation if a contract was designed too impeccable (Poppo & Zenger 2002). Plus, actors of inter-firm cooperation may feel distrust if contracts were designed relatively complete (Woolthuis et al. 2005). Thus, as a complementary mechanism, relationships-based governance can be introduced to reinforce inter-firm cooperation under uncertainty. The relationships-based governance origins from social exchange theory (Macneil 1980), it is shown that inter-firm relationships can be formed on a basis of inter-firm trust (Smith et al. 1995), and such trust can be viewed as a general level of trust with the term “general trust” (Mayer et al. 1995). Besides, the inter-firm trust can be accumulated with the on-going inter-firm cooperation (Ring & Van de Ven 1992; Macneil 1980). Thus, the on-going cooperation will form the knowledge-based level of trust, with the term “knowledge-based trust” (Shapiro et al. 1992). Besides, during an environmental uncertainty, inter-firm trust can encourage actors to find solutions towards change while enforce one's belief that there is not opportunistic behaviours taken by the others (Williamson 1993). Furthermore, the inter-firm trust enables actors to make investment to response uncertainty (Blome et al. 2013). Thus, the inter-firm trust plays a crucial role in inter-firm cooperation. However, the effect of inter-firm trust may be overstated thus it may cause blindly trust into cooperation (Williamson 1993). Thus, the relationships-based governance itself owns limitations as well when it meets uncertainty. Compared with contractual-based governance, relationships-based governance for inter-firm cooperation may cost less than the way by contract. It can be more flexible but it is lacking rules or processes to make it better be controlled. We use the term “relationships” to represent inter-firm relationships. Unlike the term “GuanXi”, it is most used to describe connections among individuals (Gold et al. 2002). Thus, our studies use the term “relationships” to examine interactions from an organizational level.

From the literature on inter-firm governance, the hybrid governance design by combining contracts with relationships or vice-versa is treated as an effective way to response uncertainty (Woolthuis et al. 2005). Meanwhile, there were studies on discussion the interaction between contractual and relational governance. Precisely, those that considered relationships as a complementary mechanism for contract to response uncertainty, or vice-versa (Larson 1992; Poppo & Zenger 2002), and those that considered relationships as a substitution for contract to response uncertainty, or vice-versa (Ring & Van de Ven 1994), and those proposed that contract and relationships should not be considered as a simple substitution, depending on a specific context (Carson et al. 2006). In terms of complementary interactions, it is shown that contractual-based governance appears limitation under uncertainty as the contract incompleteness. Thus, inter-firm cooperation may experience events that are out of control through governance by contract. As inter-firm actors have accumulated trust from its original cooperation, the relationships-based governance enables actors to make a flexible change towards uncertainty. Thus, as the prior trust established, inter-firm actors believe their partners won't act opportunistic behaviours. To keep the long-term cooperation, they may temporary accept change on the original cooperation process to response environmental uncertainty. Therefore, the contractual-based governance may standardize the inter-firm cooperation by providing rules as well as processes while relationships-based governance brings inter-firm cooperation with flexibility. On the other hand, as contractual-based governance can bring rules and process for guiding inter-firm cooperation, it may improve the blindly trust limitation of relationships-based governance (Williamson 1993). Thus, relationships-based governance enable flexibility into inter-firm cooperation while contractual-based governance brings rules and processes to ensure such flexible change can be able to control. Additionally, in terms of substituted interactions between contract and relationships, it is shown that, like a contract, relationships-based governance can play a same role to
make actors invest in risk response (Dyer & Singh 1998). In a context of high cost of contract making, inter-firm cooperation may rely on its relationships based on inter-firm trust rather than a costly contract (Williamson 1993). Thus, contracts and relationships may work together to response uncertainty during inter-firm cooperation. During this process, these two mechanisms may substitute or complement, or both (Woolthuis et al. 2005; Carson et al. 2006). However, few studies examine the underlying process on how these two mechanisms enact substitute or complement interactions (Woolthuis et al. 2005). Understanding the interactions process between these two mechanisms is significant for firms to maintain their long-term cooperation with their partners.

2.2 Organizational Ambidexterity

The dynamic changed environment with uncertainty forces firms exploiting its own resources while simultaneously explore for new opportunities (Jansen et al. 2009). The organizational ambidexterity is defined as an organization having a pair of opposite capabilities (Gupta et al. 2006; Gibson & Birkinshaw 2004). Besides, ambidextrous organizations are those with the ability to simultaneously pursue both incremental and discontinuous innovation and change (Tushman & O'Reilly, 1996). Additionally, there are two basic capabilities from organizational ambidexterity: exploitation and exploration. More specifically, exploration can be introduced into activities such as development of new product, market extending and so on, while the exploitation reflects firms to adopt its environment by making use of its resources, or relationships with its partners (Benner & Tushman 2003; Danneels 2002). Furthermore, the prior firms “know-how” can be exploited to support firms to explore new opportunities for its product development (Abernathy & Clark 1985). Besides, the exploration can be viewed as a complement of exploitation to enable firms alive in its environment (Im & Rai 2008; Katila & Ahuja, 2002; Knott 2002; Levinthal 1997). As our studies focus on issues from inter-firm cooperation, it belong ambidexterity literature on organizational level. Thus we follow the definitions by Tushman & O’Reilly (1996) and Bledow et al. (2009). Organizational ambidexterity requires firms to make changes by explore the potential opportunities from such uncertain environment while exploit its resources to adopt the changed environment. Thus, the theoretical lens of ambidexterity can be well used to examine issues of inter-firm governance especially based on contract and relationships.

2.3 Organizational ambidexterity in inter-firm governance

There are several brunches of studies on organizational level ambidexterity (Raisch & Birkinshaw 2008) including innovation cooperation (Tushman & O’Reilly 1996), organizational learning (March 1991), strategic management (Burgelman 1991; Lin et al. 2007), inter-firm relationships (Tiwana 2008), technology sourcing (Rothaermel & Alexandre 2009). However, the most of previous studies based on a single organization, examining ambidexterity within an organizational context (Duncan 1976; He & Wong 2004), while it was lacking related studies into contexts out of organizations such as inter-firm relationships (Kristal et al. 2010; Raisch et al. 2009). A typical research made by Im and Rai (2008) that they examined knowledge sharing among inter-firm cooperation. Thus, ambidexterity into inter-firm context gains rapid development (Kristal et al. 2010; Tokman et al. 2007). However, it is still lacking studies on how to achieve organizational ambidexterity during inter-firm cooperation (Blome et al. 2013) and how organizational ambidexterity is working into inter-firm governance process.

The environment for inter-firm cooperation is complex and dynamic with uncertainty such as demand uncertainty (Blome et al. 2013; Lee 2002) and product complexity (Mesquita & Brush 2008) which can affect the inter-firm governance of cooperation. Specifically, demand uncertainty reflects a phenomenon that an organization unable to predict the demand change thus effecting firms’ decisions of inter-firm governance (Fisher & Raman 1996). Thus, the environment uncertainty not only affects firms’ response towards change (Robertson & Gatignon 1986; Zhou 2006) but governance mechanism selections for inter-firm cooperation (Wathne & Heide 2004). While the lens of ambidexterity into inter-firm governance can help to understand how firms response change by exploration and how they can alive in change by exploitation.
2.4 Information Technology in inter-firm governance

Information technology is used into an inter-firm context to raise the performance of inter-firm cooperation (Golden & Powell 1999; Fredericks 2005). There are many benefits that information technology can bring into inter-firm cooperation such as increasing flexibility by information sharing among cooperative actors (Gosain et al. 2004; Schmenner & Tatikonda 2005), creating inter-firm trust via increasing information transparency (Sahin & Robinson 2002), risk control (De Toni & Zamolo, 2005; Holweg et al. 2005), process standardization (Wüllenweber et al. 2008) etc. Information systems (IS) can develop new relationships among inter-firm networks, and providing networks with flexibility thus increasing network response towards change (White et al. 2005). As information technology (IT) can be used to match and support business process of supply chain, it can help to raise flexibility into the whole supply chain networks towards demand change of information (Sarker et al. 2007). Additionally, as IS include rules and processes, it can be used to support the inter-firm governance by contract. Meanwhile, IT enables firms to make change into systems thus achieving flexibility into process. However, the inter-firm governance needs flexibility as it may be incomplete under uncertainty (Blome et al. 2013), while a flexible contract can stabilize the business transaction into demand change (Milner & Kouvelis 2005) and reduce the influence by changed orders (Tsay & Lovejoy 1999). Besides, flexibilities into amount and delivery time are necessary for long-term cooperation such as product development and innovations (Milner & Kouvelis 2005). Furthermore, inter-firm cooperation can form relationships thus providing knowledge for increasing flexibility. Additionally, another important benefit for applying IT into inter-firm governance is that IT can help to standardize the process (Wüllenweber et al. 2008), the process standardization can improve cooperative performance, saving cost and avoiding process mistakes (Manrot & Vitasek 2004; Phelps 2006). Thus, IT can help to bring rules or processes to standardize the governance process.

3 CASE STUDY DESIGN AND METHODOLOGY

Our research adopts an exploratory case study with empirical evidence rather than confirms or tests the framework or relationships (Yin 2003; Walsham 2006). As it lacks a systematic understanding of contractual-relational interactional process of inter-firm governance, a methodology of case study can establish an inductive analysis (Eisenhardt 1989). Furthermore, qualitative research method enables researchers to examine phenomenon into an organizational development process, collecting a rich study materials as well as conclusions (Walsham 2006). As our studies focus on a phenomenon of governance mechanisms interactions into an inter-firm cooperation context, a qualitative research of case study can help us view such phenomenon into detail process. Additionally, our qualitative research follows the design of SPS research method (Pan & Tan 2011) which guides us systematically forming our research framework as a theoretical base. Furthermore, the research framework may be considered as a priori theory that guides the design of the case study protocol and as a starting point for the works of exploration (Sarker et al. 2012).

3.1 Case selection

We followed the general guidelines for conducting exploratory case studies (Yin 2003), and setting up selection criteria for the case object to meet our research needs: Firstly, the case object must be able to sophisticated use its information systems to support inter-firm cooperation with partners, and the inter-firm governance should be based on mechanisms both contracts and the inter-firm relationships. Secondly, the case evidence should reflect the contractual-relational conversional process and providing rich information about the process into stages. Thirdly, the environment of the firm stayed should reflect remarkable turbulent with uncertainty and IT solutions must be used to response uncertainty from cooperation with its partners. Fourthly, it is needed for case object to show that it adopted IT to support its inter-firm cooperation with partners, and should reflect how IT plays a role in supporting organizational ambidexterity thus achieving contractual-relational conversion to maintain inter-firm cooperation. With the criteria shown above, we found D company as our research object. Precisely, headquartered in Guangzhou, the most famous trade centre into Pearl River Delta of South China, the D company is a leading Textile trading company of Guangdong province, owning
huge and complex relationships with its suppliers as well as customers. As the production of textile is naturally complicated with more than 30 processes, plus the trading of textile products was fluctuant by many factors such as climate and seasons, D company frequently experienced change into its inter-firm cooperation. However, with the application of IT for more than 10 years, D company can stay alive in such fluctuate environment with a stable inter-firm cooperation with its partners. Thus, D company would be a good research object to examine how IT affects inter-firm governance under uncertainty thus supporting long-term cooperation, and how IT influences the contractual-relational governance interactions into governance process. Thus, the D company can meet the requirement of our research objectives.

3.2 Data collection

There are three channels that we collect case data. Firstly, company information disclosed from official website and publications. Secondly, files, magazines and newspapers from internal company. Thirdly, semi-structured interview conducted in September 2012. The design of data collection from multiple channels aims to achieve a comprehensive understanding towards case firm. Besides, we adopt data triangulation to ensure our studies match the objective facts (Barnes & Vidgen 2006).

Before we started interview, we organized master students to collect information from the case firm’s website and the relevant reports or introductions on books or newspapers, and we integrated these disclosed data with group discussion in May 2012. Besides, we spent two months making a case study protocol on a basis of extensive literature research on inter-firm governance and organizational ambidexterity. In addition, with the brainstorming and discussion, we make an integrated framework including governance and ambidexterity literatures as a prior theoretical basis to guide the analysis towards data. The primary framework including the basic concepts related to our research such as contractual governance, relational governance, interactions between contractual and relational governance, ambidexterity, and IT-enabled ambidexterity. Precisely, the key factors related to contractual governance and relational governance were based on the studies by Rai et al. (2012) and Qi & Chau (2012). And factors related to ambidexterity were based on studies by Simsek (2009).

During the interview, the interviews were based on open-ended questions with a predesigned interview protocol to assert the reliability of case study (Yin 2003). We arranged two groups of interview each time in two separate discussion rooms. And we spent around 1 hour for each informants. Each room contained one interviewer and was arranged two PhD. Students and three master students to attend into interview process. Students were required recording and taking notes. We ensured our students understand the research framework and offered them chances to supplement questions. Besides, the framework can be adjusted with the field data to ensure the alignment between the framework and data. Meanwhile, recording has been reviewed and combined with the onsite notes to ensure a complete understanding about informants saying. After that, we transcribe recordings into 232 pages documents to support our data analysis, and make coding via open coding and axial coding (Strauss & Corbin 1998). The theme, elements and key factors of coding were based on studies by Rai et al. (2012), Qi & Chau (2012) and Simsek (2009). Those studies provided a clear view of relationships between factors and the concepts.

To ensure data is relevant to our research framework, we classify similar statements into categories until it appears theme with high relevance. Then we adopt a technique of detailed analysis towards each theme. After that, we align empirical data with the theoretical lens and research framework (Kirsch 2004). Thus, empirical data is analysed and extracted iteratively until it achieves’ theoretical saturation” (Glaser & Strauss 1967). With the guideline shown above, after initial contacts with managers in these departments, 14 informants were selected as the target of this study (See Table 1).

<table>
<thead>
<tr>
<th>Department Info.</th>
<th>Number of Interviewees</th>
<th>Job Titles</th>
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<tbody>
<tr>
<td>President Office</td>
<td>1</td>
<td>President of Textile Business</td>
</tr>
<tr>
<td>Vice President Office</td>
<td>1</td>
<td>Vice President of Textile Business</td>
</tr>
</tbody>
</table>
Executive Assistant Office | 1 | Executive Assistant to the Chairman
---|---|---
Purchase Department | 3 | Vice President of Purchasing, Purchasing Manager, Planning Manager
Sales Department | 6 | Sales Manager (2), Sales Representative (2), Operator for Sales Systems (2)
IT Department | 2 | IT Manager, IT Staff

Table 1 Profiles of the Informants

4 CASE DESCRIPTION AND ANALYSIS

D company was established in FoShan, Guang Dong in 1997 with the period that IT starts booming. With the 27 years that CEO keeps a belief of “response change via change”, D company achieved a remarkable development from the starting point of small booth with no more than 10 employees to a group enterprise with staffs around 3000. The main business of D company is textiles and fibre production and trade, while its business also extends to several industries such as financial investment, estate, media etc. The primary products of D company are fibres including knitted fabric, man-made fibre and chemical fibre etc. Besides, as the company D is located in the area of Pearl River delta from south china with high level of trade intensity, it enables its products to be conveniently sold to Hong Kong and exported into Southeast Asian countries. It gained annual turnover of 4.8 billion RMB in 2013. During the development process, as the application of supply chain information systems from 2003, which enables D company to extend its influence to the whole supply chain networks via creating brunches into upstream and downstream. On the other hand, with the business booming, D company created an increasing number of inter-firm relationships with its suppliers and customers, which enabled D company achieving flexibility with more choices and business connections. Additionally, to follow up CEO’s belief, the whole company forms a culture of taking quick response or decisions at the first time when change happened, while the networks with rich inter-firm relationships provide D company with flexibility such as extension of delivery. Meanwhile, under the guidance of CEO’s belief, the IS of D company had been modified and upgraded many times to ensure it can response change via enabling company to enact change into business transactions. Hence, the whole company forms a culture of taking quick response or decisions at the first time when change happened. However, such quick response had brought company with risk and troubles. For instance, though the D company used contract for its inter-firm governance, the increasing number of relationships provided cooperation with flexibility thus actors will ignore the existing of the business contract. Hence, the inter-firm cooperation became increasingly flexible with an increasing number of relationships adding in, while it becomes hardly control for such flexibilities. Therefore, the top management of D company meets a paradox situation that they expect to gain flexibility thus quick response to change but they hope such flexibility can be controlled. Hence, the D company hope to adopt IT to solve such paradox. The following sections will show the analysis of inter-firm governance process of D company with its distributors including four phases of contract-relationships interactions with IT-enabled ambidexterity.

4.1 Phase A: Contractual-based governance was forced to be flexible with environmental uncertainty

Since D company was founded in 1997 July, it is on a way of keeping improve its regulatory system with its partners. The case materials reflect that at the beginning of D company established, it just a small family business owned no more than 10 staffs. Thus, each staffs just took their responsibilities for the daily business routines. During that time, the work of staff was simply solving orders from customers, and some customers became well known by staffs with an increasing number of transactions. Hence, D company formed depth cooperation with customers that frequently made orders with a large amount of products. However, the top management of D company soon met
troubles of customer delaying the payment, and some of those customers are the ones that D company created depth cooperation. Hence, to retain key customers, the management of D company have to tolerate the situation of customer payment delay. However, such kindly tolerance was used by some customers that they habitually delay payments for products thus increasing cash flow for itself. Plus, there are not any rules or systems for D company to management such situations, thus the sales manager just made verbal promise to customers that the unfinished payment was required to accomplish in a certain time limit.

However, customer payment delay was still unsolved as an increasing number of new transactions created while sales manager unable to recall the exactly deadline that he promised customers to finished payment. Therefore, transactions became unconfined with no rules to control thus increasing the risk into D company’s cash flow. Take the payment delay as an example, from Sep. 1997 to Jan. 1998 D company finished its regular system via designing contract to manage its inter-firm relationships especially restrained the intent of delay payment. Thus, the situation was improved and last for 2 years until 2000, the sales manager found that the contractual-based governance was good for restraining the opportunistic intent of payment delay, while it may still appear such situation as the environmental uncertainty. More exactly, the case resources reveal that textile trade was affected by environmental factors such as climate and seasons. Besides, the production of textile was very complicated with more than 30 main processes, thus it was hard to monitor the production of textile into each processes, unless a company was willing to pay lots of money for doing this. Hence, though D company had signed contract with its distributors for long-term business transactions, it was unable to avoid the impact of objective factors related to payment delay.

Furthermore, as the uncertainty with frequent climate change, the distributors frequently changed their orders. Thus, the sales department of D company had to confront a surge in orders on sunny days while had to deal with sharply dropped orders or increasing refund on rainy days. To response such environmental uncertainty, top management of D company decided to adopt an information system for textile trading via outsourcing development in Jun. 2001 and established an IT department. The developed system went live on March 2002, and top management hoped that they can response change via the application of the IS such as predicting demand change, systematically management of products for sale etc. However, matters were still unimproved as this system can just run with pre-setting processes or rules. Though the system design integrated rules or process of the original contract for inter-firm governance, while top management was still passive in front of change with uncertainty. On the one hand, the D company wanted IS can be used to control uncertainty-driven distributors’ change. On the other hand, the systems unable to be easily changed or modified to act a flexible response towards change. As the IS strictly run the rules of contract, thus it cause a strict punishment for the distributors’ payment delay, and it may hinder the future cooperation with distributors. However, top management understood that textile trade process should include flexibility to increase sales while the IS have to run in the process thus it unable to meet the requirement of flexibility. Therefore, a paradox situation caused D company to form a strategy with a dual-aim that retained flexibility into transactions while keep stable by controlling via IS. Specifically, to maintain the long-term cooperation with its distributors, the D company decided to make concessions when they met events like payment delay, refund etc. Meanwhile, IS was used to mark or record concessions that D company had made for distributors. Therefore, under the guide of such strategy, though D company had to passively face change by uncertainty, while the IS enabled to record change process that D company had made for their distributors.

4.2 Phase B: Flexible contract generate inter-firm relationships

With the increasing number of transactions, the sales department had to tolerate the change made by distributors to achieve such “flexibility” into long-term cooperation. However, sales department realized the influence of contract into inter-firm governance had been weakened, and the flexible change based on contract may a temporary good way to response change with uncertainty. However, with the application of IT, sales department staffs can check into systems whether their distributors kept their promise to accomplish the late payment. As the statement by sales manager:’we may offer them (distributors) flexibility with a certain extension for the potential change, such as their payment
delay. We will check how many deals we made with them, and we normally offer them with one more week for the appeared change, we will mark those distributors that had not kept their promise into our system”. Thus, with such way of that sales manager offer distributors with an extension for the temporary change, the textile trading process can be continued rather than stopped immediately by such situation.

Besides, D company found that there was another benefit to use the IS, and that the IS can help staffs to discriminate distributors that owned a real problem to bring trouble rather than those with opportunistic motives. “If we found some distributor which unable to keep their promise, then I will report to our manager about this situations” mentioned by sales system operator. B “It depends how much sales they contribute us, and then we will decide whether they can get an extension again” by sales manager. Hence, it can be shown that IS become as a filter screen to avoid motives of opportunisms, and to maintain cooperation with those who are really important for the D company growth. Besides, as IS enabled sales manager offer flexibility into transactions, those distributors who gained such “extra help” felt D company showing a trust thus increasing their effort to accomplish payment. Hence, it may further reinforce the inter-firm relationships with distributors. Therefore, IS bring flexibility into the contractual-based governance to make contract be flexible with a space that can be modified. As such flexible way of contract governance can show a tolerance but confidence that distributors can keep their promise to deal with uncertainty, IS can represent inter-firm trust thus creating inter-firm relationships.

4.3 Phase C: Inter-firm relationships-based governance was standardized by IT

With the application of IS, inter-firm relationships enhanced by IS can bring contractual-based governance with flexibility intro transaction process. Thus, the influence of uncertainty from distributors can be reduced thus making transaction process become smooth. With an increasing number of inter-firm relationships formed via IS, the IT department wanted the sales system should not only be able to represent the inter-firm relationships with distributors but to find those who were need to be trust or should maintain deep cooperation in the future. Thus, with a half year development on the owned sales system, the new developed system went alive at Mar. 2005. The updated IS enabled sales department to access the relationships with their distributors. For instance, distributors can be divided into three catalogues into IS. The ones who always followed the contract can be marked with 4 stars; The ones who unable to follow the contract but can still keep promise in the 1st extra extension can be marked with 3 stars; The ones who unable to follow the contract but can keep promise in the 2nd extra extension can be marked with 2 stars; The ones who unable to follow the contract and unable to keep its promise during extension can be marked with 1 stars. Thus, four levels of relationships assessment enable sales manager to view the exactly status of inter-firm relationships that they had with distributors.

Besides, IS can reflect the level of trust-worthy thus telling management whether to develop long-term cooperation with a certain distributor. It can be seen from the case materials that IS enable sales department to provide flexibility into transactions while such flexibility can be considered as an trust thus forming an inter-firm relationships between D company and its distributors. Furthermore, IS provided sales department with a chance to access the level of relationships with distributors. Thus, D company may understand which distributor they owned a general trust based on relationships, or which distributor they had accumulated trust thus forming a high level of trust into relationships. Thus, IS supported sales department to view the process of relationships generating thus dividing the process into steps. With the different level of relationships, sales manager able to understand which distributors are strategically important and which should be abandon.

4.4 Phase D: Standardized inter-firm relationships were used to improve the contract

As IS enable sales manager to view the inter-firm relationships with distributors, it can help to understand the level of trust into the inter-firm relationships. In other words, as system recorded the progress of transactions with distributors, it can reflect the inter-firm relationship forming process step by step. Therefore, the sales department became know how to deal with problems into different
relationships status with distributors. Hence, it may further help sales department to improve their transaction process with distributors. For instance, with 4 stars distributors, as it owned the highest level of trust, the rules for monitoring the transactions can be simplified. Or with distributors with 2 stars, it can be improved into the time of extension via integrating the two level of extra time extension. Thus, IS enable sales staff concentrate on dealing with relationships with distributors below the level of 4 stars, and improve the contract with process that are specifically designed for potential problems by different level of inter-firm relationships.

5 MAIN FINDINGS AND DISCUSSIONS

5.1 IT enabled ambidexterity into inter-firm governance conversion

The case analysis above shows that IS enables D company to act flexibility into uncertainty while keep standardized into relationships management with its distributors. As the contractual-based governance represents a limitation of contract incompleteness under uncertainty (Poppo & Zenger 2002), thus D company has to act flexibility to keep a quick response towards change. It can be shown that IT enable D company act such flexible features via providing elastic range into contract. Thus, a flexible contract with elastic range keeps the continuous trading rather than stopped by change with uncertainty. And during this process, IT brings contractual governance with flexibility thus making it with relational governance characteristics (Carson et al. 2006). As D Company has to increase its sales to keep alive in turbulent environment, plus its management requires reducing and controlling risk of change, it may further causes the ambidextrous strategic focus of D company to keep flexible and standardized into its transactions (Saraf et al. 2007; Wüllenweber et al. 2008). Therefore, with the influence of such ambidextrous strategy into a paradox of inter-firm governance, IT acts a possible way or solution for D company to meet such ambidextrous strategy. As the contractual-based governance with flexibility representing a mutual trust between inter-firm actors, IT is a way for D company to act such flexibility thus enabling to find trust into inter-firm relationships with its distributors. Besides, the first time of business actors’ cooperation is considered as a start point of general trust into its relationships (Lazzarini et al. 2008). And general trust being reinforced via IT can further enhance the inter-firm relationships (Mayer et al. 1995).

With IT-enabled establishment of inter-firm relationships, inter-firm actors will more rely on relationships for flexibility rather than the previous contract. Thus, during the process of contract-relationships conversion, IT supports firm’s ambidexterity to exploit flexible change and simultaneously explore the general trust from such flexible change. To keep inter-firm relationships standardize and follow the ambidextrous strategy of stabilization, IT manages the inter-firm relationships while standardizes relationships via IT enabled assessment. During this process, with the previous general trust accumulated thus forming a high level of knowledge-based trust (Shapiro et al. 1992), IT supports firm to exploit knowledge-based trust and simultaneously explore the process of relationships assessment. Thus, the relational assessment process represents the standardized inter-firm relationship creating process into IT. And the standardized process helps firm to response change into different relational situations. Therefore, with the case analysis and support of statements (see Table 2), we conceptualize the entire process of IT enabled contract-relationships governance conversion with a framework (see Figure 1).
Figure 1  A conceptual framework of contractual-relational governance conversion

<table>
<thead>
<tr>
<th>Phase No.</th>
<th>Job Titles</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Sales Representative</td>
<td>&quot;Textile trading is strongly affected by weather, climate and seasons. We can sale a lot in a good weather. But sales may drop sharply in bad weather such as thunderstorm. Thus, our distributors frequently changed their orders or refunding products, which brought troubles into our transaction process&quot;---Sales Representative</td>
</tr>
<tr>
<td>A</td>
<td>Sales Manager</td>
<td>&quot;Nobody wants the cooperation stopped, though our distributors cannot keep their promise every time, we offer them an extra date to keep the following business going on&quot;---Sales Manager</td>
</tr>
<tr>
<td>B</td>
<td>Sales Manager</td>
<td>&quot;We don't worry about the change of their staffs, or even management. As our system will record the &quot;extra help&quot; that we offered them, such as an extension for their payment delay. Thus, as a return, when we are in troubles such as delay of products delivery, our sales represent will print such report from system to ask their manager for an “extra help” too&quot;---Sales Manager</td>
</tr>
<tr>
<td>B</td>
<td>IT Manager</td>
<td>&quot;It’s hard to make our systems change with environment. However, we can record the change from our business process. Thus, we improved our systems based on these recorded change. And we trust it may be useful to deal with changes in the future.”---IT Manager</td>
</tr>
<tr>
<td>C</td>
<td>Sales Manager</td>
<td>&quot;We actually hope to control relationships with our customers. It is good for monitor and management. We prohibited staffs personally contact with staffs of our distributors, if they wanted, it should be into the systems&quot;---Sales Manager</td>
</tr>
<tr>
<td>C</td>
<td>Operator for Sales Systems</td>
<td>&quot;From the systems, it’s easy to check the relationships status with our distributors. And we are aiming to retain those customers with strong relationships&quot;---Operators for Sales Systems</td>
</tr>
</tbody>
</table>
| D         | Operators for Sales Systems    | "With the systems, we can view distributors into different groups of trust assessment levels. We provided them with different contract
5.2  IT values into contractual-relational based governance conversion

It can be known from the data that the productive process of textile is non-standardized and complex thus it is very hard to control each process via IT. Therefore, on the one hand, the D company unable to exactly follow the contract during transactions, as the uncertainty may affect the process of textile production. On the other hand, as the textile trading is heavily related to climate factors, thus frequent change of climate will further bring uncertainty into textile trading. Hence, the D company has to deal with change of environments while keep advance to alive into change. The answers to why such private owned company can keep flexibility while control such flexibility by change. With the analysis of case data, the key of D company to achieve flexible change and simultaneously ensure such change can be recorded into IT, is that D company follows the strategy of ambidexterity. To support a quick response towards uncertainty, IT enabled change on contractual-based governance and recorded the flexible change process into systems. Thus, IT increased the flexibility into transactions while helps D company to control and review such change process. Besides, IT can reflect the process of inter-firm trust generating thus showing different levels of inter-firm relationships for distributor assessment. As IT enabled D company to achieve ambidexterity under uncertainty, the governance process of inter-firm relationships become smooth and flexible. Therefore, from the perspective of IT application, IT enabled flexible changes into systems thus it can improve inter-firm transactions with flexibility. Besides, IT enabled flexible change can be considered as a way of trust representing that both actors trust others will keep their promise. Thus, with the accumulated trust created into inter-firm cooperation, it can further improve the inter-firm relationships based on the prior trust. Additionally, based on the IT, the trust reflections can be discriminated into different levels thus inter-firm relationships generating process can be reviewed from IT. Thus, the IT can standardize inter-firm relationships into levels from low to high. Hence, the standardized inter-firm relationships can be further used to access the distributors thus improving the contractual-based governance. The framework of the role of IT in governance conversion can be seen in figure 2.

Figure 2  The role of IT in governance conversion
Thus, we can summarize the IT-enabled process of contract-relationships conversion into four primary steps: Firstly, the IT enacted flexibility into contractual-based governance. Thus, as a complement, the IT-enabled flexibility integrated with contract thus forming a flexible contract (Carson et al. 2006) (See Phase A). Secondly, as the IT-enabled flexible contract represented a way of inter-firm trust, and trust can be accumulated with the on-going inter-firm cooperation. Hence, the governance based on inter-firm relationships will substitute the role of the previously contractual-based governance (Rai et al. 2012; Lazzarini et al. 2008) (See Phase B). Thirdly, with the different levels of trust, IT enabled inter-firm trust being discriminated into different levels thus forming a process of inter-firm relationships establishment. Thus, inter-firm relationships are standardized via IT, and inter-firm relationships are substituted by standardized relationships into systems (Shapiro et al. 1992) (See Phase C). Fourthly, as the standardization of inter-firm relationships generating, the process of relationships governance into different stages can be refined to design specifically contract for different situations. Thus, the standardized relationships into IT act as a complement to improve the completeness of the primary contract (Wüllenweber et al. 2008) (See Phase D). Therefore, it can be seen that IT can act as a media, to support the conversion process of contractual-relational governance conversion. Furthermore, the interactions of complementary and substituted both exist during inter-firm governance and these two interactions as two sub-stages to constitute the conversion interaction between contractual and relational governance.

6 CONCLUSION

Using the lens of ambidexterity theory (Tushman & O'Reilly 1996) and follow the on-going debate of contract-relationships interactions of inter-firm governance (Poppo & Zenger 2002; Woolthuis et al. 2005; Blome et al. 2013), we contribute to the inter-firm governance research by conceptualized the underlying process of contractual-relational interactions. We submit there is conversional interaction between contractual and relational governance under uncertainty, and complementary and substituted interactions as the two sub-stages of contractual-relational conversion. During this context, such interaction should not be simply considered as substituted (Carson et al. 2006). Specifically, with the application of IT, we conceptualize the process that IT acts as characteristics of relational-based governance by providing flexibility into contractual-based governance thus enabling complement to establish flexible contract. Besides, IT supports organization ambidexterity with general trust exploration and system-based change exploitation to make the flexible contract be substituted by relational-based governance. Furthermore, during the process of relational-contractual governance conversion, IT provides process and rules for relationships assessment thus enabling the relationships to be substituted by standardized relationships into systems. Thus, IT supports organization ambidexterity with knowledge-based trust exploitation and system-based process exploration to make the standardized relationships into systems to complement the previous contract. The two frameworks from our study help to conceptualize the underlying process of contract-relationships interactions, which can enrich our understanding of inter-firm governance on contract-relationships interactions. Besides, the framework can reflect the IT values in inter-firm governance through IT enabled ambidexterity to support contractual-relational interactions, which enriches the literature on IT support inter-firm governance. Additionally, our study can inspire firms to solve the paradox of finding a balance between too lenient via relational governance and too strict via contractual governance into their inter-firm governance.

7 LIMITATIONS AND FUTURE RESEARCH

As with all studies, there are limitations in this research. The first limitation lies in the use of single case study. Our results were based on a single firm, and our research framework assumed firms can use IT to manage their business exchange with their partners. Though the selected firm can meet our research requirement, there is still needed to be careful to interpret the results to different firm contexts especially for those with low level of IT application. Second, though our studies focus on the underlying interaction process between contractual and relational governance, the research framework assumed firms initially used contracts to manage their inter-firm cooperation. However, it is possible
that firms initially used inter-firm relationships to manage cooperation. For instance, inter-firm cooperation may establish on inter-firm relationships such as family business or friend recommended business. Thus, a comparative case study is needed in the future research by extending another single case started from relational governance to provide more in-depth results.

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