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The influence of resource bundling on the speed of strategic change: Moderating effects of relational capital

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Abstract Integrating the theoretical perspectives of resource orchestration and relational capital, this research examines how the managerial capability involved in resource bundling approaches (i.e., stabilizing, enriching, and pioneering) affect the speed of strategic change, and how managerial ties (i.e., government ties, customer ties and supplier ties) as external resources influence the effects of resource bundling capabilities on strategic change speed. Using data from 508 Chinese firms, we demonstrate that the stabilizing bundling process is negatively related to the speed of strategic change, and enriching and pioneering bundling processes are positively related to the speed of strategic change. Importantly, we find that specific effects of resource bundling on strategic change speed are influenced by different types of external social relationships. These results suggest that managerial capabilities and external ties affect the speed with which strategic change can be implemented.

Keywords Dynamic capability · Relational capital · Resource bundling · Strategic change speed

Increasing globalization has enhanced competitive uncertainty which often makes a competitive advantage deteriorate more quickly (Bettis & Hitt, 1995; D'Aveni, 1994). Therefore, managers seek to establish a series of temporary advantages (D'Aveni, Dagnino, & Smith, 2010) through quickly adjusting their strategy to respond to

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environmental change. The speed of changes becomes more important for gaining (beating competitors) and/or sustaining (staying ahead of competitors) competitive advantages. Furthermore, the speed with which firms are able to change their strategies influences the amount of market value created (Pacheco-de-Almeida, Hawk, & Yeung, 2010; Pacheco-de-Almeida, & Zemsky, 2007). Especially, frequent changes in market environments in emerging economies exemplified by China often produce more market opportunities (Li, Wei, & Liu, 2010b; Wright, Filatotchev, Hoskisson, & Peng, 2005); in these environments, firms need to make changes that allow them to quickly exploit these opportunities earlier than the competitors.

Speed of strategic change (SSC) refers to the time required to formulate and implement a new strategy (Baum & Wally, 2003; Dooley, Fryxell, & Judge, 2000; Eisenhardt, 1989; Yi, He, Ndofor, & Wei, 2015). Speed of strategic change describes how fast firms are able to implement a new strategy. To efficiently realize rapid strategic change, firms must effectively leverage their resources (Kraatz & Zajac, 2001; Uhlenbruck, Meyer, & Hitt, 2003). The resource management perspective suggests that firms need to orchestrate their resources to create new capabilities that are then used to implement strategies. Therefore, the processes to create new capabilities influence the speed with which changes in strategy can be made (Sirmon & Hitt, 2009; Sirmon, Hitt, & Ireland, 2007; Sirmon, Hitt, Ireland, & Gilbert, 2011). Prior research has examined the importance of changing capabilities for making organizational changes, yet there has been little research that explored the linkage of specific resource orchestration process to strategic change. This study has been designed to fill this gap by examining the effects of resource bundling processes to create capabilities for implementing new strategies (strategic change) and the speed with which they accomplish it.

Particularly, facing turbulent market competition and a newer and underdeveloped market system (Peng, 2003; Li, Zhou, & Shao, 2009), many firms in emerging economies (i.e., China) often have insufficient resources to change their strategy quickly (e.g., lack of capabilities to implement a new strategy efficiently). And, new strategies are often needed to compete effectively in such a dynamic market environment (Wright et al., 2005). As required in the current competitive landscape (in China and worldwide), these firms have to integrate external resources with internal resources and reconfigure internal capabilities to improve their competitive position in the market (Sirmon, Gove, & Hitt, 2008; Tsai & Ghoshal, 1998). Further, because of the Chinese business culture and an imperfect market system (Hitt, Ahlstrom, Dacin, Levitas, & Svobodina, 2004; Li, Chen, Liu, & Peng, 2014), Chinese firms build and value external social relationships (Li et al., 2009), leveraging them to strengthen internal capabilities for strategic purposes (Ahlstrom, Levitas, Hitt, Dacin, & Zhu, 2014; Li & Zhang, 2007). However, because of the lack of prior research, we need to better understand the special relationships among internal capability development, external resources, and firms' strategic changes. As such, this study focuses on an important research question: how do firms' resource bundling processes affect the speed of strategic change (SSC) and how are these relationships influenced by external resources held by managers?

In order to answer this research question, drawing upon an engaged social research model (Van de Ven, 2007), we develop a theoretical model linking resource bundling, external relationships, and the SSC. Our contributions to strategic management research are as follows. First, by exploring the different effects of three bundling processes on

SSC, we extend prior work that has examined the effects of resource orchestration on firm strategies and outcomes (Sirmon & Hitt, 2009; Sirmon et al., 2008). Much of the prior research has focused on the external causes of change and how decisions to change strategies are made. For example, prior research examines the processes used to make strategic decisions (Brown & Eisenhardt, 1997; Eisenhardt, 1989) and the initiation of competitive actions (largely tactical) (Chen & Hambrick, 1995). This research extends our understanding of the SSC by showing the influences of the internal management of resources. Second, we answer the call for examining the role of external relationships in managing resources and SSC (Eisenhardt & Schoonhoven, 1996). More specifically, this study focuses on how firms' external relationships moderate the effects of the bundling of resources to improve or create capabilities on SSC; it examines the interdependence of managing internal and external resources for accelerating SSC. Finally, this study theoretically integrates the resource orchestration and relational capital perspectives to understand the pace of implementing strategic change, and empirically tests the relationships. Thereby this research extends our understanding and application of relational capital theory and resource management theory.

Theoretical development and hypotheses

Strategic change often occurs in highly uncertain market environments (Brown & Eisenhardt, 1997; Eisenhardt, 1989). Many industries have become dynamic in recent years because of a "high velocity" competitive landscape resulting from increased globalization, growing competition from emerging economy firms, interdependence of international financial markets, and new technological developments (Bogner & Barr, 2000; Bourgeois & Eisenhardt, 1988; D'Aveni et al., 2010). In this environment, formulating the right strategy but implementing it after competitors have already implemented strategic changes is likely to cause the loss of a competitive advantage and/or foreclose the possibility of gaining an advantage (Chen, 1996; Porter, 1980). Therefore, firms need to accelerate the speed of their strategic change to obtain a competitive advantage (D'Aveni et al., 2010; Hitt, Keats, & DeMarie, 1998), especially in emerging economies such as China with a transitioning market system that is in a state of continuous change (Li et al., 2014; Wright et al., 2005). Thus, to change an existing strategy rapidly can actually reduce high risks the firms experience from government policy adjustments and changes in the industry (Hoskisson, Eden, Lau, & Wright, 2000). The changes in strategy may also help a firm to exploit new opportunities in the emerging market (e.g., from growth in economic prowess, major institutional changes favoring specific industries, or the economy as a whole) (Day, 2011).

Given the importance of the SSC, resource inertia represents a major obstacle (Gilbert, 2005). Previous resource commitments bounded with an outdated strategy often lead to a slower strategic change process (Kraatz & Zajac, 2001). However, inspired by Teece, Pisano, and Shuen's (1997) seminal work on dynamic capability, research has changed from a static view on resource endowment to a more dynamic focus on restructuring resources bundles to accelerate strategic change (Sirmon et al., 2011). According to dynamic capability, the speed of strategic change depends on the capabilities to restructure internal and external resources.

While holding valuable, rare, difficult-to-imitate, and non-substitutable resources provides the opportunity to create a competitive advantage (Barney, 1991), these resources must be bundled into capabilities and effectively leveraged to achieve the advantage (Eisenhardt & Martin, 2000; Sirmon et al., 2007, 2011). To make these changes quickly and effectively requires the appropriate set of capabilities created through the managerial bundling of resources with the resource bundles configured to implement the changes desired. Given the need for speed of the change, firms differ in the processes used to orchestrate resources in ways that help to formulate and implement a new strategy. Therefore, to accelerate strategic change, managers must choose effective ways to orchestrate the firm's resources (Adner & Helfat, 2003; Teece et al., 1997).

Work on dynamic resource management has identified three resources bundling approaches to include resource stabilizing, enriching, and pioneering (Sirmon et al., 2007). These three resource bundling processes each play a unique role in the use of the firms' resources, and thereby influence the speed of strategic changes in different ways.

The first approach is the stabilizing bundling process. It is designed to make incremental improvements to firms' existing capabilities, and it can be used to increase the production scope and market share of existing products (Sirmon et al., 2007). Therefore, the firms are unlikely to make major changes in the strategy used to leverage those capabilities, rather making perhaps incremental changes. Over time, this approach can lead to path dependence in the resource portfolio and inertia which reduce the SSC. Further, firms emphasizing the stabilizing bundling process commonly maintain consistency in their routines (Kelly & Amburgey, 1991; Nelson & Winter, 1982) to enhance efficiency over time. In turn, embedded routines lead to inertia, which increases the difficulties for a firm that desires to make strategic changes and do so quickly. As such, the implementation of strategic changes is likely to encounter resistance thereby slowing the process. Such an approach that only "refreshes" and incrementally improves existing capabilities is unlikely to be effective in a dynamic environment except in the short term. Although firms may have the financial or other slack necessary to maintain resource bundling flexibility (Sanchez, 1995), the level of flexibility is limited by the managerial capability to engage in different types of bundling processes. Thus, a stabilizing bundling process that makes incremental improvements in existing capabilities supports the current strategy and makes it difficult to develop and implement a new strategy quickly. In short, it works against strategic change. These arguments lead to the following hypothesis:

Hypothesis 1 The stabilizing bundling process has a negative effect on the speed of strategic change.

The second approach is the enriching bundling process. It is designed to extend existing capabilities and add new skills to the repertoire; it focuses on the evolution of a firm's capabilities that often respond to the changes in the market competition and transactions (Sirmon et al., 2007). In fact, firms emphasizing enriching bundling process are generally trying to continuously improve existing capabilities so that firms can better compete in the new market environment (Day, 1994).

Through re-bundling firms' existing resources, configuring these resources in different ways and using new resources, firms can better respond to changes in the market quickly (Li et al., 2014; Sirmon et al., 2007), therefore benefiting from more rapid

strategic change. Further, implementing a new strategy or revising an existing strategy often requires new capabilities (Helfat et al., 2007; Kaplan & Norton, 2006). In this case, the purpose of firm's strategy is to leverage new or reconfigured capabilities to respond to new opportunities in the market or to unique competitive moves by their rivals. The enriched capabilities help to implement the new or revised strategy more quickly in order to remain ahead of or catch up to rivals. For example, if a firm develops the new skills to enrich its business innovation capability, it can not only improve the current products, but also develop and introduce new products to the market (Kessler & Chakrabarti, 1996), both of which could support faster strategic change.

This is exemplified by Alibaba, one of the largest e-commerce companies in the world. Alibaba improved its existing third-party payment system (i.e., enriching an existing capability), which facilitated the development of a new business called Yu'E Bao (i.e., new service), a money-market fund promoted by Alipay. These changes helped the firm to realize its major strategic change from an e-commerce platform business into an Internet finance business; meanwhile, Alibaba accomplished these changes and the major transformation of its strategy rather quickly (i.e., SSC), and obtained the first license in this industry from the Chinese government. The strategic change made Alibaba the leader in the Internet finance business in China. These arguments, therefore, suggest the following hypothesis:

Hypothesis 2 The enriching bundling process has a positive effect on speed of strategic change.

The third approach is the pioneering bundling process. It is designed to create new capabilities that add value to the current capabilities or that replace one or more of them (Sirmon et al., 2007). The pioneering bundling process is based on Schumpeterian logic and can often produce capabilities that help implement and support a new entrepreneurial strategy (Sirmon et al., 2007; Smith & Di Gregorio, 2002). Pioneering is more likely than the other processes to produce radically new capabilities (Ahuja & Lampert, 2001). These new capabilities are commonly created from new resources, a combination of newly acquired/developed resources and current resources or perhaps, by identifying new uses for existing resources (Kogut & Zander, 1992; Morrow, Sirmon, Hitt, & Holcomb, 2007).

Importantly, the new capabilities can help a firm to implement a new strategy that responds to major changes in their markets. In many industries, changes in the market are becoming increasingly common (occurring on a regular basis) and, in turn, necessitate rather major changes in strategy and fast implementation (D'Aveni, 1994; Sirmon, Hitt, Arregle, & Campbell, 2010). Firms with stronger pioneering bundling processes can be more proactive and can move quickly because novel capabilities may be helpful in creating new businesses and entering new markets. In this way, the firm orchestrates new assets to provide strategic flexibility needed to respond to a dynamic competitive environment (Adner & Helfat, 2003; Hitt et al., 1998, Sirmon et al., 2011).

Firms emphasizing pioneer bundling processes can often more easily avoid historical path dependent learning and core rigidities (Leonard-Barton, 1992). Thus, firms with a stronger pioneering bundling are often best able to adjust their strategy and to have the knowledge necessary to implement the new strategy in a time effective

manner. In fact, because of the regular changes in the competitive landscape (D'Aveni, 1994), these firms can accelerate SSC to achieve a series of temporary advantages. Therefore:

Hypothesis 3 The pioneering bundling process has a positive effect on speed of strategic change.

Moderating effects of relational capital

The effect of the resource bundling processes is influenced by the firm's context (Sirmon et al., 2007); in particular, its relationships with external parties. Few firms hold all of the resources they need internally. Therefore, they must seek additional complementary resources from external sources. As such, building effective external relational capital is important. Moreover, the value of relational capital is increased when formal, market-supporting institutions are weak or inefficient (Batjargal et al., 2013; Peng, 2003); When operating in these conditions, firms must build relational capital as an informal mechanism to gain access to needed external resources (Li et al., 2014).

Relational capital refers to the mutual benefits that emanate from a relationship between independent parties (Dyer, Kale, & Singh, 2004). Embedded social relationships, which result in relational capital, have attributes of trust, information transfer and joint problem solving (Uzzi, 1997). These relationships also involve commitment and expectations of reciprocity (Zucker & Darby, 2005). Relational capital is an important source of resources for improving capabilities and developing new ones to support the implementation of major strategies (and changes thereof). Important external relationships include those with clients/customers, suppliers, and government officials.

At first, customers are a highly important external stakeholder group, and only by providing value to customers that is superior to that provided by rivals do firms gain a competitive advantage (Sirmon et al., 2007). Firms with good customer relationships are better able to identify what their customers' current needs are and whether their products are providing them value that is superior to what can be provided by competitors (thus hold a competitive advantage). If customers are receiving superior value thereby satisfying their current needs, they are less likely to desire major changes. As such, they prefer incremental improvements to the current products in many cases because they are satisfied with the value received currently. While a good customer relationship can help firms to identify potential or future customer needs (desires), these are often less apparent to firms holding a competitive advantage. To understand and meet the needs of current customers is often perceived to be more practical and less risky than to change the strategy based on the likely potential needs of customers (March, 1991). Firms with stronger customer ties should be better able to leverage their capabilities to satisfy customers' current demands.

Additionally, the stabilizing bundling process promotes existing capabilities and leads to path dependencies in learning, which are unlikely to produce new skills. When these firms have a closer relationship with customers, they often focus more on leveraging existing capabilities to meet the current needs of customers. Stabilizing bundling processes and the resulting reinforcement of current capabilities likely harm the firms' ability to respond to changes in the marketplace (e.g., competitors' strategic

changes). The stabilizing process increases inertia in the existing capabilities and, in turn, delays the speed of formulating and implementing new strategies. As a result, a closer relationship with customers reinforces the negative effects of stabilizing on SCC.

Hypothesis 4a Strong relationships with customers strengthen the negative effect of the stabilizing bundling process on SSC.

With increasing global competition even in local markets and continuous advancements in technology, customer needs and desires are likely to change frequently although some or most of them may be incremental (Atuahene-Gima & Ko, 2001). Closer relationships with customers can help the firms to identify those changes and even to forecast them, which allows them to be better prepared to satisfy them (Li, Liu, & Zhao, 2006; Yli-Renko, Autio, & Sapienza, 2001). For example, managers in firms with close relationships with customers are likely to learn information when the current products are not meeting the needs of customers as effectively as in the past or when the customers' needs are changing (Trapido, 2013). Effective understanding of customers' needs, especially at the time when they are changing, allows firms to change their capabilities and routines to help them respond to those changes. Thus, firms with stronger enriching bundling can provide improved products that better meet customers' incrementally changing needs by adding new resources into their resource portfolio and rebundling them to enrich the firm's capabilities in an efficient manner (Zhou & Wu, 2010). In this case, firms use closer customer ties to provide information to more effectively leverage the enriching bundling process to further enhance the current set of capabilities, which helps them to implement changes to their current strategy that satisfy customer demands (Grewal & Tansuhaj, 2001). In this way, relationships with customers help firms to more effectively use the enriching bundling process to implement a revised strategy. In effect, relationships with customers "enrich" the effects of the enriching bundling process.

Hypothesis 4b Strong relationships with customers strengthen the positive effect of enriching bundling process on SSC.

Firms with closer relationships with customers usually have a stronger customer orientation and, thus, attempt to effectively service customers' demands (Li et al., 2006; Zhou & Wu, 2010). However, current customers are rarely the source of information to identify radically new products, because most customers primarily focus on current products and, thus, provide useful information for incremental improvements in the current product lines (Ulwick, 2005). Alternatively, the pioneering bundling process creates new capabilities and/or radically reconfigures current capabilities often adding new resources to create additional functions. These newly created capabilities are often intended to help implement a new strategy perhaps addressing new markets or different market segments. Thus, firms must reach out to new customers with different needs and desires. Because current customers' lack knowledge of and/or interest in novel products or those that serve different market segments, they are unlikely to be helpful in this process. In fact, firms that have highly embedded relationships with customers may find it difficult to develop new capabilities needed and to use them to implement a new strategy. At least, the process of implementing a new strategy is likely to require more time because of the lack of information from current customer base and their potential

resistance to change (Atuahene-Gima & Ko, 2001; Li, He, Lan, Yiu, 2012). These firms must invest time and resources into educating their customers about the value of novel products and services and overcoming their resistance to change. Therefore, a closer relationship with customers reduces the positive effect of the pioneering bundling process on the SSC.

To develop and commercialize radically new products requires knowledge and skills beyond current capabilities, even those that have been previously enriched (Balakrishnan, & Wernerfelt, 1986). Thus, additional (new) capabilities must be developed through the pioneering bundling process. In turn, creative bundling may necessitate the integration of two previously unrelated matrices of knowledge (Smith & Di Gregorio, 2002). Because of this, the outcomes of pioneering are rarely based on information from current customers. Even more, information from current customers is likely to be incomplete for these purposes and requires more time and effort to obtain, perhaps because of their tacit nature.

Additionally, potential customers in new markets are likely to be different from firms' current customer base. As such, firms will need to invest time and effort into learning potential new customers. In addition, the new market for the firms will require knowledge about potential rivals who also may be different from rivals with whom they compete in the current market(s). A strongly embedded relationship with the current customers will make it difficult to break path dependence and learn new markets, potential customers and rivals. Overcoming the resistance to change the firm's current knowledge stock and extending the firm's ability to absorb the new knowledge may require time, which will likely be exacerbated by embedded relationships with current customers. All of these reasons suggest that a strong relationship with current customers is likely to weaken the positive effects of the pioneering bundling process on the SSC. These arguments lead to the following hypothesis:

Hypothesis 4c Strong relationships with customers weaken the positive effect of pioneering bundling process on SSC.

Suppliers are important because they provide the quality goods needed in a timely and efficient manner, thereby helping the firm to produce quality products in an efficient manner (Petersen, Handfield, & Ragatz, 2005). Further, suppliers are an important source of vital information and knowledge in the value chain (Petersen et al., 2005; Porter, 1985). It has become common, for example, for external suppliers to provide information to and/or directly participate in a firm's internal product development and design teams (Rothaermel, Hitt, & Jobe, 2006). Suppliers' involvement helps firms in developing incremental innovation to improve a firm's current product line (Clark & Fujimoto, 1991; Eisenhardt & Tabrizi, 1995; Rothaermel et al., 2006). Thus, closer relationships with suppliers encourage the suppliers to provide goods in a timely manner and to transfer information and knowledge that helps the firm to continue to provide value that is superior to that provided by competitors.

Additionally, the firms with closer supplier relationships often expect these suppliers to make firm-specific investments and to provide goods that are tailored to the focal firm's needs (Dyer, 1996). Such investments and close relations between the firms and their suppliers can be critical to sustain a competitive advantage by making it more difficult for rivals to imitate the firms' capabilities and end products (as explained

above). However, because of the costs of firm specific investments, suppliers are often reluctant to make major changes (Li, 2005). They are more likely to facilitate the stabilizing bundling process producing incremental improvements in the current capabilities rather than add other products requiring greater changes on their part. Suppliers are invested in the current product line and helping to improve it in order for the firm to maintain its current competitive advantage, which in turn helps the suppliers to continue to earn returns on their firm specific investments. As a result, strong relationships with suppliers generally reinforce the inertia that can result from the stabilizing process and, in turn, slow the implementation of strategic change.

Hypothesis 5a Strong relationships with suppliers strengthen the negative effect of stabilizing bundling process on SSC.

When focal firms desire to serve new business areas, they may ask existing suppliers to provide new materials or services and do so in a timely manner. This is especially the case if the market to be served is new because of the potential first-mover advantages. However, existing suppliers commonly resist such changes because of their previous investments to service the current product line and the efficiency they gain from providing existing materials or services. Thus, existing suppliers are likely to present a challenge in gaining their support for a major strategic change (Markóczy, 2001). They may oppose even enriched capabilities that lead to major improvements in current products when they require major changes in the goods provided by the suppliers. Radically new products likely require even more significant changes in the goods the supplier needs to provide. This resistance to change resulting in fewer useful inputs and a lower willingness to coordinate changes is likely to slow the process of implementing strategic change.

Even with sufficient competition among suppliers, the focal firm is likely to experience delays in gaining new suppliers and getting them "up-to-speed" on their requirements. Also, they probably need information from the new suppliers to efficiently use their more enriched and/or new capabilities to implement a new strategy. In turn, these changes and needs to integrate new supplier goods and information to effectively leverage the altered capability set will slow the speed of new strategy implementation. Furthermore, the focal firm may need to build a stronger relationship with the new suppliers to establish trust which often requires time. Thus, firms with a close relationship with their suppliers find it difficult to use enriching and pioneering bundling processes to create enriched and/or new capabilities that facilitate the implementation of a strategic change quickly. Strong relationships with suppliers, therefore, weaken the positive effects of these bundling processes on the SSC. The arguments presented above suggest the following hypotheses:

Hypothesis 5b Strong relationships with suppliers weaken the positive effect of enriching bundling process on SSC.

Hypothesis 5c Strong relationships with suppliers weaken the positive effect of pioneering bundling process and SSC.

Governments often control a significant portion of strategic factors needed to compete, especially in emerging economy countries, and they commonly exercise considerable power in the allocation of those resources (Li, Poppo, & Zhou, 2008; Li & Zhang, 2007). Additionally, governments often have a major influence on the strategies of firms through their economic policies, laws and regulations of the market. They are especially critical in emerging economies (Li et al., 2006; Peng & Luo, 2000). A primary way in which they affect the firms' strategies and/or the outcomes of those strategies is through the formal institutions that they construct (Ahlstrom et al., 2014; Hitt et al., 2004; Holmes, Miller, Hitt, & Salmador, 2013).

Changes in formal institutions (e.g., regulations) often create new market opportunities (Li, Peng, & Macaulay, 2013). A close relationship with government officials or units can provide focal firms access to information about the changes and the new or revised institutions implemented by the government. Access to such information can help the focal firm to have a better understanding of the true intention of the policy changes (Sheng, Zhou, & Li, 2011). As such, firms can leverage a close relationship with government to enhance the effects of bundling processes on the implementation of strategic change.

While it is important to most government units that the social welfare of their citizens is optimized, they also understand the need for change, especially in those countries trying to further develop their economies (Wright et al., 2005). In order to accelerate economic development, government officials and units recognize the necessity of supporting firms' strategic change to take advantage of the opportunities emanating from institutional changes (e.g., China's transition to a market-based economy) (Li et al., 2013; Wright et al., 2005). In these conditions, firms can benefit from stronger relationships with government in order to obtain access to valuable resources perhaps earlier than others or even fully occupying. These resources may be valuable to firms to enrich their capabilities thereby helping them to implement strategic changes more efficiently. A leading example of an emerging economy is China. Its economic growth has exceeded 9 % on average since the 2000s (Hitt & He, 2008) although it has moderated slightly in recent years due to the global economic recession (still achieving annual growth of about 7 %). China's institutional environment has also changed rapidly, especially in recent years. Furthermore, the Chinese government provides institutional support for firms to develop innovations and to invest and compete in international markets. Therefore, firms with closer government relationships have special access to policy information and other resources to make strategic changes (Hillman & Hitt, 1999). The policy information available through these relationships allows them to enhance their capabilities and to implement strategic changes more quickly. For example, firms with strong governmental ties in China are likely to engage in processes that create capabilities allowing them to be more competitively aggressive (e.g., move into new international markets) (Hitt, Li, & Worthington, 2005; Lee, Lee, & Pennings, 2001; Park & Luo, 2001). Thus, strong ties with the government helps firms support the capabilities needed to implement both incremental and major strategic changes more quickly. These arguments suggest the following hypotheses:

Hypothesis 6a Strong relationships with government weaken the negative effect of stabilizing bundling process on SSC.

Hypothesis 6b Strong relationships with government strengthen the positive effect of enriching bundling process on SSC.

Hypothesis 6c Strong relationships with government strengthen the positive effect of pioneering bundling process and SSC.

Based on discussions above, we formulate our conceptual model in Fig. 1 to explain how the resource bundling processes affect SSC, and how managerial ties moderate this relationship.

Methodology

Sample

We collected data through a specially designed survey instrument from companies in China. To reduce the potential for systemic errors caused by differences in the economy and culture across different regions in China, we chose representative firms from six different provinces in eastern, central, and western China and of a broad scope of industries and sizes. In China, the main economic development regions include the Yangtze River region, Pearl River region, Bohai Sea region, western region, northeastern region, and middle region. In our sample, the Jiangsu province is representative of provinces in the Yangtze River region; the Guangdong province is the most important province in the Pearl River region; Shandong is the biggest province in the Bohai Sea region; Jilin is located in the middle position of three northeastern provinces; Shaanxi is a representative province in the western region (it follows a development strategy representative of the Chinese national strategy); Henan is the biggest province in the middle region. Thus, these six provinces represent different levels of economic development and even different cultures (subcultures) across different regions in China.
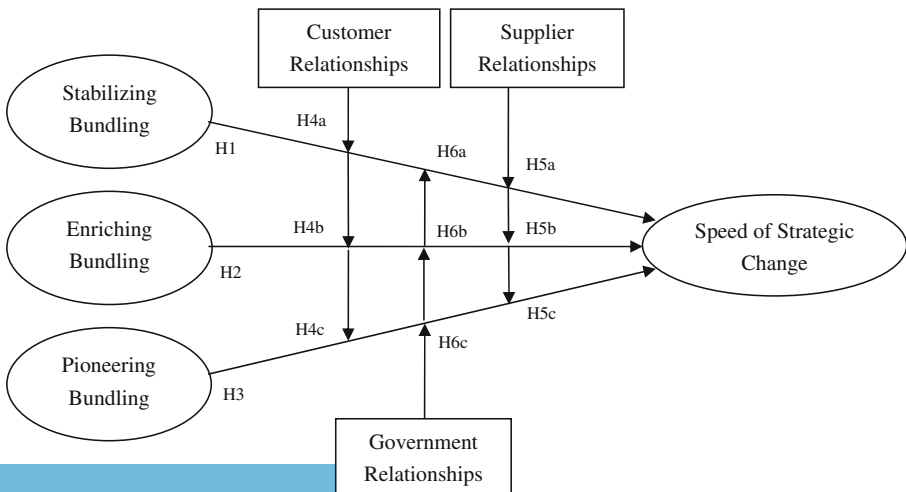

Fig. 1 Conceptual model

Further, we tested the representativeness of the six provinces in economic development by using economic development indicators (e.g., GDP and increases in the rate of GDP relative to all 31 provinces in China), dividing them into three groups (i.e., high, middle and low levels of economic development). We found that Jiangsu and Guangdong are in the High group, Henan and Shandong are in the Middle group, and Jilin and Shaanxi are in the Low group, which suggests the six provinces from which we collected data are representative.

With the support of six provinces' local governments, we obtained lists of approximately 5,000 firms, and randomly chose 750 firms as the target for our sample. Thus, these 750 enterprises were approached to complete the survey, of which 616 enterprises provided information and 108 of these were discarded because of inadequate data. As a result, 508 firms provided complete and usable data, an effective response rate of 67.7 percent. In order to test the reliability of the data from sample firms, we asked at least two members in the top management team to answer our questions independently. Respondents to this survey were CEOs and COOs, or other senior executives who could respond effectively from either a strategic or a general operational perspective. Respondents averaged more than seven years of experience with the same company, exceeding the 5-year time frame for our dependent and independent variables. Although the surveys were completed by CEOs and COOs (and a few other top executives) whose time is often highly valuable, this response rate is quite high.

Survey design

The survey was originally developed in English and was translated from English to Chinese by two scholars working independently. When the translation was completed, the Chinese survey was separately back translated by two other scholars to ensure the consistency between the English and Chinese versions.

A pilot test was conducted with 18 managers, whose responses were not included in the final study. During the process, interviewers checked each item with pilot test participants to make certain that all items could be accurately understood. After that, 12 interviewers discussed the potential problems identified in the pretesting, and made necessary modifications to the survey instrument. This modified version was checked by a native-English-speaking professional who is also accomplished in Chinese to ensure that the modifications did not change the original intent of the English version. Additionally, three entrepreneurs were invited to examine the Chinese questionnaire with the interviewers and relevant amendments were made according to their advice. Finally, the last version was reviewed by an American professor of Chinese descent to ensure the accuracy of the translation.

We used 12 interviewers to administer the survey, two at each firm. All of the interviewers had the knowledge and capability to conduct survey research. They were PhD candidates with training in research methodology. All of them participated in the pretesting and survey revision processes, so that they understood well the meaning of the questions. In addition, a training course was conducted for the interviewers to ensure reliable and complete responses before the survey was administered. The training communicated the objectives of the study, the appropriate means of directing the managers to complete the survey, and the way to clarify any confusion that the managers might experience.

To reduce the potential for common method bias, we asked two managers to complete the survey independently (Podsakoff, & Organ, 1986). For each company, interviewers administered the surveys to the two executives separately. Later, the interviewers asked respondents for clarification and additional information if there were distinct differences between the two answers to the same question for one company. Each of the two managers completed all of the survey. We averaged data from two managers to measure our variables after checking inter-rater reliabilities.

We tested inter-rater reliability using the correlations method and the ratio method (see Boyer & Verma, 2000, for more explanation). First, we calculated the correlations between two respondents' answers. Mean correlation between two respondents for each of the items was .31, the range was from .19 to .47, and all correlations were statistically significant (Boyer & Verma, 2000), a finding which buttresses the validity of the scales. Second, we calculated the r_{wg} for every construct. The r_{wg} ranges from .83 to .97, which indicates that the inter-rater reliability is acceptable (Boyer, & Verma, 2000).

We checked for potential non-response bias among the 750 firms. All t-values from the responding and non-responding firms on major attributes to include firm size, ownership status, sales, and age were statistically insignificant. Thus, we concluded that the sample was representative (Lambert, & Harrington, 1990).

Measurement

The dependent and independent variables were measured using Likert scales ranging from 1 "strongly disagree" to 5 "strongly agree." All items of each variable are shown in Table 1. We averaged the two responses to each item for each firm to be used in the analyses.

Speed of strategic change was measured using five items modified from the scales used by Baum and Wally (2003), Dooley et al. (2000), and Yi et al. (2015). Principal component analysis indicated that all items loaded on a single factor, with an eigenvalue of 2.960, accounting for 59.196 % of the variance.

Resource bundling

Stabilizing was measured with four items based on the work of Sirmon et al. (2007). Principal component analysis indicated that all items loaded on a single factor, with an eigenvalue of 2.004, accounting for 50.096 % of the variance. *Enriching* was measured using four items based on the work of Sirmon et al. (2007). Principal component analysis indicated that all items loaded on a single factor, with an eigenvalue of 2.789, accounting for 69.717 % of the variance. *Pioneering* was measured with three items, based on the work of Sirmon et al. (2007). Principal component analysis indicated that all items loaded on a single factor, with an eigenvalue of 2.431, accounting for 81.036 % of the variance.

To examine the independence of the three measures of bundling, we completed a principal component analysis of all items in these measures. The results showed that the items loaded on each of the three factors (stabilizing, enriching, and pioneering) as expected, with an eigenvalue of 5.35; rotation sums of squared loadings are 26.917 %, 24.449 %, and 16.467 %, accounting for 67.833 % of the variance. These results support the efficacy of these measures of the three bundling processes. These results

Table 1 Factor loading of each items and Cronbach's alpha of each factor

Factors	Items	References	Loading	Alpha
Stabilizing bundling (Stabilizing B)	Our firm maintains its current capabilities' level of proficiency strongly by:	Sirmon et al. (2007)		.668
	(1) Slightly altering its mix of resources.		.739	
	(2) Making necessary investments in its supporting resources.		.720	
	(3) Restoring weakened resources.		.715	
	(4) Sustaining its underlying resources.		.654	
Enriching bundling (Enriching B)	Our firm improves its current capabilities' level of proficiency strongly by:	Sirmon et al. (2007)		.854
	(1) Improving its resources (employees, machines).		.779	
	(2) Adding better resources from our changing resource portfolio.		.872	
	(3) Replacing resources with incrementally higher quality ones.		.833	
	(4) Using its resources more efficiently and/or more effectively.		.852	
Pioneering bundling (Pioneering B)	Our firm pioneers new (to the firm) capabilities strongly by:	Sirmon et al. (2007)		.882
	(1) Re-combining resources in novel ways.		.895	
	(2) Bundling new, complementary resources together.		.905	
	(3) Uniquely combining new, valuable resources with existing ones.		.901	
Government relationships (Government R)	(1) We ensure good relationships with influential government officials.	Peng, & Luo (2000); Li et al., (2008)	.910	.892
	(2) We have invested heavily in building relationships with government officials.		.929	
	(3) Improving our relationships with government officials has been important to us.		.881	
Customer relationships (Customer R)	(1) We have cultivated close connections with our buyers.	Peng, & Luo (2000); Li et al., (2008)	.848	.861
	(2) We put great emphasis on understanding our buyers' needs.		.912	
	(3) We focus on developing relationships with our buyers.		.898	
Supplier relationships (Supplier R)	(1) Personal relationships with our suppliers are important to the firm.	Peng & Luo (2000); Li et al., (2008)	.853	.797
	(2) We have invested in relationships with the managers of our suppliers.		.902	
	(3) We understand our suppliers' strengths and weaknesses.		.774	
Speed of strategic change (SSC)	(1) We design strategic plans very quickly.	Baum & Wally (2003); Dooley et al. (2000)	.742	.825
	(2) We implement strategic plans very quickly.		.835	
	(3) Our top managers agree with each other very quickly on design and implementation of new strategies.		.823	
	(4) Our employees accept firms' new strategies or strategic adjustments very quickly.		.702	

Table 1 (continued)

Factors	Items	References	Loading	Alpha
	(5) Usually our top managers take actions earlier than those of our competitors.		.736	

provide evidence of discriminant validity. The results of the confirmatory factor analyses reported later support these results and provide additional evidence of discriminant validity of these and other measures.

Relational capital

Following existing literature, we measured all relationship constructs based on the top managers' perceptions. Many of these relationships are built on managerial ties. If some of the relationships are with lower level managers (e.g., customer relationships), they are likely directed by the top managers. In fact, it is not uncommon for top managers to play a role in building and maintaining the relationships with government officials, customers, and suppliers because of their importance to gaining and maintaining a competitive advantage and to value creation. *Government relationships* were captured using three items modified from Peng and Luo (2000) and Li et al. (2008). An example item is, "We ensure good relationships with influential government officials." Principal component analysis indicated that all items loaded on a single factor, with an eigenvalue of 2.467, accounting for 82.233 % of the variance. *Customer relationships* were captured with three items that were used by Peng and Luo (2000) and Li et al. (2008). An example item is, "We have cultivated close connections with our buyers." Principal component analysis indicated that all items loaded on a single factor, with an eigenvalue of 2.357, accounting for 78.553 % of the variance. *Supplier relationships* were measured using three items adopted from Peng and Luo (2000) and Li et al. (2008). An example item is, "Personal relationships with our suppliers are important to the firm." Principal component analysis indicated that all items loaded on a single factor, with an eigenvalue of 2.139, accounting for 71.306 % of the variance.

Control variables

We controlled for a number of factors that might influence a firm's speed of strategic change and resource bundling activities. Firm size, firm age, environmental dynamism, industry type, firm performance, resource slack, top manager risk-taking, and organic structure were included as control variables. *Firm size* was measured by the total number of employees. Firm size was controlled because it serves as a proxy of organizational complexity that might slow the implementation of strategic changes (Baum & Wally, 2003). *Firm age* was measured by the number of years since the formation of the firm. Older firms often become more rigid and less able to change; they are subject to potential inertia as they age. *Environmental dynamism* has been shown to influence the speed of strategic decisions and performance (Baum & Wally, 2003; Eisenhardt, 1989). It was measured by asking firms to indicate to the extent of

environmental change (e.g., product/services quickly become obsolete in our industry) that they faced. It was measured using Likert scales ranging from 1 "strongly disagree" to 5 "strongly agree." The study also controlled the *industry type* because industries differ in the need for strategic changes and implementation thereof. Following Zahra and Nielsen's (2002) suggestion, industries were defined at the 2-digit level of the National Industry Classification in China. To control for industry type, an industry's average score on a given variable was subtracted from a firm's score, and the difference was then divided by the industry's score. Industries studied were: food and clothing (C13–C18), chemical and pharmaceutical (C25–C30), metal smelting and manufacturing (C31–C34), machinery and equipment (C35–C37), electrical and instrumentation (C40, C42, C43), electronic and communications (C41), social services (K75–K84), wholesale and retail (H61–H67), and a category containing the other industries.

We also controlled *resource slack* shown to be influential for strategies and degree if risk assumed (e.g., Tan & Peng, 2003). The resource slack is measured by asking respondents to indicate whether "the firm's retained earnings have been sufficient for market expansion," "the firm has enough financial reserves to have discretionary funds," "it is easy for the firm to secure loans" (Cronbach's $\alpha = .818$; AVE $= .781$; $r_{wg} = .872$). We further controlled for *firm performance* using a measure with three-item scales (i.e., sales growth, return on assets, net profit) (Cronbach's $\alpha = .859$; AVE $= .781$; $r_{wg} = .902$). Furthermore, top management team (TMT) plays a significant role in promoting strategic change; thus, we controlled the potential influence of TMT diversity to reduce the threat of potential endogeneity. According to Wiersema and Bantel (1992), TMT diversity facilitates strategic change through increasing the "willingness to take risk," "receptivity to change," and "creative-innovative decision making." Abundant literature suggest that an organic structure increases autonomy and receptivity to change, lowers centralization of authority, and rules and regulations, leads to more creative-innovative decision-making (Slater, Mohr, & Sengupta, 2014). Therefore, we controlled for the top managers' willingness to take risk and for an organic structure because they are direct proxies of the TMT diversity. We measure *top managers' risk taking* ($r_{wg} = .832$) with one item ("The top managers prefer high risk-high return projects during decision making"). Following the work of Slater et al. (2014) and Su, Li, Yang, and Li (2011), we measured *organic structure* (Cronbach's $\alpha = .772$; AVE $= .637$; $r_{wg} = .882$) with a three-item scale. The items are, "We strongly emphasize getting things done by following formal procedures and processes," "We strongly emphasize holding to tried and true management principles," and "There is a strong insistence on a uniform management style throughout the firm." All three were reversed scored to represent the extent of an organic structure.

Composite reliability and construct validity

The composite reliabilities assessing inter-item consistency was operationalized with Cronbach's alpha. Typically, reliability coefficients of .70 or higher are desired (Cronbach, 1951; Nunnally, 1978). Nunnally (1978) further stated that alpha values slightly lower (> .60) are permissible for newer scales. As Table 1 shows, almost all multi-item measures exceeded the usual .70 benchmark except for the newly constructed scale of stabilizing bundling processes. Its alpha is .67 that is adequate for a new scale. Thus, these measures demonstrate adequate internal reliability.

We assessed the construct validity of the measures using a confirmatory factor analysis (structural equation modeling). A confirmatory factor analysis (CFA) showed that each of the seven indicators loaded significantly on its intended factor, suggesting convergent validity among the items in each scale. The measurement model fitted the data satisfactorily ($\chi^2/df = 3.12$, $p < .001$, RMSEA = .065, GFI = .89, AGFI = .86, NFI = .94, NNFI = .95, CFI = .95, IFI = .95), and all factor loadings were statistically significant ($p < .001$), indicating the uni-dimensionality of the measures (Anderson, & Gerbing, 1988). The fit indices suggest a good fit of the model to the data.

We assessed the discriminant validity of the latent constructs with Chi-square difference tests and AVE method. First, we performed 21 pairwise tests with each pair of constructs chosen from seven constructs. In the test, we compared a restricted model (correlation fixed to 1) with a freely estimated model (correlation estimated freely). The Chi-square difference is statistically significant offering support for discriminant validity (Anderson, & Gerbing, 1988). Second, an examination of Table 2 reveals that the diagonal elements representing the square roots of the average variance extracted (AVE) for each construct are significantly greater than the off-diagonal elements (Hulland, 1999). This satisfies Fornell and Larcker's (1981) criterion for discriminant validity.

Assessing potential common method bias

In order to test the latent dangers in common method variance, we examined the potential for common method variance via two methods: Harman's one-factor test and a CFA analysis based on the suggestions from Podsakoff, MacKenzie, Lee, and Podsakoff (2003).

First, significant common method variance results in one general factor that account for the majority of covariance in the variables. In the first method, we examined a non-rotating exploratory factor analysis with all items of the independent and dependent variables entered. Seven factors resulted, and among them (cumulative variance is 70.270 %) the largest factor explains 31.247 %.

Second, we tested the common method bias with the latent variable approach suggested by Podsakoff et al. (2003) and examined the significance of the structural parameters both with and without the latent common method variance factor in the model. We obtained 21 pairs of variables from seven independent and dependent variables in the model. All significant relationships held after controlling for the latent common method variance factor, which indicated that common method variance was not an issue in this study (Li, Bingham, & Umphress, 2007; Zhang & Li, 2010). We found that in all cases (Podsakoff et al., 2003; Stam & Elfring, 2008), a two-factor model without the common method variance factors showed a superior fit to the data. Overall, these results suggested little threat of common method bias and provided support for the validity of our measures.

Data analysis and results

The descriptive statistics presented in Table 2 show basic information on each factor and zero order correlations among the variables used in the regression analyses. Most correlations are lower than .7 except for that between enriching and pioneering (.701). Further, we tested the discriminant validity of enriching and pioneering, as measured by

Table 2 Descriptive statistics and correlations [a]

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Firm size	2.63	1.45	N/A														
2. Firm age	14.17	14.10	.536**	N/A													
3. Environment dynamism	2.49	.93	.033	-026	(N/A)												
4. Industry type	N/A	N/A	-.047	.008	.099*	(N/A)											
5. Resource slack	2.91	.86	.183**	-.004	-026	.041	(.74)										
6. Firm performance	3.23	.69	.176**	-.031	-.067	-.043	.452**	(.78)									
7. Manager risk-taking	2.44	.81	-.132**	-.080	.091*	.030	-.013	-.041	(N/A)								
8. Organic structure	5.31	1.76	-.271**	-.185**	.148**	.067	.008	.022	.192	(.64)							
9. Stabilizing bundling	3.28	.52	.175**	.083	.045	.010	.290**	.240**	.004	.065	(.58)						
10. Enriching bundling	3.74	.60	.036	-.065	-.007	.047	.317**	.348**	.037	.095*	.554**	(.77)					
11. Pioneering bundling	3.41	.72	-.038	-.122**	.052	.043	.298**	.325**	.115**	.148**	.487**	.701**	(.85)				
12. Customer relationships	4.11	.51	-.069	.006	-.037	.053	.159**	.247**	.052	.046	.218**	.402**	.371**	(.82)			
13. Supplier relationships	3.91	.52	-.113*	-.019	.004	.064	.061	.110*	.054	.053	.207**	.329**	.320**	.593**	(.77)		
14. Government relationships	3.73	.71	.148**	.106*	.001**	.026	.168**	.117**	-.033	-.010	.165**	.203**	.200**	.154**	.197**	(.86)	
15. SSC	3.58	.58	-.085	-.095*	-.023	.011	.289**	-.360**	.126**	.088*	.230**	.459**	.456**	.364**	.312**	.037	(.70)

[a] $N=508$; Numbers in parenthesis on diagonal line are the square root of AVE

** $p < .01$, * $p < .05$ (2-tailed)

the multidimensional scales, by comparing the variance shared by each construct and its measures with the variance shared by both constructs. Together enriching and pioneering, the CFA results ($\chi^2(14) = 271.94$, $p < .001$, RMSEA $= .197$, GFI $= .87$, AGFI $= .73$, NFI $= .94$, NNFI $= .91$, CFI $= .94$, IFI $= .94$) are not better than the results of considering enriching and pioneering separately ($\chi^2(13) = 48.72$, $p < .001$, RMSEA $= .074$, GFI $= .97$, AGFI $= .94$, NFI $= .99$, NNFI $= .98$, CFI $= .99$, IFI $= .99$). Theoretically, the meanings of enriching and pioneering express different characteristics of resource orchestration (Sirmon et al., 2007); thus, we considered enriching and pioneering as two separate factors for the purposes of this research.

Analytical approach

In our model, resource bundling is likely to be endogenous. Firms with different social relationships may choose different resource bundling processes to improve the speed of strategic change. Almost no firm controls all of the resources that it needs to compete effectively in the marketplace, thus it must acquire or gain access to needed resources from external sources. External social relationships can help firms identifying and accessing market opportunities by understanding the needs of customers (Krug & Hendrischke, 2012), obtaining support for R&D and productivity from suppliers (Rothaermel, 2001), accessing scarce resource from government (Li et al., 2012); and, the resources obtained all must be reconfigured to fit with and implement the strategic actions of the firm.

External social relationships may help firms to access the valuable resources (Hitt, Lee, & Yucel, 2002) and facilitate the coordination of resources in firms (Sirmon et al., 2007). Thus, proper model specification should include external social relationships as the antecedents of resource bundling: customer relationships (CR), supplier relationships (SR), and government relationships (GR). To correct for this potential endogeneity, we used a three-stage least squares analysis (Hamilto & Nickerson, 2003; Poppo, Zhou, & Li, 2015).

In Stage 1, as specified in Eq. (1), we ran regressions with three types of resource bundling against three types of social relationship to obtain predicted values of resource bundling. The results (see Table 3) indicate that customer relationships, supplier relationships, and government relationships are all have significant effects on stabilizing resource bundling, enriching resource bundling, and pioneering resource bundling.

Table 3 Standardized estimates of Stage 1 regression analyses

Independent variables	Stabilizing resource bundling (SB)	Enriching resource bundling (EB)	Pioneering resource bundling (PB)
Customer relationships (CR)	.142**	.368***	.385***
Supplier relationships (SR)	.099†	.136*	.184**
Government relationships (GR)	.091**	.112**	.135**
Adjusted R^2	.066	.186	.164
Model F	12.966	39.662	34.169
Highest VIF	1.570	1.570	1.570

$N = 508$; *** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .1$ (two-tailed)

These results support the use of the three-stage model to control the effects of social relationships for the potential endogeneity.

We then obtained residuals that are free of influence from three types of social relationships. We ran regressions with stabilizing bundling against customer relationships, supplier relationships, and government relationships as Eq. (1) to obtain Stabilizing bundling $_{residual}$ (Stabilizing bundling–Stabilizing bundling $_{predicted}$). In this way, we also obtain enriching bundling $_{residual}$, and pioneering bundling $_{residual}$.

$$\text{Stabilizing bundling} = b0 + b1(\text{customer relationship}) + b2(\text{supplierrelationship})$$
$$+ b3(\text{government relationship}) + \text{error}. \tag{1}$$

$$\text{Enriching bundling} = b0 + b1(\text{customer relationship}) + b2(\text{supplierrelationship})$$
$$+ b3(\text{government relationship}) + \text{error}. \tag{2}$$

$$\text{Pioneering bundling} = b0 + b1(\text{customer relationship}) + b2(\text{supplierrelationship})$$
$$+ b3(\text{government relationship}) + \text{error}. \tag{3}$$

In Stage 2 and Stage 3, we used the OSR (optimal scaling regression) analytical approach (Didow, Keller, Barksdale, & Franke, 1985) to test our hypotheses. Because we used multi-item measures of independent variables and moderating variables based on 5-point Likert scales, from 1 (strongly disagree) to 5 (strongly agree), OSR is more suitable to analyze these ordinal categorical variables. In addition, OSR can iterate to find a best regression model after using a non-lineal transformation to transform the original categorical variables (Ma, Pang, Chen, Chi, & Li, 2014; Zhang, 2002). Therefore, based on our survey method and our final sample, optimal scaling regression is the most efficient analytical approach to use in this study. The independent variables and moderating variables were mean centered prior to the calculation of interaction terms as recommended by Aiken and West (1991).

In Stage 2, we used stabilizing bundling $_{residual}$, enriching bundling $_{residual}$, and pioneering bundling $_{residual}$ as the indicators of stabilizing resource bundling, enriching resource bundling, and pioneering resource bundling, respectively. That is, we regressed SSC against stabilizing bundling $_{residual}$, enriching bundling $_{residual}$, and pioneering bundling $_{residual}$, and the controls (see Model 2 in Table 4).

$$\text{Speed of strategic change} = b0 + b1(\text{stabilizing bundling}_{residual})$$
$$+ b2(\text{enriching bundling}_{residual})$$
$$+ b3(\text{pioneering bundling}_{residual}) \tag{4}$$
$$+ b \text{ controls} + e$$

In Stage 3, we added interaction terms to test the moderating effects. To assess the effect of each moderator, we added interactions stepwise as in Model

3 and then tested the full model in Eq. (5) (Model 4 in Table 4). We checked for normality by conducting a Kolmogorov-Smirnov test, which supported the univariate normality assumption. Further, we calculated the variance inflation factor (VIF) values and all VIFs are below 2, which suggest that multicollinearity is not a problem (Neter, Wasserman, & Kutner, 1985).

Table 4 Standardized coefficient estimates: Multiple moderated regressions

Variables	Strategic change speed			
	Model 1	Model 2	Model 3	Model 4
Control variables				
Firm size	−.201***	−.226***	−.125***	−.113***
Firm age	.014	.063	.027	.021
Environment dynamism	.088**	.095***	−.021	−.008
Industry type	−.066*	−.056†	−.044	−.055*
Resource slack	.206***	.164***	.154***	.157***
Firm performance	.297***	.252***	.175***	.181***
Manager risk-taking	.140***	.136***	.124**	.120**
Organic structure	.049	−.050	.033	.035
Direct effect				
Stabilizing resource bundling (Stabilizing B)		−.119***	−.106**	−.098**
Enriching resource bundling (Enriching B)		.265***	.260***	.256***
Pioneering resource bundling (Pioneering B)		.165***	.167***	.160***
Customer relationships (Customer R)			.285***	.260***
Supplier relationships (Supplier R)			.142***	.183***
Government relationships (Government R)			−.086***	−.116***
Interactions				
Stabilizing B × Customer R				−.092**
Stabilizing B × Supplier R				.138***
Stabilizing B × Government R				.095**
Enriching B × Customer R				.165***
Enriching B × Supplier R				−.156***
Enriching B × Government R				.072*
Pioneering B × Customer R				−.088**
Pioneering B × Supplier R				.094**
Pioneering B × Government R				−.048
R^2	.230	.334	.448	.488
Adjusted R^2	.188	.277	.391	.396
$\triangle R^2$		.104***	.114***	.040***
Model F	5.432***	5.904***	7.801***	5.291***
Highest VIF	1.475	1.541	1.623	1.704

$N = 508$; *** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$ (two-tailed test)

Table 4 reports the regression results of the controls-only model (i.e., Model 1), as well as the second- and third-stage models.

Speed of strategic change $= b0 + b1$ (stabilizing bundling$_{residual}$) $+ b2$ (enriching bundling $_{residual}$) $+ b3$(pioneering bundling$_{residual}$) $+ b4$(customer relationship) $+ b5$(supplierrelationship)$+ b6$ (government relationship) $+ c1$ (stabilizing bundling$_{residual}$ $\times$ customer relationship) $+ c2$ (stabilizing bundling$_{residual}$ $\times$ supplierrelationship) $+ c3$(stabilizing bundling$_{residual}$ $\times$ government relationship) $+ c4$(enriching bundling$_{residual}$ $\times$ customer relationship) $+ c5$(enriching bundling $_{residual}$ $\times$ supplierrelationship) $+ c6$ (enriching bundling$_{residual}$ $\times$ government relationship) $+ c7$ (pioneering bundling$_{residual}$ $\times$ customer relationship) $+ c8$ (pioneering bundling$_{residual}$ $\times$ supplier relationship) $+ c9$ (pioneering bundling$_{residual}$ $\times$ government relationship) $+ b$ controls $+ e$

$$(5)$$

Results

As Table 4, Model 2 shows, the stabilizing resource bundling has a statistically significant negative effect on SSC ($\beta = -.119$, $p < .001$) providing support for Hypothesis 1. The enriching bundling variable has a statistically significant positive effect on SSC ($\beta = .265$, $p < .001$) providing support for Hypothesis 2. And, the pioneering bundling has a statistically significant positive effect on SSC ($\beta = .165$, $p < .001$) providing support for Hypothesis 3.

We used the full model (Model 4 in Table 4) to test the interaction hypotheses.[1] In Model 4, the coefficient for the interaction of stabilizing and customer relationships is negative and statistically significant ($\beta = -.092$, $p < .01$), providing support for Hypothesis 4a. The coefficient for the interaction of enriching and customer relationships is positive and statistically significant ($\beta = .165$, $p < .001$), providing support for Hypothesis 4b. The coefficient for the interaction of pioneering and customer relationships is negative and statistically significant ($\beta = -.088$, $p < .01$), providing support for Hypothesis 4c.

Additionally, the coefficient for the interaction of stabilizing and supplier relationships is positive and statistically significant ($\beta = .138$, $p < .001$) which does not provide support for Hypothesis 5a. However, the coefficient for the interaction of enriching and supplier relationships is negative and statistically significant ($\beta = -.156$, $p < .001$), providing support for Hypothesis 5b. Additionally, the coefficient for the interaction of pioneering and supplier relationships is positive and statistically significant ($\beta = .094$, $p < .01$) opposite of the negative relationship proposed in Hypothesis 5c. Therefore, these results provide no support for Hypothesis 5c.

Next, the coefficient for the interaction of stabilizing and government relationships is positive and statistically significant ($\beta = .095$, $p < .001$), thus providing support for Hypothesis 6a. The coefficient for the interaction of enriching and government relationships is positive and statistically significant ($\beta = .072$, $p < .05$). These results provide support for Hypothesis 6b. However, Hypothesis 6c does not receive support because the coefficient for the interaction of resource pioneering and government relationships is not statistically significant ($\beta = -.048$, $p > .1$).

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[1] All interaction effects were graphed and the interpretations fit well with the results on the graphs. The graphs were not included for reasons of length but they are available upon request from the authors.

Robustness checks

To gain additional insights on the efficacy of our results, we conducted robustness checks to examine the bundling-SSC relationship. First, to provide additional information on the construct validity of our bundling measures, and to address the concern that there might be self-justification in responses by survey informants, we used alternative, objective measures to test our main findings. [2] We collected objective data on 88 firms three years prior. We calculated the percentage change in product inventory, short-term investment, and long-term investment. Here, we use change in product inventory to reflect stabilizing. When change in product inventory is higher, it suggests that firms are likely stabilizing their current capabilities. Additionally, we use the percentage change in short-term investment to reflect enriching current capabilities. Finally, we use the percentage change in long-term investment to reflect pioneering new capabilities. We regressed SSC on these three alternative measures. The results supported the primary findings using the survey measures. Specifically, change in product inventory was negatively and significantly related to the SSC ($\beta = -.198$, $p < .1$). The change in short-term investment was positively and significantly related to the SSC ($\beta = .340$, $p < .1$). The change in long-term investment was significantly related to the SSC ($\beta = .325$, $p < .05$). These results are consistent with the logic and findings reported herein. The results using the objective proxy for stabilizing also support the primary theoretical logic presented and the main results derived in this study. Therefore, the robustness tests provide support for the efficacy of the findings and the construct validity of the bundling measures.

Discussion

This research empirically investigated the relationships among the three of resource bundling processes used, external social relationships and the SSC, by integrating the resource orchestration and relational capital perspectives. Most of the hypotheses have been supported by our results except H5a, H5c, and H6c. This research is premised on the view that resource bundling is an important internal managerial capability and external relationships are sources of potentially important resources useful in developing capabilities. Firms need to effectively leverage the capabilities created from bundling resources to implement strategic change. While external managerial ties provide access to resources outside the firm, these ties can also produce constraints on managerial actions. Thus, the external relationships have both positive and negative influences on the resource bundling-SSC relationship.

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[2] This is a subsample (subgroup) of 88 firms on which the objective data were available. To examine the representativeness of this subsample to the total sample, we ran a t-test to ascertain any differences in terms of SSC and found no statistically significant differences (SSC: Levene's Test for Equality of Variances, $F = 2.946$, $p = .087$; t-test for Equality of Means: (1) equal variances assumed $t = -.893$, $p = .372$; (2) equal variances not assumed $t = -.992$, $p = .323$). Thus, we can use this 88-firm dataset to compare the relationship between three bundling measurements and the objective indictors Li et al., 2010a.

Theoretical contributions

Our primary contribution lies in providing a better understanding of how to manage firms' resources in such a way as to enhance the effectiveness and efficiency of the strategy implementation process. More specifically the contributions of this research involve the identification of how separate managerial resource bundling processes create capabilities that affect the SSC. This research then provides empirical support for the resource orchestration perspective. Our results show that stabilizing has a negative effect and both enriching and pioneering bundling have positive effects on SSC, suggesting the importance of developing better and/or new capabilities for firms to accelerate strategic change. Over time, firms that manage their resources to create incremental improvements in their current capabilities are likely to experience inertia and find it difficult to implement strategic changes quickly. Although such an approach may help a firm to sustain a competitive advantage in a relatively calm (i.e., stable) environment, it is unlikely to do so in a dynamic environment. Alternatively, processes used to enrich current capabilities and to build new ones (pioneer) play an important role in the implementation of strategic change that is often needed in a dynamic environment. These firms are more likely to successfully implement strategic change and to do so in a timely manner. As such, this research suggests that resource bundling is the basis of dynamic managerial capabilities (Adner & Helfat, 2003; Sirmon et al., 2011). It is part of the process that Adner and Helfat refer to as asset orchestration.

Second, we also advance knowledge about the roles of external relationships. Existing research focuses on substitutive roles that relational capital plays in an uncertain market environment especially when formal institutions are weak or inefficient (Batjargal et al., 2013; Davies & Walters, 2004; Guthrie, 1998; Li et al., 2008; Luk et al., 2008; Peng, 2003). Few previous studies have examined the effects of relational capital (specific managerial ties) on SSC and no previous research has focused on how relational capital influences the resource orchestration-SSC relationship. Our results show that several unique external relationships moderate the relationship between different resource bundling approaches and SSC. For example, closer relationships with customers enhance the negative effect of stabilizing on SSC and weaken the positive influence of creating new and unique capabilities (pioneering) on SSC. Alternatively, closer relationships with customers increase the positive effects of enriching current capabilities on SSC. Thus, the relationships with customers help the firms to enrich their current capabilities to enhance the value to their customers and stay ahead of rivals in the short term. Yet, relational capital with customers can harm the firm's abilities to create new capabilities that in turn could provide newer valued products and services to customers and to efficiently implement strategic change. As such, this relationship produces a form of path dependence and limits the firm's ability to create novel innovations required for implementing long-term strategic changes in an efficient manner.

In opposition to our original arguments, suppliers do not appear to support stabilizing bundling efforts (H5a). Likely, they feel that their buyers must create new capabilities to succeed in a dynamic environment. If buyers perform poorly, it will harm the demand for the suppliers' goods. This conclusion is supported by the results of relationships with suppliers on the enriching-SSC and the pioneering-SSC relationships. Thus, for similar reasons, they tend not to be supportive of enrichment efforts

because of the focus on current capabilities. Continuing this argument, the results indicate that relational capital with suppliers enhances the positive effect of pioneering bundling on SSC (H5c). Thus, closer relationships with suppliers have a positive influence on the effects of new (pioneering) capabilities on SSC. Such changes probably create increased costs for suppliers through more investments to support the new capabilities and likely new products that will result from them. Yet, as suggested above, this outcome is likely based on the changing landscape. Research suggests that suppliers have become increasingly important for the development of new products, partly because of greater amounts of outsourcing (Chen, Damanpour, & Reilly, 2010; Song & Di Benedetto, 2008). In other words, suppliers have become integral to the innovation process and, indeed, their inputs are more crucial because they have knowledge and capabilities required but are no longer held internally by the firm (Rothaermel et al., 2006). Suppliers may also view pioneering efforts as producing new market opportunities for them which can increase the demand for their goods. Thus, they are more supportive of these efforts than enriching current capabilities that could require them to make expensive changes in the current goods they provide to support current markets with shorter-term returns (because of continuing changes in the markets). With innovation, suppliers have the opportunity to provide new goods to the firm which is a new source of revenue for them.

The results regarding the effects of relationships with government entities supported some of our theoretical arguments. The prior research on emerging economies suggested the importance of relationships with government entities, and emphasized the ways in which the relationships can support business actions especially in gaining access to needed resources and in deploying them effectively (Li & Zhang, 2007; Peng & Luo, 2000). Yet, our research suggests that the effects of this relationship are not always positive, especially when major changes are required. We found government relationships had no effect on the relation between pioneering resource bundling and SSC (H6c). The resources provided by government likely offer the most help for enriching capabilities that maintain or improve their competitive position in current markets. Even recent government policy changes in China to encourage more innovation succeeded in primarily increasing incremental innovations which support current markets (Tong, He, He, & Lu, 2014).

Based on these results, we demonstrate that the degree to which resource orchestration capabilities have value for SSC depends on the influence of the firm's relational capital. These results confirm and extend our understanding of the influence of external relational capital (Li et al., 2008; Peng & Luo, 2000). The research shows that relational capital in some cases supports the positive influence of resource orchestration practices for efficiently (quickly) implementing strategic change but in other cases, it constrains these influences. Thus, the results support the prior research suggesting that there are positive and dark sides to having strong external relationships (Hitt, Bierman, Uhlenbruck, & Shimizu, 2006). And, the results show that the influence of relational capital varies across external parties with whom the firm has built relationships.

Third, this study represents a step toward theoretical integration of the resource orchestration and relational capital perspectives for the pace of implementing strategic change. Even though swift strategic change is vital for many firms' survival and prosperity over time, no prior research has examined how firms need to manage their resources (and capabilities) to effectively accelerate their SSC. Additionally, no prior

research has focused on the influence of different external relationships on the pace (e.g., acceleration or deceleration) of implementing strategic changes (based on the capabilities developed by bundling resources). We shed new light on the importance of resource orchestration for implementing strategic change. Thus, this research contributes to a greater understanding of the orchestration of resources and building external relationships, thereby extending our understanding and application of theory on relational capital and managing resources. In so doing, this work extends our understanding of the resource based view suggesting that having access to internal and external resources is important for strategic change but how these resources are managed affects the type of strategic change achieved and the speed of its implementation.

Managerial implications

Our findings also have important implications for managerial practice. First, our study provides empirical evidence to highlight the importance of resources for the implementation of firm strategies (Barney, 1991; Kraatz & Zajac, 2001). Our results suggest that holding valuable and rare resources provides a necessary but insufficient condition to achieve a competitive advantage, at least when it is achieved by implementing efficient and effective strategic change. The resources must be shaped into capabilities and then leveraged in order to create superior value for the customer thereby gaining a competitive advantage. Furthermore, competitive advantages are only temporary (D'Aveni et al., 2010; Sirmon et al., 2010), thus, managers need to take actions to improve their stock of capabilities continuously to stay ahead of competition. To do so, managers must "orchestrate" their firm's resources in ways that create and use capabilities to provide superior value to customers.

Our results show that most of the external relationships have both positive and negative influences. Thus, managers trying to quickly create strategic change and implement it in a timely manner to respond to a changes in their environment (i.e., to take advantage of an opportunity or to challenge a threat) must carefully manage and use the resources obtained from different external relationships. In addition to resources provided, the relationships place constraints on managerial actions. In some cases, the constraints are based on the path dependence created by the relationship. In other cases, the external constituent may be less willing to provide resources for certain types of changes.

This can be critical especially for managers in emerging economies such as China because they are facing increasingly uncertain, complex, and competitive global business environments. In such environments, firms are often required to make rapid strategic changes to gain and/or sustain a competitive advantage. Our results suggest that firms can accelerate SSC by leveraging different resource bundling capabilities, and they also can improve the effects of bundling on SSC by building and nurturing certain external relationships to provide information and other necessary resources to support the influence of bundling activities.

To build pioneering capabilities that allow them to create new products and/or enter new markets, firms can best use their relational capital with suppliers and try to avoid or overcome the potentially negative influences from relational capital with customers. Relations with government entities seem to provide little value for these types of strategic actions. Because all firms likely have to engage in stabilizing, enriching and

pioneering processes regularly, managers must also avoid the potential ill effects of these external relationships that may limit their ability to create the capabilities needed and/or to ensure the type of influence needed for rapid implementation of strategic change.

Limitations and future research

This study has some limitations that also indicate directions for future research. First, as prior research has noted, strategic change is multi-dimensional (Rajagopalan & Spreitzer, 1997). We only focused on the speed of strategic change. Other dimensions such as type, magnitude, direction, and likelihood of such change should be explored for a more complete understanding of how resource orchestration influences strategic change. In addition, expect that the effectiveness of leveraging different resource bundling processes for strategic change will possibly depend on external environmental characteristics. Thus, future research on the research question examined by our study should incorporate environmental contingency factors such as munificence and dynamism. Because firms situated in different industries face unique environments (e.g., differences in munificence or dynamism), they may have quite different decision patterns that influence the relationship between resource bundling and SSC. In this study, we view strategic change as positive. However, it is also possible to act too quickly before accurately evaluating the competitive landscape and forecasting the likely changes to occur. When this happens, there is a high likelihood of implementing the wrong strategic change that could produce a loss of competitive advantage.

Further, this study assumed that most firms operate in highly dynamic environments but the industry environments may vary in their degree of dynamism, based on the institutional environments in which they exist. Some formal institutions are designed to constrain dynamism (e.g., economic policies) and place boundaries on the munificence within specific industries (e.g., industry regulations). Additionally, some informal institutions have specific influences on building relationships (e.g., Chinese culture). Future research could study the relationships examined in this research across countries with varying types and levels of institutions. Additionally, because the measurements for the three different types of resource bundling process are based on the conceptual model of Sirmon et al. (2007), and represent the first empirical test using them, more work is needed to examine and show their construct validity in other settings. Thus, future empirical work on resource bundling processes should include objective measures (if good ones can be identified) that proxy these processes to examine the validity of the survey measures and do so in other settings (e.g., other countries).

Finally, the results of our study are based on the Chinese transitional economy and more research is needed to determine how well they generalize to other contexts. Still, there are theoretical reasons to believe that firms in other emerging economies may experience similar dynamics. However, this assumption should be validated by future research in other emerging economies. Moreover, the cross-sectional data used in the study may suggest caution regarding assumptions of causal relationships; thus, longitudinal approaches are needed in future studies to validate the ordered relationships theoretically proposed and examined in this study.

Conclusion

This research provides a view of how capabilities can be developed to create and implement strategic change with due speed. Thus, it makes contributions to our understanding of how resources can be managed and leveraged for strategic positioning. It also provides a more fine-grained understanding of the influences of external relationships on managerial processes to create needed capabilities. In an attempt to follow the recommendations of Van de Ven (2007) in *Engaged Scholarship*, it provides a base for important future research and managerial practice on resource orchestration, relational capital and strategic change.

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