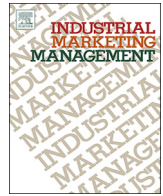




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Contents lists available at ScienceDirect

Industrial Marketing Management

journal homepage: www.elsevier.com/locate/indmarman

Buyer-supplier relational strength and buying firm's marketing capability: An outside-in perspective

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ARTICLE INFO

Keywords:

Buyer-supplier relational strength
Marketing capability
Supplier information sharing
Supplier flexibility

ABSTRACT

Extant literature in marketing capability with an inside-out perspective stresses existing internal resources as the basis for developing marketing capability. This study, taking an outside-in perspective, argues that starting from external environment and developing strong buyer-supplier relationship can help formulate strong marketing capability of the buying firm. Using survey data from 199 Chinese manufacturing buyers who identified 937 suppliers, we found that strong buyer-supplier relationship can breed strong supplier information sharing and supplier flexibility, which fully mediate the effect of buyer-supplier relationship on buying firms' marketing capability. The findings provide support to the outside-in approach and reveal how external inter-firm relationship can be turned into intra-firm capability, and suggest that strong upstream buyer-supplier relationship can be a necessity for building downstream buyers' marketing capabilities. The findings also suggest an alternative strategy for developing marketing capabilities starting from external suppliers, and may help close the gap between marketing capability and dynamic external environment.

1. Introduction

Marketing capability has long been recognized as a crucial determinant for the superior performance of firms (Day, 2011; Dutta, Narasimhan, & Rajiv, 1999; Morgan, Vorhies, & Mason, 2009; Nath, Nachiappan, & Ramanathan, 2010). Marketing capability enables a firm to respond effectively to customer demands in a complex market (Day, 2011; Dutta et al., 1999; Mu, 2015). Based on the resource-based view or the dynamic capability theory, most extant studies emphasize that firms have to develop an idiosyncratic marketing capability to generate competitive advantage by effectively understanding and serving their customers (Greenley, Hooley, & Rudd, 2005; Krasnikov & Jayachandran, 2008; Salunke, Weerawardena, & Mccoll-Kennedy, 2011). These studies focus extensively on discussing internal firm resources and capability bundles that contribute to strong marketing capability (Akdeniz, Gonzalez-Padron, & Calantone, 2010; Dutta et al., 1999). The studies take an inside-out perspective, which begins with looking inside at the firm and then outwards from the vantage point of developing marketing strategies (Castro, 2015; Day, 2011). However, recent studies suggest that such an inside-out perspective can lead to myopia that focuses too much on internal resources and capabilities within the boundary of the firm and constrain explorative initiatives and the adaptive learning of firms (Day, 2011; Mu, 2015; Mu, Bao,

Sekhon, Qi, & Love, 2018). In contrast, an outside-in approach, which begins from the external environment (Jaakkola, Möller, Parvinen, Evanschitzky, & Mühlbacher, 2010; Saeed, Yousafzai, Paladino, & Luca, 2015), empowers the management team to make sense of external changes and leverage resources outside the firm such that the firm is better able to adapt to external market changes and close the gap between internal marketing capabilities and market complexities (Day, 2011; Day & Moorman, 2010; Mu, 2015). However, we still do not know how the outside-in approach works to turn external factors into internal marketing capabilities.

Upstream suppliers are one of the crucial external stakeholders that shape a buying firm's perception of the external environment. Marketing capability that adaptively converts resources into functional outputs in response to market changes hinges not only on the understanding of downstream customer needs but also on upstream suppliers that determine how the firm deploys resources to satisfy market needs (Greenley et al., 2005; Nath et al., 2010). While many studies focus on customer side antecedents of formulating marketing capabilities (Duncan & Moriarty, 1998; Greenley et al., 2005; Webster Jr., 1992), what a firm learns from upstream suppliers and how to organize suppliers to provide flexible products or services are largely overlooked but can significantly affect whether a firm can understand and respond to market changes. We ask in this study whether and how upstream buyer-

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supplier relational strength can help enhance the buyer's marketing capability. Taking an outside-in perspective and based on relational theory, we argue that strong relationships with upstream suppliers can help develop downstream buyers' marketing capabilities by providing an increased level of supplier information sharing and supplier flexibility.

Our findings in this study contribute in the following three aspects. First, our study contributes to the marketing capability literature by extending the research focus from an inside-out to an outside-in perspective. Our findings suggest that strong inter-firm relationships with suppliers can turn into intra-firm marketing capability. While previous studies predominantly focused on internal antecedents of marketing capability (Akdeniz et al., 2010; O'Cass & Ngo, 2011; Trainor, Rapp, Beitelspacher, & Schillewaert, 2011), we reveal that an external inter-firm relationship can also contribute to strong marketing capability. Second, our findings suggest two mediating channels, supplier information sharing and supplier flexibility, that can explain how the outside-in approach works in turning outside relationships into inside capabilities. Supplier information sharing and supplier flexibility make it possible for buying firms to follow the sense-and-respond model based on external environment changes, thereby turning external relationships into internal capability. Third, this study also indicates that a strong upstream buyer-supplier relationship is a necessity for building downstream buyers' marketing capabilities. Previous research focused extensively on customer factors in shaping marketing capability (Cannon & Homburg, 2001; Mithas, Krishnan, & Fornell, 2005; Wathne, Biong, & Heide, 2001). Our findings suggest that the upstream relationship with suppliers determines how well the firm can flexibly adjust their input and adaptively learn from suppliers to effectively convert resources to meet downstream needs.

The remainder of this paper proceeds as follows. First, we develop the theory and hypotheses based on the outside-in perspective and relational theory regarding how the buyer-supplier relational strength affects buyer's marketing capabilities. Second, we elaborate our research method and discuss the main findings from the empirical models. Finally, we conclude with a discussion on the theoretical and managerial implications, as well as limitations and future research.

2. Theory and hypotheses

2.1. Marketing capability

Marketing capability has been defined as the integrative process that converts resources and market knowledge to explore customer needs and achieve great market performance (Day, 1994; Merrilees, Rundle-Thiele, & Lye, 2011; Nath et al., 2010; Shou, Chen, Zhu, & Yang, 2014; Vorhies & Morgan, 2003, 2005; Yu, Ramanathan, & Nath, 2014). The resource-based view and dynamic capabilities theory are the most prominent theories in explaining what and how marketing capabilities should be developed and play the role in achieving better market performance (Akdeniz et al., 2010; Angulo-Ruiz, Donthu, Prior, & Rialp, 2014; Morgan et al., 2009). For example, the resource-based view maintains that scarce, inimitable and valuable resources are the foundation for cultivating strong marketing capabilities, thereafter generating competitive advantages (Day, 2011; Narasimhan, Rajiv, & Dutta, 2006; Nath et al., 2010). To develop strong marketing capabilities is to exploit the unique resource base, such as brand and R&D, and develop difficult-to-replicate capabilities of comprehending market change and providing effective solutions. Dynamic capabilities theory further reveals how marketing capabilities are developed or how they adapt to market evolution (Morgan et al., 2009; Teece, Pisano, & Shuen, 1997; Zollo & Winter, 2002). This theory argues that the resources and capabilities should be developed or formulated dynamically according to market changes through sensing the environmental changes and responding to the changes by combining and transforming the existing resources in some new ways (Helfat et al., 2009; Teece, 2009; Teece

et al., 1997). Such dynamic capabilities are also a set of idiosyncratic skills and knowledge embedded in a firm's routine and everyday practice that can be difficult for competitors to imitate, and thus generate sustainable competitive advantages (Eisenhardt & Martin, 2000; Teece et al., 1997; Zahra, Sapienza, & Davidsson, 2006).

Rooted in the resource-based view or dynamic capabilities theory, the logic of developing marketing capabilities starts from the internal scanning and development of idiosyncratic resources and capabilities. Although the dynamic capabilities theory attempts to consider the external environment, the capacity of sense-making and combining resources is still an internal set of skills and knowledge accumulated from experience. Such an implicit inside-out approach results in myopia that firms are used to for understanding external changes based on resources they already have or experiences they have had in the past. Because internal resources and capabilities are both path-dependent, they myopically constrain the scope and depth of the search and sense-making effort in the dialogue with external changes and can hardly adapt in response to external environmental shocks when both the velocity and complexity of market change accelerates. Therefore, a widening gap persists between the internal marketing capabilities and external environmental demand.

In contrast, marketing capabilities from the outside-in perspective begins from the external market, as Day (2011) suggests. This perspective stresses the importance of sensing and responding to the external environment, beginning with the external environment by anticipating market change and leveraging outside resources to develop capabilities accordingly (Day, 2011; Greenley et al., 2005; Saeed et al., 2015). Therefore, firms have to shift from a reactive to a sense-and-respond approach, which requires managers to step out of the boundary of the firm and be vigilant to the noises that they may not be familiar or comfortable with. Marketing capabilities in this case is adaptive and can anticipate and respond to those vague signals and turn them into meanings and market insights. Three pillars constitute the marketing capabilities: vigilant market learning, adaptive experimentation, and open marketing. Vigilant market learning stresses the willingness and ability to sense and act on peripheral weak signals (Challagalla, Murtha, & Jaworski, 2014; Day & Schoemaker, 2005). Adaptive experimentation is to explore possibilities beyond the firm's familiar domain. The willingness to challenge existing beliefs and the ability to learn from network partners' experiences are prerequisites for adaptive experimentation (Day, 2014; Wind, 2007). Open marketing is to mobilize dispersed and flexible network partners' resources through coordination and knowledge sharing beyond the boundary of the firm (Day, 2011; Dyer & Singh, 1998; Gulati, 1999; La Rocca, Ford, & Snehota, 2013). The outside-in perspective is more likely to enable the firm to be open to diverse market changes, employ more flexible approaches to form strategic foresight, and explore opportunities widely, and therefore help close the gap between internal marketing capability and complex market changes.

2.2. Buyer-supplier relational strength

Buyer-supplier relational strength refers to the strength of a bonding relationship between a buyer and supplier where both parties are intertwined to form a reciprocal and constraining relationship (Rindfleisch & Moorman, 2001; Villena, Revilla, & Choi, 2011). Reciprocal trust and potential reputation sanctions underlie a strong relationship between two parties (Day, Fawcett, Fawcett, & Magnan, 2013; Kale, Singh, & Perlmutter, 2000; Lawson, Tyler, & Cousins, 2008; Moran, 2005). Based on long-term interactions, trading parties trust each other with the belief that one party's effort in helping the other will be paid off in the future by the receiving party. If any party violates the norm, a negative reputation will be dispersed among the network, and the violating party will be punished by others in forms of unfavorable access to information and resources (Moran, 2005; Nahapiet & Ghoshal, 2000). Such a reciprocal but constraining norm in a strong

relationship between supplier and buyer provides the buyer and supplier with disciplined flexibility that is far more resilient compared to rigid contracts in a volatile market (Chang & Huang, 2012; Luo, 2002; Young-Ybarra & Wiersema, 1999).

A strong buyer-supplier relationship will have an impact on the buyer's marketing capability through two main channels. First, a strong relationship breeds trust that facilitates information sharing between the supplier and buyer, which is essential for making sense of the external environment and developing market insights (Day et al., 2013; Johnston, McCutcheon, Stuart, & Kerwood, 2004; Lawson et al., 2008; Reagens & McEvily, 2003). Second, it gives the buyer more flexibility to adjust its products or services, thus enabling the buyer to effectively respond to the unpredicted changing demands (Claro & Claro, 2010; Johnston et al., 2004; Paulraj, Lado, & Chen, 2008; Selnes, 1998).

2.2.1. Mediating role of supplier information sharing

Supplier information sharing captures the extent to which the suppliers share or are willing to share their proprietary information or knowledge with the buying firm (Doney & Cannon, 1997; Dyer & Hatch, 2006; Dyer & Singh, 1998; Lakshman & Parente, 2008; Wang, Wang, Jiang, Yang, & Cui, 2016). Two factors make it difficult for suppliers to share information with the buyer. First, the proprietary information or knowledge is a private and sensitive part of the supplier's strategic asset that suppliers are not willing to share except with one who is trustworthy and has mutual interest with the supplier (Liu, Li, Shi, & Liu, 2017; Wu, Choi, & Rungtusanatham, 2010; Yang, Zhang, & Xie, 2017). Leaking the information or knowledge to outsiders can cause serious potential loss to the supplier (Li & Zhang, 2008). Second, the tacitness of proprietary information or knowledge makes it difficult for suppliers to share with others in the way of codification but can only be transferred to others by repeating interactions (Li, Poppo, & Zhou, 2010; Macher, 2006; Zander & Kogut, 1995).

A strong buyer-supplier relationship can facilitate supplier information sharing because of the following reasons. First, a strong relationship breeds trust between the buyer and supplier. With the strong relationship, the buyer and supplier develop long-term mutual understanding on their tasks and common interests. It allows firms to exchange information with confidence that the receiver will not take advantage of the information for short-term self-interest (Doney & Cannon, 1997; Hald, Córdón, & Vollmann, 2009; Li et al., 2010; McEvily & Marcus, 2005).

Second, relational strength also provides the supplier with a control mechanism in sharing the information. Different from formal control in the form of contracts, informal control in the form of developing strong relationship can effectively safeguard the sharing behavior (Das & Teng, 2002; Zhou, Zhang, Sheng, Xie, & Bao, 2014). The buyer under normative pressure and potential sanctions on deviating behavior will be more likely to behave in line with the expectations of the supplier. If the buyer misappropriates the information shared by the supplier, a negative reputation can spread quickly in the supplier's network, and normative sanctions will be imposed. As a result, a strong relationship between the buyer and supplier functions as collateral for the exchange of information and reduces the conflicts and costs between parties (Currall & Judge, 1995; Levin & Cross, 2004; Liu et al., 2017; Liu, Luo, & Liu, 2009; Zaheer, McEvily, & Perrone, 1998).

Third, a strong buyer-supplier relationship facilitates tacit knowledge transfer. As Hansen (1999) and Liu et al. (2017) suggest, a strong tie provides better tacit knowledge transfer compared to a weak tie. Whether the supplier can share information with the buyer is not only determined by the willingness but also by the capability that the sending and receiving parties have in understanding what they are sharing. Simple and codified information can be easily shared, but complex and tacit knowledge can be difficult to share without the help of interpretation and explanation (Hansen, 1999; Zander & Kogut, 1995). A strong relationship between the buyer and supplier thus plays a role in helping the receiving party to understand the evolutionary

path of the complexity, clarify the causal relationship in the complex system, and thus smooth the transfer of tacit knowledge (Podolny, 2001; Reagens & McEvily, 2003; Rowley, Behrens, & Krackhardt, 2000; Uzzi, 1997).

Based on the above argument, we propose that suppliers are more likely to share information with the buyer if the buyer-supplier relationship is strong.

H1. Buyer-supplier relational strength has a positive impact on supplier information sharing.

Under the outside-in approach of marketing capability, the high level information sharing by a strong buyer-supplier relationship will help buying firms build strong marketing capability. Strong marketing capabilities in terms of vigilant market learning, adaptive market experimentation and mobilizing different resources to open marketing have a common basis that requires sufficient and effective information sharing to make sense of external changes. Supplier information sharing plays a crucial role in forming the buyer's marketing capability.

First, supplier information sharing facilitates the buyer's vigilant marketing learning. With a volatile and unpredictable market, buying firms need to develop deep market insights with an early warning system (Dickson, 1992; McEvily & Marcus, 2005; Srivastava, Fahey, & Christensen, 2001), and shift from a reactive to a proactive approach that stresses the quick sense-and-response feedback loop (Aragón-Correa & Sharma, 2003; Sarkar, Echambadi, & Harrison, 2001). Suppliers in many circumstances have more chances to identify or obtain knowledge about market threats or opportunities that the buyer may not be able to capture in its domain. The knowledge inadequacy of buying firms can widen the gap between the firm and market. When the proprietary information from suppliers are accurately interpreted, adequately shared and sufficiently communicated with the buying firm, the peripheral signals increase the buyer's awareness and help the buyer anticipate market changes. As a result, it facilitates vigilant market learning and enhances production to meet dynamic market demands in advance (Hurley & Hult, 1998; Mooi & Frambach, 2012).

Second, supplier information sharing also facilitates the buyer's adaptive marketing experimentation. Different from vigilant learning, adaptive experimentation explores possibilities beyond the firm's familiar domain and experiment on what will work in the market (Day, 2011, 2014; Kelley, 2001). Supplier information sharing helps the buyer solve problems and improve solutions in a more effective and creative way (Davenport, 2009; Hauser, Urban, Liberali, & Braun, 2009). Supplier information sharing provides the buyer with diverse information and ideas that is well beyond its original capacity and leaves the buyer more valuable alternative options regarding problem solving (Rosenkopf & Nerkar, 2001; Subramaniam & Youndt, 2005). By sharing diverse and prompt information from the upstream end, the buyer is more likely to experiment with different solutions in response to different customer requests (Mu et al., 2018).

Third, supplier information sharing facilitates the buyer's open marketing capability. Open marketing is to mobilize partners' resources through coordination and knowledge sharing beyond the boundary of the firm (Day, 2011; La Rocca et al., 2013). It extends the firm's ability to access their partner's resources (Mu, 2015). Suppliers sharing their tacit and proprietary knowledge with the buyer can enable the buying firm to access and mobilize resources embedded within the supplier network. The buying firm is more likely to locate novel ideas with the knowledge map shared by suppliers and leverage resources with the help from the supplier network.

Based on the above argument, we propose that supplier information sharing improves the buyer's marketing capability.

H2. Supplier information sharing has a positive impact on the buyer's marketing capability.

2.2.2. Meditating role of supplier flexibility

Supplier flexibility is defined as the supplier's willingness and actions that provide flexible and customized products or services according to the buyer's requested adjustments (Cannon & Homburg, 2001; Chu, Chang, & Huang, 2012; Hartmann & De Grahl, 2011; Noordewier, John, & Nevin, 1990; Selnes, 1998). Two reasons cause suppliers' unwillingness to provide flexible services to the buyer. First, supplier flexibility is in contradiction with buyer-supplier contracts (Cannon & Homburg, 2001; Han, Sung, & Shim, 2014). Once the buyer-supplier contract is settled, it is rigid to changes. However, supplier flexibility may require adjustments beyond the contract terms. As a result, the supplier has to pay higher prices to accommodate the changes, and this causes potential disputes or conflicts between the buyer and supplier (Han et al., 2014). Second, specific investments can hinder suppliers providing flexible products or services. Significant specific investment within the relationship that cannot be recovered in the short term may be invested by suppliers right after the settlement of the contracts. If the buyer changes its requirement on the products or services from the suppliers, the specific investment can turn into sunk costs that lead to a holding up problem, intensify supplier worries and incur opportunistic behavior (Han et al., 2014; Ivens, 2005).

A strong buyer-supplier relationship helps ease the worries of suppliers and enhance supplier flexibility (Johnston et al., 2004). First, the buyer and supplier with strong relationships hold similar visions and values (Gulati, Nohria, & Zaheer, 2000; Nahapiet & Ghoshal, 2000). With the similarities in visions and values, the buyer and supplier develop long-term mutual understanding on their tasks and common interests. They are more likely to understand the challenges they are faced with and bear the risks together. The aligned interests between the buyer and supplier help develop more flexible solutions toward the extra efforts beyond the contract on a reciprocal basis. Suppliers' efforts in helping the buyer with flexible products or services will in turn be paid off in the future in terms of their long-term performance (Doney & Cannon, 1997; Han et al., 2014; Ivens, 2005).

Second, relational strength places a social control between the buyer and suppliers. Strong relationships between the buyer and suppliers impose strong normative pressure on both parties and may involve third party enforcement and social sanction to punish deviating behavior (Das & Teng, 2002; Hagen & Choe, 1998; Mahapatra, Narasimhan, & Barbieri, 2010). If the buyer takes advantage of supplier flexibility, the buyer will be sanctioned with a negative reputation and declined access to resources from the supplier network. Because of this binding norm, it provides suppliers a social guarantee that allows suppliers to have more confidence in offering flexible products or services to buyer firms.

Based on the above argument, we propose that supplier flexibility will be greater when the buyer-supplier relationship is strong.

H3. Buyer-supplier relational strength has a positive impact on supplier

flexibility.

Supplier flexibility is a prerequisite of the buyer's marketing capability.

First, supplier flexibility facilitates the buyer's vigilant marketing learning. Marketing learning plays a key role in marketing capability in terms of making sense of market changes. However, the learning process cannot be realized through price or quantity adjustments in response to market changes. Price and quantity adjustments are single-loop learning processes that do not change the basic assumptions about the current market and environment, and significantly narrow the buying firm's vision and foresight of market opportunities (Argyris, 2003; Slater & Narver, 1995). In contrast, vigilant market learning involves the overhaul of previous assumptions about the market and introduces a new logic or system as double-loop learning suggests. The learning can only occur with a high level of supplier flexibility that allows the buying firm to change the whole process from the very beginning.

Second, supplier flexibility enhances the buyer's adaptive market experimentation. Adaptive market experimentation makes it possible for the firm to test different market assumptions and offer novel solutions in response to market changes. However, the experimentation is based on a trial and error process to test and validate the design and solutions. Without a high level of supplier flexibility, the trial-and-error learning can be hard to implement and be constrained within a narrow scope of search for solutions (Noordewier et al., 1990). Supplier flexibility expands a firm's horizon of search, provides the firm with more alternative solutions, and thus enhances the firm's ability to experiment more widely. As a result, supplier flexibility facilitates the buyer firm's adaptive market experimentation and therefore leads to stronger marketing capabilities to serve the market effectively (Swafford, Ghosh, & Murthy, 2006; Zhang, Vonderembse, & Lim, 2002).

Third, supplier flexibility improves the buyer's open marketing capability. Open marketing stresses the mobilization of the partner's resources (Day, 2011; Dyer & Singh, 1998; La Rocca et al., 2013). Suppliers who provide flexible products or services to their buyer are the nexus between the buyer firm and the supplier network. Greater supplier flexibility enhances deep collaborations between the suppliers and their own supplier partners (Lusch & Brown, 1996). The buyer firm is more likely to leverage external resources through the suppliers with high levels of flexibility and access to the social capital embedded in the supplier network.

Based on the above argument, we propose that supplier flexibility improves the buyer's marketing capability.

H4. Supplier flexibility has a positive impact on the buyer's marketing capability.

Fig. 1 illustrates the conceptual framework.

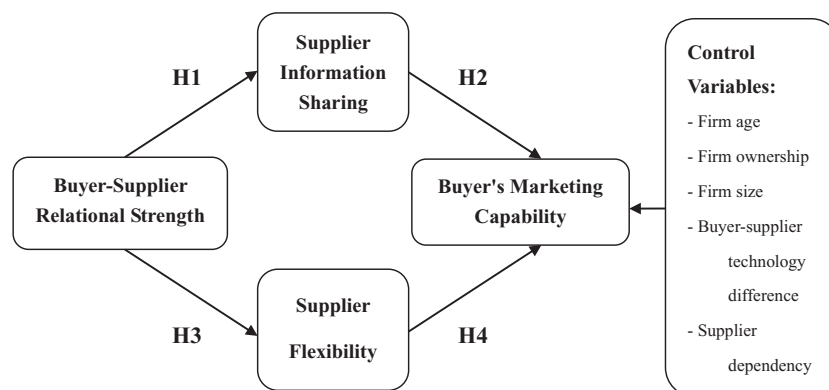


Fig. 1. Conceptual framework.

3. Method

3.1. Sampling design and data collection

Chinese manufacturing industries have been chosen for this study as the research context. China has the largest and most dynamic market in the world (Gao, Xie, & Zhou, 2015; Liu et al., 2009). It has also experienced dynamic transitions during the last several decades with fast growth and speeding changes (Zhou et al., 2014). Meanwhile, inter-firm relationship plays a very important role in the Chinese business context. As a result, the Chinese market provides an ideal setting for this research.

A survey instrument was adopted to collect data in this research. Since there was no effective national-wide sampling frame available in China, we cooperated with three major universities in Beijing, Shanghai and Henan to generate our sampling frame, as Kriauciunas, Parmigiani, and Rivera-Santos (2011) suggest that university institutions can be an alternative source of generating an effective sampling frame in transition economies. The three universities have their research centers on buyer-supplier relationship and provided us with very detailed contact information for buying manufacturers. The firm directories have a rather wide coverage across industries and regions, including mechanical, materials, chemicals, electronics, and textiles, ranging from coastal regions to inland cities of China. We compiled three directories of manufacturing firms from partner universities, and finally formed a 1000 manufacturing firm sample frame for our study. Based on the sampling frame, we selected candidate firms according to two criteria: firms that have existed and operated over two years and are not central government owned State-Owned-Enterprises (SOEs). We selected firms with over two-years of operation to ensure that there are stable relationships between the buyer and suppliers. We excluded central government owned SOEs due to their possibly monopolistic market positions and non-market relationships with suppliers. However, local government owned SOEs remain in our sample, because they were the foci of privatization and have become more market oriented firms (Tong, 2009). Marketing capabilities development is one of the important issues they have to consider, and they share some similarities with other private and foreign owned firms (Chang & Xu, 2008). By doing so, there were 522 firms generated from this selection.

In the second stage, following Andersson, Forsgren, and Holm (2002)'s approach, we invited buyer firms that have more than two suppliers to participate in this survey. Some 210 buyer firms agreed to participate. We then conducted face-to-face interviews with candidate buyer firms. All interviewers were required to complete special training to ensure the reliability of the interview. Each interview lasted for one to one and half hours.

The survey questionnaire contains two parts that were completed by the CEO and purchasing managers, respectively, to reduce common method bias. Section one is about the organization and its strategies. It contained questions regarding the general market environment, organization characteristics and its performances. This part was answered by the top management, which includes the CEO, vice presidents or senior managers. The average job tenure was 10.1 years. Section two is in relation to the profile of the supplier network. This part of the survey focused on supplier networks, in particular the relationships with suppliers. Purchasing managers completed the questionnaire and evaluated no more than five of the most important and frequent collaborating supplies within their supplier network (Moran, 2005; Rindfleisch & Moorman, 2001). There were 199 completed and usable questionnaires returned to us; the effective response rate is 38.12%. Table 1 shows the descriptive summary statistics of the sample. Some 199 buyer firms identified 937 important core suppliers. A total of 155 buyer firms identified 775 suppliers, 30 buyer firms identified 120 suppliers, and 14 buyer firms identified 42 suppliers. For firm size, 49.75% firms are small size firms that employed < 300 people, 38.19% are medium size firms having between 300 and 2000 employees, and 12.06% are large

Table 1

Demographic characteristics of the respondents.

Supplier construction	No. of buyers	No. of suppliers
Buyer with five suppliers	155	775
Buyer with four suppliers	30	120
Buyer with three suppliers	14	42
Total	199	937
Firm size	No. of buyers	Percentages (%)
Small size (<300)	99	49.75
Medium size (300–2000)	76	38.19
Large size (≥ 2000)	24	12.06
Firm Ownership	No. of buyers	Percentages (%)
Private owned	59	29.65
Foreign owned	17	8.54
SOEs (controlled by local government)	33	16.58
Listed and Others	90	45.23
Top management respondents		Year
Job Tenure		10.10
Collaboration duration and purchasing from suppliers		Averages
Collaborations durations		7.99 years
Buyer's annual purchases from identified suppliers		74.51%

size firms with > 2000 employees. On average, these respondent firms have been operating for 16.48 years. Some 16.58% are local SOEs, 29.65% are privately owned, and 8.54% are foreign owned firms, whereas 45.23% are listed on the stock market and other firms.

3.2. Measures

Informants provided their response on a seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). We report the measurement items and reliability assessment in Table 2.

3.2.1. Buyer's marketing capability

We operationalized the marketing capability according to Day (2011)'s conceptual paper where marketing capability with an outside-in focus should be adaptive and explorative. Marketing capability should be reflected in the way the firm provides products to meet market needs and how the firm deploys its resources to catch up with market changes. We therefore adapted the scale from Vorhies and Morgan (2005) with particular focus on the adaptability of products and resource deployment in response to market changes. The scale consists of five statements for rating: (1) Your firm can adjust the product line according to the market. (2) Your firm can switch from current market to different target. (3) Your firm can modify exist products to meet market needs. (4) Your firm can adjust how resources are used to meet market needs. (5) Your firm can switch the uses and applications of resources to meet market needs.

3.2.2. Buyer-supplier relational strength

There are two steps to calculate buyer-supplier relational strength. First, on the basis of Rindfleisch and Moorman (2001)'s research, we asked each buyer firm about their relationship with each supplier they named and measured each dyadic level relational strength. Then, based on the dyadic values, we calculated the average score of the relational strength at the firm level. There are four statements for rating to measure buyer-supplier relational strength: (1) Your firm and the supplier trust each other. (2) Your firm and the supplier are willing to jointly solve problems emerging in collaborations. (3) The relationship between your firm and the supplier can be defined as "mutually gratifying". (4) There is a close relationship between your firm and the supplier.

3.2.3. Supplier information sharing

We measured supplier information sharing based on Cai, Jun, and Yang (2010)'s scale. This scale contains four statements for rating: (1) Suppliers share technological information with your firm. (2) Suppliers

Table 2
Measurement of constructs.

Constructs	Description	Standardized loading
Panel one: Measurement Model from 199 buying manufacturers Chi-Square (51) = 100.48, $p < 0.001$, GFI = 0.92, CFI = 0.97, IFI = 0.97, RMSEA = 0.07		
Buyer's marketing capability (Adapted from Vorhies and Morgan (2005)) AVE = 0.52 CR = 0.84 HSV = 0.14	(1) Your firm can adjust the product line according to the market (2) Your firm can switch from current market to different target (3) Your firm can modify exist products to meet market needs (4) Your firm can adjust how resources are used to meet market needs (5) Your firm can switch the uses and applications of resources to meet market needs	0.74 0.84 0.77 0.56 0.66
Supplier information sharing (Cai et al., 2010) AVE = 0.65 CR = 0.88 HSV = 0.12	(1) Suppliers share technological information with your firm (2) Suppliers share information on new product with your firm (3) Suppliers share market information with your firm (4) Suppliers share information that might help your firm	0.71 0.83 0.81 0.87
Supplier flexibility (Slack, 1987) AVE = 0.62 CR = 0.83 HSV = 0.14	(1) Under the conduction changes, suppliers can modify the level of aggregated output based on our requirement (2) Under the conduction changes, suppliers can modify planned or assumed delivery dates based on our requirement (3) In general, suppliers have strong abilities to cope with all changes	0.78 0.82 0.76
Panel two: Measurement Model based on 937 dyadic suppliers Chi-Square (32) = 123.29, $p = 0.0000$, GFI = 0.99, CFI = 0.99, IFI = 0.97, RMSEA = 0.06		
Buyer-supplier relational strength (Rindfleisch & Moorman, 2001) AVE = 0.68 CR = 0.90 HSV = 0.01	(1) Your firm and the supplier trust each other (2) Your firm and the supplier are willing to jointly solve problems emerging in collaborations (3) The relationship between your firm and the supplier can be defined as “mutually gratifying” (4) There is a close relationship between your firm and the supplier The “Buyer-supplier relational strength” entered the structure model with the transformation by the equation: $\text{Buyer-supplier relational strength} = \frac{1}{n} \sum_{i=1}^n r_i$ Where n = the number of suppliers that the buyer firms identified and r_i = the strength of tie between identified suppliers i and the buyer firm, which is measured by a four-item scale	0.80 0.85 0.84 0.81
Buyer-supplier difference in technology (Rodan & Galunic, 2004) AVE = 0.82 CR = 0.93 HSV = 0.14	(1) There are great differences in technical capabilities between your firm and the supplier (2) There are great differences in manufacturing capabilities between your firm and the supplier (3) There are great differences in R&D directions between your firm and the supplier The “Buyer-supplier difference in technology” entered the structure model with the transformation by the equation: $\text{Buyer-supplier difference in technology} = \frac{1}{n} \sum_{i=1}^n d_i$ Where n = the number of suppliers that the buyer firms identified and d_i = the technology differences between identified suppliers i and the buyer firm, which is measured by a three-item scale	0.89 0.94 0.88
Supplier dependence (Payan and McFarland, 2005) AVE = 0.69 CR = 0.87 HSV = 0.14	(1) Our total cost of switching to a competing supplier's line would be prohibitive. (2) It would be difficult for us to replace the sales and profits generated from this supplier's line (3) My firm would suffer greatly if we lost this supplier The “Supplier dependence” entered the structure model with the transformation by the equation: $\text{Supplier dependence} = \frac{1}{n} \sum_{i=1}^n s_i$ Where n = the number of suppliers that the buyer firms identified and s_i = the technology differences between identified suppliers i and the buyer firm, which is measured by a three-item scale	0.82 0.93 0.72

Notes: AVE = average variance extracted, CR = composite reliability, and HSV = highest shared variance with other constructs.

share information on new products with your firm. (3) Suppliers share market information with your firm. (4) Suppliers share information that might help your firm.

3.2.4. Supplier flexibility

The measurement for supplier flexibility was adapted from Slack (1987). We posed each buying firm three statements for rating in the survey: (1) Under the conduction changes, suppliers can modify the level of aggregated output based on our requirement. (2) Under the conduction changes, suppliers can modify planned or assumed delivery dates based on our requirement. (3) In general, suppliers have strong abilities to cope with all changes.

3.2.5. Control variables

We controlled for other factors that can affect the marketing capability.

First, we controlled for firm age, which was measured by the difference between the survey year and buyer firms' year of establishment. It is possible that the long established firms tend to have more resources and market awareness and therefore have stronger marketing

capabilities. We also controlled for firm ownership, whether the firm is government-owned or non-government-owned. We set the dummy to 0 if the firm is government owned and to 1 if the firm is non-government owned. We controlled for firm size, according to the employment, as small size, medium size and large size and coded them as 1, 2 and 3 accordingly (Park & Luo, 2001).

Buyer-supplier technology difference and supplier dependency are also controlled for in this study. The buyer-supplier technology difference reveals the buyer firm's ability to understand and coordinate with suppliers to effectively leverage supplier knowledge for its customer (Gao et al., 2015; Rodan & Galunic, 2004; Sampson, 2004; Yang et al., 2017). There are two steps for calculating this construct. First, we measured the technology differences between the buyer firm and each supplier. Then, we averaged these dyadic values of buyer-supplier technology differences to a firm level. We measured the buyer-supplier technology difference based on the Rodan and Galunic (2004) scale. This scale contains three statements for rating: (1) There are great differences in technical capabilities between your firm and the supplier. (2) There are great differences in manufacturing capabilities between your firm and the supplier. (3) There are great differences in R&D

Table 3
Descriptive statistics and all key variables' correlation matrix.

	Mean	SD	1	2	3	4	5	6	7	8
Buyer-supplier relational strength	5.39	0.99	1.00							
Supplier information Sharing	4.97	1.08	0.29***	1.00						
Supplier flexibility	5.62	0.78	0.47***	0.30***	1.00					
Buyer's marketing capability	5.38	1.06	0.27***	0.30***	0.30***	1.00				
Buyer supplier difference in technology	3.91	1.23	0.03	-0.04	-0.11	-0.07	1.00			
Supplier dependence	3.84	1.34	-0.04	0.21**	0.03	0.11	0.41***	1.00		
Firm age	16.48	13.85	-0.06	-0.03	-0.04	-0.15*	0.02	-0.05	1.00	
Firm size	1.62	0.69	0.07	0.11	0	0.07	-0.08	-0.03	-0.16*	1.00

directions between your firm and the supplier.

Supplier dependence reveals the buyer firm's level of dependency on a supplier (Payan & Mcfarland, 2005). Similar to the buyer-supplier technology difference calculation, there were also two steps for calculating supplier dependence. We examined the dependency level between the buyer firm and all its' suppliers. Then, we averaged the scores based on these dyadic values to the firm level. The measurement for supplier dependence was adapted from Payan and Mcfarland (2005). We posed each buying firm three statements for rating in the survey: (1) Our total cost of switching to a competing supplier's line would be prohibitive. (2) It would be difficult for us to replace the sales and profits generated from this supplier's line. (3) My firm would suffer greatly if we lost this supplier.

3.3. Measurement reliability and validity

We tested the constructs' reliability based on the two parts of the survey, which had 199 buyers and 937 buyer-supplier dyads, respectively. As Table 2 shows, the constructs of Marketing Capability, Supplier Information Sharing, and Supplier Flexibility were measured with 199 buyers' information. The results show a sufficient model fit (Chi-Square (51) = 100.48, $p < .001$, GFI = 0.92, CFI = 0.97, IFI = 0.97, RMSEA = 0.07) (Hu & Bentler, 1998). The constructs of buyer-supplier relational strength, buyer-supplier difference in technology, and supplier dependence were first measured with the 937 buyer-supplier dyads and then averaged to the firm level. The measurement model with 937 dyads also shows sufficient model fit (Chi-Square (32) = 123.29, $p < 0.001$, GFI = 0.99, CFI = 0.99, IFI = 0.97, RMSEA = 0.06). Meanwhile, all constructs' composite reliabilities are over 0.80, and Average Variance Extracted (AVE) results all exceeded the 0.50 benchmarks.

We conducted construct validity test with our scale of marketing capability (MC). As the literature suggests, strong marketing capability is associated with strong technology capability (TC) (Desarbo, Benedetto, Song, & Sinha, 2005; Dutta et al., 1999; Wilden & Gudergan, 2015) and customer orientation (CO) (Morgan et al., 2009; Zhou, Chi, & Tse, 2005). We used well-established scales to measure Technology Capability and Customer Orientation. We found that our measurement of marketing capabilities is highly correlated with these constructs (the correlation coefficients of MC between TC and CO are 0.53 and 0.51, respectively). The nomological relationships with TC and CO lend support for the construct validity of our measurement for marketing capability.

Regarding the discriminant validity of the measures, first, we compared the AVEs of each construct with its Highest Shared Variance (HSV) (Fornell & Larcker, 1981). The results show that each construct's AVE is far higher than its HSV, which supports discriminant validity. To further support this result, we conducted a series of Chi-square difference tests to compare the constrained model with the unconstrained model (Anderson & Gerbing, 1988). The differences are highly significant. Therefore, the measurement model suggested satisfactory reliability and validity (details shown in Table 2).

3.4. Common method bias assessment

Common method bias may be a potential threat in self-reported survey data (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). To reduce common method bias, we designed for the survey to have two different parts that were completed by two different informants. The major explanatory variable in buyer-supplier relational strength is an aggregate variable averaged from different buyer-supplier dyads. However, the bias may still exist, as one informant responded to the majority of the variables (Podsakoff et al., 2003). Therefore, further tests were completed to check for common method bias.

The Harman One-factor test was conducted for this assessment based on Podsakoff and Organ (1986). The first factor explains 37.25% of the total variance, which shows that no single factor emerged that accounts for the majority of the variance. To further confirm these results, we applied a method marker approach to examine potential common method bias as suggested by Lindell and Whitney (2001). According to Podsakoff et al. (2003), we constructed a method marker that is allowed to correlate with all observable indicators but not with other latent constructs. The model fit indices with the method marker were marginally improved (Chi-Square (42) = 89.58, $p < 0.001$, GFI = 0.93, CFI = 0.97, IFI = 0.97, RMSEA = 0.08) when compared to the original model (Chi-Square (51) = 100.48, $p < 0.001$, GFI = 0.92, CFI = 0.97, IFI = 0.97, RMSEA = 0.07). The variances explained by the method marker accounted for 16.78% of the total variance, which is less than the 25% criteria suggested by Williams, Cote, and Buckley (1989). Therefore, common method bias was unlikely to be a significant concern in this study.

4. Analyses and results

We used structural equation modeling to test the hypotheses in the study. LISREL 8.80 was applied to test the model. Table 3 shows the summary statistics of all key variables. Table 4 presents standardized results of the structure model.

In the structure model, the results show sufficient model fit (Chi-square (117) = 201.83, $P = 0.0000$, GFI = 0.90, CFI = 0.96, IFI = 0.96, RMSEA = 0.06). Hypotheses 1 and 2 suggest that there is a mediating effect of supplier information sharing between buyer-supplier relational strength and the buyer's marketing capability. Hypothesis 1 proposed that strong buyer-supplier relational strength will be positively associated with supplier information sharing. This hypothesis is supported by the results (path coefficient = 0.30, $P < 0.001$). Hypothesis 2 argues that supplier information sharing has a positive effect on the buyer's marketing capability. The results also supported hypothesis 2 (path coefficient = 0.24, $P < 0.01$). Therefore, the results show that supplier information sharing plays a significant mediating effect between buyer-supplier relational strength and the buyer's marketing capability.

Hypotheses 3 and 4 identify whether supplier flexibility has a mediating effect between buyer-supplier relational strength and the buyer's marketing capability. Hypothesis 3 suggests that strong buyer-supplier relational strength will positively affect supplier flexibility. The

Table 4
Standardized results of structural equation modeling.

Hypotheses paths	Expected sign	Standardized coefficients	Hypothesis supported or not supported
H1: Buyer-supplier relational strength → Supplier information sharing	+	0.30***	Supported
H2: Supplier information sharing → Buyer's marketing capability	+	0.24**	Supported
H3: Buyer-supplier relational strength → Supplier flexibility	+	0.52***	Supported
H4: Supplier flexibility → Buyer's marketing capability	+	0.29**	Supported
Control variables			
Buyer supplier difference in technology → Buyer's marketing capability	−0.08		
Supplier dependence → Buyer's marketing capability	0.12		
Firm age → Buyer's marketing capability	−0.08		
Firm ownership → Buyer's marketing capability	0.03		
Firm size → Buyer's marketing capability	−0.12		
Model fit indices	Chi-square = 201.83 ($p = 0.00$), Chi-square / d.f. = 1.73, GFI = 0.90, CFI = 0.96, IFI = 0.96, RMSEA = 0.06		

Note: $N = 199$, * $p < 0.05$ (two-tailed), ** $p < 0.01$, *** $p < 0.001$.

GFI = goodness of fit index, CFI = comparative fit index, IFI = incremental fit index, RMSEA = root mean square error of approximation.

results suggest a positive impact between buyer-supplier relational strength and supplier flexibility (path coefficient = 0.52, $P < 0.001$). Hypothesis 4 argues that supplier flexibility has a positive impact on the buyer's marketing capability. The results also support hypothesis 4 (path coefficient = 0.29, $P < 0.01$). Therefore, the results show that supplier flexibility plays a mediating effect between buyer-supplier relational strength and the buyer's marketing capability.

Buyer-supplier relational strength is an inter-firm construct, but the marketing capability is an intra-firm construct. As our hypotheses suggest, the intra-firm buyer-supplier relationship affects the inter-firm marketing capability through enhancing supplier information sharing and supplier flexibility, which fully mediates its effect on the marketing capability. We also added the direct effect of buyer-supplier relational strength on the buyer's marketing capability in the structure model. The results show the path between buyer-supplier relational strength and the buyer's marketing capability is insignificant (path coefficient = 0.11, t value = 1.22) and the mediators remain significant. The results indicated a full mediation effect on the buyer's marketing capability.

5. Discussion

5.1. Theoretical contributions

As Saeed et al. (2015) suggest that the outside-in perspective enables firms to achieve competitive advantages by anticipating market changes and developing responding strategies ahead of competitors, this research investigates the antecedents and mechanism of external relationships in shaping the marketing capability from the outside-in perspective. The findings show that buyer-supplier relational strength can enhance the buyer's marketing capability through two important mediators, supplier information sharing and supplier flexibility.

Our research provides three important theoretical contributions to the existing literature. First, this study contributes to the marketing capability literature by revealing an inter-firm relational antecedent of marketing capability. While many studies seem to reach the consensus that marketing capability plays a crucial role in enhancing performance (Krasnikov & Jayachandran, 2008; Krush, Sohi, & Saini, 2015; Morgan, 2012; Morgan et al., 2009), controversies remain about the antecedents of marketing capabilities. Two camps of studies based on different theories and perspectives identified different antecedents and suggested different enhancing strategies. Based on the resource-based view or dynamic capability theory, studies taking an inside-out perspective have identified internal antecedents such as technology capabilities and market orientation, etc. (Akdeniz et al., 2010; O'Cass & Ngo, 2011; Trainor et al., 2011). However, recent studies argue that the inside-out approach leads to myopia that broadens the gap between marketing capabilities and market complexities. Our findings based on relational

theory lend support to the outside-in perspective and show that external relationships with suppliers can also be a potential starting point and play a role in forming marketing capability. Our study is a scarce attempt that aims to identify and empirically examine the external antecedents of internal marketing capabilities.

Second, our study also contributes to the growing outside-in study on marketing capability by revealing the mediation mechanism. Although the outside-in perspective has attracted more attention in the marketing capability research (Celuch, Kasouf, & Peruvemba, 2002; Greenley et al., 2005; Jaakkola et al., 2010; Saeed et al., 2015), little is known about how an outside-in approach works in shaping a firm's marketing capability, in particular, how external relationships turn into internal capabilities. Our study suggests that the external relationship with suppliers may not enhance the internal marketing capability unless such relationships enhance supplier information sharing and flexibility that empower the downstream buyer to proactively sense the outside changes and utilize outside resources. Information sharing provides the focal firm with such advantages as wider vision and possible foresight of environmental change, deeper understanding of tacit knowledge, and a road map of new technology, which facilitate making sense of the external environment. Supplier flexibility, however, makes it possible to leverage external resources, experiment on different solutions, and adaptively explore potential opportunities. Therefore, our study enriches our understanding on marketing capability building through a fresh outside-in lens and reveals how outside relationships are turned into a firm's internal capabilities to help close the gap between the buyer firm's internal marketing capability and market complexity.

Third, our study indicates that the upstream buyer-supplier relationship can also contribute to the downstream buyer's marketing capability. Most previous research made the strong assumption that the development of marketing capability hinges extensively on the relationships with downstream customers (Cannon & Homburg, 2001; Mithas et al., 2005; Wathne et al., 2001). Our findings show that upstream suppliers also play a significant role in shaping the buyer firm's marketing capability. Our findings indicate that strong relationships with suppliers can facilitate supplier information sharing and encourage supplier flexibility, as the upstream suppliers, their sharing of information with the buyer and their willingness to provide flexible products and services will largely determine how the downstream buying firm can adaptively respond to market changes. With a high level of supplier information sharing and supplier flexibility, downstream buyers are more likely to develop sense-and-respond capacity in a complex market. As a result, our study sheds light on the marketing capability research from the upstream end, which is largely overlooked in the extant literature.

5.2. Managerial implications

Our research suggests two important implications for buyer firms. First, managers in buying firms should be aware that the outside-in approach can be an alternative approach for enhancing its marketing capability. To fit in the complex market, firms need to be proactive and sensitive to the changes beginning from their external relationships, and leverage resources outside the firm to help shape their internal marketing capabilities. Focusing internally only on what they already know or what proved to be successful in the past narrows their searching scope and widens the gap between the marketing capability and market complexity. Switching from an inside-out to an outside-in perspective in terms of marketing capability gives the manager a fresh solution in turning outside resources into internal capabilities.

Second, the buying firm needs to be aware of the potential significance of keeping a strong and favorable relationship with suppliers in shaping the marketing capability. Strong relationships with suppliers help the buyer receive and sense signals or information they are not familiar with and give the buyer more freedom to flexibly adjust their products or services. With a high level of information sharing and supplier flexibility, the buying firm is more capable of learning, experimenting with different alternatives and leveraging different external resources, which can enhance the buyer's marketing capability to adapt effectively to market changes.

6. Conclusions

Different from the inside-out perspective, which stresses internal resources as the basis for developing marketing capabilities, this study responds to the call for shifting the focus from internal to external dynamics and developing marketing capability from an outside-in perspective (Day, 2011; Saeed et al., 2015). We examined the effect of buyer-supplier relational strength on the buyer's marketing capability and found that developing strong buyer-supplier relationships are better for forming marketing capabilities through a high level of supplier information sharing and supplier flexibility. The findings indicate that starting from relationships outside the firm can be an alternative way to build strong marketing capability.

While many recent studies suggest that the outside-in approach improves firm performance (Kirca, Jayachandran, & Bearden, 2005; Lukas & Ferrell, 2000), this study further reveals the antecedent and mechanism of the outside-in approach, and empirically shows how to turn external relationships into internal capability. A strong buyer-supplier relationship facilitates information sharing between the supplier and buyer, which is essential for making sense of the external environment and developing market insights. It also engenders more supplier flexibility that enables the buyer to effectively respond to the unpredicted changing demands.

6.1. Limitation and future research

This study has some limitations that can be improved in future research. First, we asked the buyer firms to name the five most important suppliers and evaluate such parameters as their relationships and information sharing. Although the five dyadic questionnaires provided considerable information and variation among suppliers, the measurement is from the buyer side. Although some studies showed that evaluations from both the supplier and buyer converge and are consistent (Heide & John, 1992), the possibility remains that suppliers may have different perceptions from what buyers perceive. Future research may include conducting measurements from the supplier side. Second, we measured the marketing capability based on Day (2011)'s conceptual study and adapted the scale from Vorhies and Morgan (2005). Although we tried various reliability and validity tests, a special focus on the development of the marketing capability scale in the context of the outside-in perspective is needed. Developing the scale is beyond the

scope of this study, but it may contribute significantly to future research and show the differences in the dimensions of marketing capability in an inside-out versus outside-in context.

In addition to the limitations, there are several issues that are not addressed in this study but are important in the outside-in perspective study. First, the differences between capabilities developed with the outside-in approach and those with the inside-out approach warrant further elaboration. The outside-in approach begins from the external factors and prioritizes sensing the external environment, while the inside-out approach starts from the internal resources and capabilities and focuses on developing idiosyncratic resources. Therefore, the marketing capability from the outside-in perspective may differ from the capability of the inside-out perspective and may need new conceptualization and operationalization. Second, future research may also consider why some firms are more likely to take the outside-in approach while others do not. What factors prohibit a firm from shifting its focus from internal to external dynamics? Although Saeed et al. (2015) compared the outside-in and inside-out approaches and suggested some contextual reasons, we still do not know what and how a firm needs to re-organize or re-configure its structure and resources in the transition. Third, future research can investigate the trade-off between the outside-in and inside-out approach. When Day (2011) suggested the outside-in solution for closing the gap between the marketing capability and market dynamics, little attention was paid to the downside of the outside-in perspective. Is it possible that a firm with an outside-in focus will lose its position and resolution to lead the market or be driven purely by external noise? How can a firm achieve a balance between the inside-out and outside-in approach? Further research may be needed to compare and integrate the two perspectives and develop insights into this question. With our study and future research, we are able to generate more insights into the interaction between the market and organizations in the fast-moving and complex environment.

Acknowledgment

The authors thank the anonymous reviewers for their valuable comments. Also, the authors are grateful to the support by the National Natural Science Foundation of China [NSFC 71572065].

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