

Managerial cognition, organizational ambidexterity and firm performance

Ying Zhou^{1,a}, Dapeng Yang^{2,b,*}

¹School of Public Affairs, Zhejiang University, Hangzhou, Zhejiang, P.R.China

²Department of Business Administration, Zhejiang Institute of Administration, Hangzhou, Zhejiang, P. R. China

^aemail:yanikall@hotmail.com, ^bemail:462800376@qq.com

*corresponding author

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Abstract: The organizational ambidexterity literature has burgeoned over the last decade, however its influence on performance remains blurring, and little attention had paid on the cognitive role of top managers. To fill these gaps, this paper first compares prior research concerning organizational ambidexterity' performance outcome and distinguishes organizational ambidexterity into high-level balance or low-level balance and suggest that firms with high-level balance ambidextrous firms exceed those low-level balance ambidextrous firms. Second, this paper tries to explore how managerial cognition influence organizational ambidexterity, especially by examining the effect of complexity and focus of knowledge structure. The conclusions will provide meaningful reference for firms making strategic decision in business ecosystem competition.

1. Introduction

As China's economy has stepped into the New Normal and the market and technical environment has become more and more sophisticated and turbulent, firms are facing severe developing pressure with current competitive advantage declining. At the background of Internet development, some firms have succeeded through building ambidextrous organization by conducting exploratory and exploitative activities simultaneously. Zhejiang Daily Media(ZDM) situates in a declination of traditional media, leveraging the advantage in public media operation and users' data, ZDM gets connected with internet giant companies like Alibaba, Tencent and Netease through joint venture, take shares and strategic alliance and steps into new media, electronic games, e-commerce and other new industries, achieving rapid growth against trend. Similarly, Haier and Geely are all trying to create new revenue stream in new areas using new technology at the base of current advantages. As we can see, these firms are exploring new competitive advantage while integrating current resources and capability advantages and synergizing these two activities to achieve firms' transformation. Which shows significant characteristic of ambidextrous organizations. Ambidextrous organizations are those carrying out exploitative activities effectively while participating exploratory activities proactively, exploitative activities includes the development and implementation of current opportunities, resources and capabilities and incremental innovation while exploratory activities includes learning and developing new opportunities, resources and capabilities and breakthrough innovation. Both exploration and exploitation have crucial impact on firms' competitive advantage, how to coordinate them and gain organizational ambidexterity has been an important issue in organizational research and enterprise practice.

Organizational ambidexterity is gain out of thin air. Organizational ambidexterity can be seen as a dynamic capability which can facilitates new resource configurations that can offer a competitive advantage(O'Reilly and Tushman 2008). As noted by Penrose that top management is a fundamental constraint on the ability of firms to grow and diversify, and more and more research realize the role of managerial cognition in firms' development of dynamic capability(Helfat and Peteraf 2015). Managerial cognition are the lenses through which top managers scan, interpret

environmental information and translate it into organizational actions(Nadkarni and Narayanan 2007). It acts as filters on the information that managers pay attention to and consider relevant for strategic actions and influence diagnosis by enabling decision-makers to postulate cause-effect relations amid ambiguous information(Walsh 1995). Both the strategic choice and upper echelon views argue that top managers bring together and interpret information for the firm as a whole.

Current research has explored the antecedents of organizational ambidexterity and the influence of organizational ambidexterity on firm performance. However, the relationship between organizational ambidexterity and firm performance has a mixed result, some suggest that organizational ambidexterity enables firms' competitive advantage while others argues a negative impact or no impact(Uotila et al. 2009). As to the antecedents of organizational ambidexterity, prior research has studied the effect of organizational structure and other organizational factors, few has pay attention to the role of top managers, especially in empirical studies. Much less is known about the preceding process through which organizations decide to adopt an ambidextrous orientation.

To fill the gap, this paper tries to explore the cognitive antecedent of organizational ambidexterity using the data collected from listed companies. Taken in consideration of environmental dynamics, the study investigated the effect of organizational ambidexterity on performance based on contingency theory. This paper not only makes contribution to the empirical analysis of organizational ambidexterity, but also provides the theoretical and practical implications for firms' transformation and upgrading.

2. Literature review

2.1 Organizational ambidexterity: definition, antecedents and outcomes

The organizational ambidexterity literature has burgeoned over the last decade, and its concepts have been applied to a wide range of organizational issues, including innovation, organization design, alliances and so on(Lavie, Stettner, and Tushman 2010). Whereas the term "ambidexterity" has been used in a number of different ways in the literature, we follow the emerging consensus, which is to view ambidexterity as referring to how organizations manage the duality or tension between exploitation and exploration(Raisch and Birkinshaw 2008). In which exploitation refers to the mobilization and application of current opportunity, resources and capability and incremental innovation, while exploration refers to the development and learning process of new opportunity, resources and capability and radical innovation.

Ambidexterity research has presented a range of structural, contextual, leadership and networking approaches for implementing the dual orientation across organizations. **1)Structural approach.** It is expect to gain ambidexterity through "developing structural mechanisms to cope with the competing demands faced by the organization for alignment and adaptability"(Gibson and Birkinshaw 2004). **2)Contextual approach.** Ambidexterity changes with environment, and individual is embedded in it. Successful organizations are expected to create a context encourages worker distribute time into exploration and exploitation and balance the hard elements (discipline and stretch) and the soft elements (support and trust) (Simsek et al. 2009). **3)Leadership approach.** This approach emphasize the role of top management team in managing and settling the conflict of exploration and exploitation(Simsek 2009). It is suggested that paradoxical cognition and integration behavior can help firm gain ambidexterity(Smith and Tushman 2005). **4)Networking approach.** Interorganizational networking can reduce the competition of scare resource, the key is the assimilation of external knowledge and the match of internal exploitation with external exploration(Raisch et al. 2009). Firms can build ambidextrous organization through structure isolation, context design, leadership behavior and organizational networking, all these approaches are not mutual exclusion, they're based on different views and firms can adopt one or more approach at one time.

However, there's mixed conclusion of relationship between organizational ambidexterity and firm performance in current literature. Many researchers find out that firms can resolve the problem of resource competition through structure isolation, context design, leadership behavior and

organizational networking(Andriopoulos and Lewis 2009). In these ways, firms' exploration and exploitation can be balanced and complementary, i.e. exploration brings new knowledge base for exploitation and exploitation can make a better understanding of exiting knowledge and resource and hence the absorptive capability(Cao, Gedajlovic, and Zhang 2009; Raisch and Birkinshaw 2008). In contract with these taking a positive position, those taking a negative view of ambidexterity contend pursuit of conflict activities can cause organizational inconsistency, all the mechanism raised to balance exploration and exploitation takes cost. Firms trying to balance exploration and exploitation may not excel in either exploration and exploitation and stuck in the middle(Lavie et al. 2010; Lavie, Kang, and Rosenkopf 2013). The key divergence of these two perspectives are cost and benefit of ambidexterity, which may change in different conditions.

2.2 Managerial cognition

Managerial cognition refers to the knowledge structure that top managers use in decision making, which can simplify the information and help top managers to figure out complex problems(Walsh 1995). It acts as lenses through which top managers interpret information and translate it into organizational actions. It should be noted that information affecting firms' actions is not the original data collected from the environment, instead, it is the information filtered and processed by top managers. Based on bounded rationality, top managers deal with information of dynamic environment and form strategic issues and take strategic decisions accordingly. Managerial cognition is crucial intangible resource of firm and play important role of firms' actions such as strategic change, business diversification, merge and acquisition, international process and portfolio partner selection(Bettis and Prahalad 1995; Lampel and Shamsie 2000).

Two key index of managerial cognition that reflect the characteristics of knowledge structure is complexity and focus. Cognition research has argued that complexity and focus represent distinct facets of strategic schemas(Calori, Johnson, and Sarnin 2010; Eggers and Kaplan 2009). Complexity can be measured by the degree of differentiation and integration of top managers' knowledge structure. Differentiation reflects the breadth or variety of environmental, strategy, and organizational concepts embedded in the knowledge structure, whereas integration reflects the degree of connectedness among these concepts(Nadkarni and Narayanan 2007). Thus, complex knowledge structure accommodates a diverse set of alternative strategy solutions in strategic decision making. Greater complexity allows firms to notice and respond to more external stimuli. Recent research in technology has also emphasized that greater variety of knowledge affects creativity and innovation as well as the ability to implement new ideas, thereby fostering rapid innovation and change(Rodan and Galunic 2004).

Focus reflects the degree to which knowledge structure is centralized around a few core concepts. In a focused schema, there is a clear distinction between the core and peripheral sets of knowledge structures(Nadkarni and Barr 2008; Nadkarni and Narayanan 2007). Core concepts are generally develop through gradual elaboration and feedback over a long period of time, while peripheral concepts provide the means to support the core set of strategies(Gustafson and Reger 1995). The depth and significance are therefore lower for peripheral concepts than for the core set. The core set determines which peripheral concepts managers draw on in decision making(Lyles and Schwenk 1992). Thus, focused schemas mainly promote a narrow set of deeply rooted, tried-and-true strategic actions.

3. Conceptual model and development of hypotheses

3.1 Organizational ambidexterity and performance

The divergence in current research about the relationship of organizational ambidexterity and performance originate from different view on the cost and benefit. Researcher acknowledging the positive effect of organizational ambidexterity emphasize the complementarity of exploration and exploitation, that is exploration can facilitate exploitation through new knowledge introduction and exploitation can prompt exploration via resource support(De Clercq, Thongpapanl, and Dimov 2013;

Lubatkin 2006). That advocate ambidexterity have a negative impact on firm performance focus on the dark side of ambidexterity, i.e. the cost of all the mechanism used to reduce resource conflicting problems cannot be neglected. What's more, introduce contradictory activities into organization may result in inter-unit conflict and even waste of resource. In such conditions, firms perform poorly in both exploration and exploitation and step in to a trap of stuck-in-the-middle(Stettner and Lavie 2014).

To solve the contradiction of ambidexterity's effect on performance, we try to identify the dimensions of ambidexterity and introduce contextual conditions. Prior research have mixed high-level balance ambidexterity with low-level balance ambidexterity, which makes a confusing result of ambidexterity's relationship with performance(Yadong Luo and Huaichuan Rui 2009). Firms with the same balance statue may different in level of exploration or exploitation, we should distinguish high-level balance ambidexterity (i.e. balancing with high-level exploration and high-level exploitation) from low-level balance (i.e. balancing with low-level exploration and low-level exploitation). The difference between high-level balance firms and low-level balance firms is redundant resources. Firms in high-level balance have more organizational slack and can benefit from the complementarity whereas those in low-level balance with scarce organizational slack may suffer from the conflicting activities, organizational slack plays a moderating role between ambidexterity and firm performance.

Hypothesis 1: When firm has more organizational slack, organizational ambidexterity has positive effect on firm performance; when firm has less organizational slack, organizational ambidexterity has negative effect on firm performance.

3.2 Managerial cognition and organizational ambidexterity

3.2.1 Complexity of managerial cognition and organizational ambidexterity

The managerial cognition literature suggests that complex knowledge structure will foster organizational ambidexterity through broad scanning, speedy diagnosis, and simultaneous consideration of strategic alternatives. Complex structure promote broad scanning by reducing two major biases in strategic decision making: discounting and cognitive inertia(Reger and Palmer 1996). Facing continuously changing environmental stimuli, greater complexity allows managers to notice and respond to more stimuli, reducing the gap between the environment and their interpretations of it, which can in turn enable firm's balance between exploration and exploitation(Bogner and Barr 2000). Managers who fail to notice important environmental changes are unlikely to adjust the innovation strategy effectively. Thus, complex knowledge structure enables firms' organizational ambidexterity by promoting better inference of continuously shifting competitor moves and allocating resource to exploration and exploitation effectively.

Complexity also promotes organizational ambidexterity by preventing firms from getting locked into cognitive inertia during strategic diagnosis and the consideration-of-alternatives phase (Lyles and Schwenk 1992). Complex knowledge structure increase the diversity of perspectives and promotes more extensive discussion of strategic choices, reducing the likelihood of cognitive inertia(Reger and Palmer 1996) and status quo behavior (Miller and Chen 1996) that inhibit firms to conduct exploration and exploitation simultaneously. Complex structure may thus enable a firm to rapidly absorb new, situation-specific knowledge which is the base for exploration and exploitation. In short, complexity aids in overcoming cognitive inertia by increasing awareness of new knowledge and the capacity to absorb it, which is likely to lead to organizational ambidexterity.

Hypothesis 2: Complexity of managerial cognition will be positively related to organizational ambidexterity.

3.2.2 Focus of managerial cognition and organizational ambidexterity

In focused knowledge structure, the clear distinction between the core and the peripheral sets of knowledge results in managers' decision making around the core concepts with a strong history and take innovation strategy using exiting routines(Lyles and Schwenk 1992). Centralization may create an illusory causation bias in decision making, wherein firms make false associations of

environmental events based on the core concepts in their strategic schemas. Illusory causation results from premature or inappropriate causal inferences about new environmental stimuli, making a great waste of resource for implementation of innovation strategy. Furthermore, using the core concepts automatically may also lead to cognitive inertia, because central concepts, with their deep historical roots, are difficult to discard (Carley and Palmquist 1992). Thus, firms used to explore may failed for lack of finance revenue and trapped in developing too much useless innovation and firms used to exploitation can implement no innovation for path dependence. More often, focus may lock firms into exploitation which is proved to be successful and known to the managers and preclude them from absorbing new knowledge and exploring with new alternatives, thus inhibiting organizational ambidexterity.

Hypothesis 3: Focus of managerial cognition will be negatively related to organizational ambidexterity.

The theoretical framework of this study is shown as figure 1.

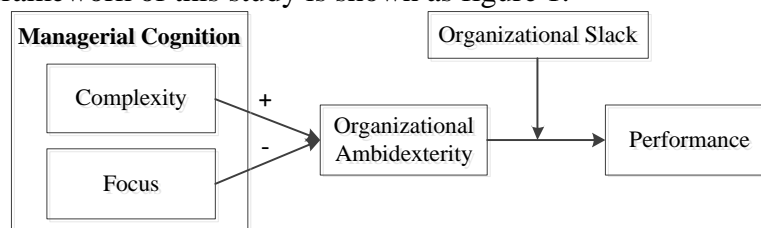


Figure 1 The Framework of the study

4. Conclusion

This paper tries to make out the cognitive antecedent of organizational ambidexterity and how organizational ambidexterity influence on firm performance. Based on literature review and theoretical conduction, this paper distinguishes organizational ambidexterity into high-level balance or low-level balance which will have different performance outcome. Specifically, firms with high-level balance ambidexterity exceed those with low-level balance ambidexterity, in which organizational slack plays key role. As to the managerial cognition of organizational ambidexterity, this paper examines the effect of complexity and focus of knowledge structure, we propose complexity of managerial cognition will be positively related to organizational ambidexterity, while focus of managerial cognition will be negatively related to organizational ambidexterity. This paper deepens the research on organizational ambidexterity and provides meaningful reference for firms making strategic decision in highly competitive environment.

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