

The Impact of Dominant Logic Orientation (Exploitation Vs Exploration) on the Firm's Real Options Recognition

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ABSTRACT

This theoretical study addresses the options recognition issue of real options theory. It suggests that dominant logic may filter all the possible interplays between a firm's capabilities and environment so as to reveal which options are available for the firm. Organizational learning theory helps to disentangle the role of the dominant logic on the firm's options recognition. Based on organizational learning theory, it is suggested that exploitation and/or exploration-oriented dominant logics can recognize different options for the firm. While exploitation oriented dominant logics are likely to recognize exploitation options in the firm's exploitation capabilities-stable environment links, exploration oriented dominant logics are likely to recognize exploration options in the firm's exploration capabilities-dynamic environment links. This study's real options theoretical anchor helps to understand the impact of dominant logic orientation on the strategic decision making of firms.

INTRODUCTION

In the finance environment, an option contract conveys the right, but not the obligation, on the purchaser to either buy (call options) or sell (put options) an underlying asset at some point in the future (Black & Scholes, 1973). Under conditions of uncertainty, and assuming competitive markets, an investor holds an option, waits for some time until some of the uncertainty surrounding the option fades out (expiration or maturity date), and then decides whether to buy (strike) the option (Barney, 2002). This reasoning has been extended to strategic management, in which organizational resource investments and divestments are analogous to call and put options respectively (Myers, 1977). Despite the absence of formal options contracts, fixed expiration dates, and perfectly competitive markets, organizational investments allow a similar pattern of investment behavior to occur (Bowman & Hurry, 1993). However, because strategic decision making typically involves making investments in real strategic assets, this approach to strategic decision making is called *real options theory* (Myers, 1977; Bowman & Hurry, 1993).

Theoretical and empirical research that explores different strategies through the real options lens thrives in strategic management (e.g. Bowman & Moskowitz, 2001; McGrath & Nerkar, 2004). Real options theory, nonetheless, takes the existence of real options as given (Myers, 1977), and

has yet to incorporate a more comprehensive theoretical perspective that explains how managers obtain and discern the options available to them now and over time (Barnett, 2008).

Bowman and Hurry (1993) suggest that a firm's options bundle contains several options awaiting recognition, and that if these options are to be exercised (struck), they must first be recognized. These authors argue that managers must make sense of environmental conditions and organizational resources before they can identify potential options for the firm. Managerial sense making, nonetheless, is impacted by the managers' cognitive structures (Weick, Sutcliffe, & Obstfeld, 2005) that limit their field of vision and provoke selective perception and interpretation before impacting the understanding of the firm's strategic domain (Hambrick & Mason, 1984). The above discussion suggests that the manager's cognitive structures can play an important role in understanding the recognition of real options.

Barnett (2008) tackles the issue of the options' recognition from the attention-based view of the firm. He speculates that such an approach fails to account for the way in which mental models (cognitive structures) influence how managers make sense of available data, and, in turn, recognize options. If we accept the argument that the dominant logic is a cognitive structure, a mindset (Grant, 1988; Prahalad & Bettis, 1995) that impacts the processes by which managers attend to and process information (Lampel & Shamsie, 2000), then the dominant logic can provide additional light in understanding the question of how managers recognize the options available to the firm. In Prahalad's (2004: 172) words: *"The dominant logic is the lens through which managers see all emerging opportunities (options) for the firm"*. Based on the above discussion, one of the intended contributions of this study is to provide an answer to the question: *how does the dominant logic impact the recognition of the firm's options?* Organizational learning theory (e.g. March, 1991) may help to answer this question.

Organizational learning theory suggests that organizations divide attention and resources between exploration and exploitation (Levintal & March, 1993). Exploration is about search, variation, risk taking, experimentation, and discovery; exploitation, on the other hand, refers to production, efficiency, selection, implementation, and execution (March, 1991). However, the managerial mindset needed for exploitation differs from that needed for exploration (Gupta, Smith & Shalley, 2006). *"...exploiting interesting ideas often thrives on commitment more than thoughtfulness, narrowness more than breadth, cohesiveness more than openness..."* (March, 1996: 280). Here I suggest that if the dominant logic is a managerial mindset that can influence the firms' critical resource allocation decisions (Prahalad & Bettis, 1986), then the exploitation or exploration orientation of the dominant logic may influence the options recognition. Below I discuss why different dominant logics may differ in their exploitation-exploration orientations. This argument contributes to organizational learning theory. It suggests that dominant logic can be one inertial endogenous factor which drives the organization's exploitation-exploration focus.

I begin by summarizing and extending the above discussion and deriving a research model. Next, I introduce the concept of dominant logic and discuss its different exploration-exploitation orientations. I, then, discuss how a firm's capabilities and external environment interact with the dominant logic so they impact the firm's options recognition. Conclusions are drawn at the end of this document.

Research model

Bowman and Hurry (1993) suggest that organizational capabilities provide options to the firm when such capabilities fit the conditions of the environment. Given that organizational capabilities for exploitation are associated with repetition and replication of past actions, they are likely to fit stable environments (Gupta, et al., 2006), and hence, to provide the firm exploitation options. On the other hand, since organizational capabilities for exploration are associated with experimentation and search (Cao, Maruping & Takeuchi, 2006), they are likely to fit dynamic environments (Gupta, et al., 2006); thus, providing the firm exploration options. Based on “strategic fit” logic (e. g. Andrews, 1971) the fit between the organizations’ capabilities and environment provide the firm a bundle of exploitation and/or exploration options. Figure 1 shows the capabilities-environment fit logic and its direct relationship with the firm’s options.

Real options theory, nonetheless, still has to adequately explain how managers recognize the options available to the firm (Barnett, 2008). If the dominant logic acts like an information filter (Prahalad & Bettis, 1995) in that it affects the processes by which managers attend to and process information (Lampel & Shamsie, 2000), then the dominant logic can inform the options recognition issue in real options theory. This study’s central thesis is that dominant logic filters an uncertain given bundle of options in order to reveal which options are available for the firm. Moreover, given that the managerial mindset needed for exploitation differs from that needed for exploration (Gupta, et al., 2006), I suggest that while exploration-oriented dominant logics could mostly recognize exploration options, exploitation-oriented dominant logics could mostly recognize exploitation ones. Figure 1 shows the “filtering” influence of the dominant logic as a moderating effect on the direct relationship between the firm’s capabilities-environment fit and the firm’s options.

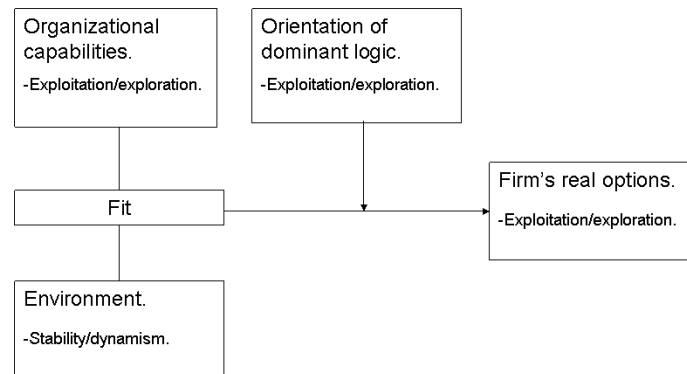


Figure 1: The impact of dominant logic orientation on the firm’s options recognition.

THE DOMINANT LOGIC AND ITS ORIENTATION (EXPLORATION VS EXPLOITATION)

Cognitions have been examined by strategic management researchers at different levels of analysis, primarily to understand their impact on different strategic outcomes (Lyles & Schwenk, 1992). At the group level (top management team), there are cognitive-type concepts such as interpretive schemas, managerial lenses, and so on, which try to capture the mindsets, worldviews, or knowledge structures that influence managerial decision making (Walsh, 1995). Dominant logic has been an influential cognitive concept in strategic management. It was first developed to explain the controversy that surrounded studies on the performance of corporate diversification. Later, Prahalad and Bettis (1995) elaborated on the concept and extended it to issues on organizational adaptation.

In accordance with Prahalad and Bettis (1986) in this study dominant logic is defined as the way in which managers conceptualize the business and make critical resource allocation decisions. This definition is still prevalent in research on dominant logic (e.g. Ginsberg, 1990; Cote, Langley & Pasquero, 1999; Dixon & Day, 2007), so it is appropriate to use it here.

Orientation of dominant logic

Few knowledge structure theorists understand how cognitive structures such as dominant logic are formed (Walsh, 1995). Operant conditioning has been suggested as one way by which the dominant logic may form from the managers' past experience in a business domain (Prahalad & Bettis, 1986). Different experiences, and their associated punishments and reinforcements, can make different dominant logics to emerge and evolve. While success experiences in a business domain can produce a dominant logic, critical failures and crises may change that dominant logic (Prahalad & Bettis 1986, 1995). Current research on dominant logic does not speculate about the types of dominant logics associated with success or failure. Notably, organizational learning theory (March, 1991) could contribute to the above. Organizational learning theory suggests that success and failure experiences in the business domain provoke organizations (i.e. top managers in this study's context) to focus on exploitation or exploration. Based on organizational learning theory, while a dominant logic may focus on exploitation, another dominant logic may focus on exploration. The following paragraphs elaborate on this argument.

Prahalad and Bettis (1986) argue that when top managers effectively perform the tasks that are critical for success in the core business they are positively reinforced by economic success. Such reinforcement makes managers develop a particular mindset (dominant logic) and repertoire of tools and preferred processes that in turn determine the approaches that they are likely to use in resource allocation, control over operations, and the approach to intervention in a crisis (Prahalad and Bettis, 1995; Cote, et. al., 1999). Successful experiences in a business domain are associated with a dominant logic that enhances organizational effectiveness as managers can apply similar knowledge to different related businesses, for example, in a diversified firm (Grant, 1988). This application of similar knowledge to resources allocation in related activities or businesses, nonetheless, is at the heart of March's (1991) notion of exploitation. Success experiences make organizations develop better skills in some markets, technologies, and strategies than in others

(Levinthal & March, 1993). Through success experiences organizations engage in exploitation activities as they involve the application of established competences to problems (March, 2006). Hence, a dominant logic based on managers' success experiences may have an exploitation orientation.

Sometimes performance discontinuities, however, may challenge an existing dominant logic and make it change (Cote, et al., 1999; Prahalad, 2004). According to the threat rigidity thesis (Staw, et al., 1981), when companies face challenges to their performance, the initial response is likely to draw in a now inappropriate but still current dominant logic. This provokes a deepening of the crisis, so the organization begins to search for other solutions that change the existing dominant logic (Prahalad & Bettis, 1986, 1995). This new mindset oriented to the search for new solutions and its related experimentation with new alternatives is what March (1991) calls exploration. According to Levinthal and March (1993), organizations are turned into frenzies of exploration, change, and innovation by a dynamic of failure. Failure triggers exploratory activities that are sources of unconventional and wild ideas that become the bases for responses to change (March, 2006). Given this, dominant logics based on managers' failure experiences may have an exploration orientation¹. Next I discuss the implications of differently-oriented dominant logics in the options recognition.

THE REAL OPTIONS RECOGNITION ISSUE

As argued above, although the firm's capabilities and environment may provide the firm with a bundle of options, such options are latent (shadow options) and come into being only when decision makers recognize them (Bowman & Hurry, 1993). Thus, the question is: *Which options will the firm's managers recognize?*

Capabilities-environment interplay of a firm

An organizational capability refers to the ability of an organization to perform a coordinated set of tasks, utilizing organizational resources, for the purpose of achieving a particular end result (Helfat & Peteraf, 2003). Without the appropriate capabilities, the firm would lack the "know how" that enables it to perform activities such as the creation of a tangible product or the provision of a service (Dosi, Nelson & Winter, 2000). The lack of appropriate capabilities may constrain a firm's strategic actions because organizational capabilities do not change in short periods of time (Teece, Pisano & Shuen, 1997) and cannot be bought in the market (Barney, 1991). Different capabilities, however, can provide the firm different types of options (Bowman & Hurry, 1993). According to Gupta, et al., (2006), the repetitious routines and capabilities of exploitation are quite different from the more experimentation-oriented capabilities of exploration. This indicates that while capabilities for exploitation can provide the firm options for exploitation, capabilities for exploration can provide the firm options for exploration.

¹ Although the literature suggests that failure triggers exploration (e.g. Levinthal & March, 1993), it is possible that so does success (success can make an organization proactively pursue exploration). For the sake of simplicity, only failure is considered here.

Organizational capabilities for exploration refer to the firms' abilities to discover new knowledge, experiment with new experiences, and search variation in strategies. They promote organizational innovation and change (Cao, et al., 2006). Given that capabilities for exploration lead to a firm's variance-enhancing behavior (March, 1991, 2006; Gupta, et al., 2006), they can provide the firm exploration-type options that may be characterized by a high degree of risk, uncertainty, and variance (e.g. entry in a new industry). Risk, high uncertainty, and variance are precisely the characteristics of real options that in the long run may provide the firm higher economic benefits (McGrath, 1997, 1999).

Organizational capabilities for exploitation, on the other hand, refer to the firms' abilities to execute and refine their existing routines, appropriate value from existing knowledge, and strengthen existing advantages; they enhance short-term productivity and efficiency (Cao, et al., 2006). Capabilities for exploitation are associated with firms' struggles to increase the mean of their performance (March, 1991, 2006; Gupta, et al., 2006). Capabilities for exploitation, therefore, may provide a firm exploitation-type options that can be characterized by lower degrees of risk, uncertainty, and variance than those of the exploration-type options. Nonetheless, low variance and uncertainty decrease an option's value (McGrath, 1997, 1999), thus, an excessive reliance on exploitation-type options may harm the organization's long run performance.

No option, however, exists unless there is an environment in which such an option is feasible. The firm's environment is usually characterized in terms of its components, which include, for example, customers and competitors, and its attributes such as instability, turbulence, munificence, and complexity (Dess & Beard, 1984). The characteristics of the environment may fit different options for the firm. Gupta, et al., (2006) and March (2006) argue that while dynamic environments may be suitable for exploration, stable environments are attractive for exploitation type of activities.

Environmental stability and/or dynamism is related to environmental change that is hard to predict (Dess & Beard, 1984). Given that stable environments are characterized by slow change in the competitive landscape, in which product design and process technologies are usually clear (Hambrick, McMillan & Day, 1982), they are attractive for in-depth exploitation of existing resources and capabilities (Lin, Yang & Demirkan, 2007). Dynamic environments, on the other hand, are appropriate for exploration as companies can try to change the resource base and take earlier advantage of opportunities created by environmental change (Hoffman, 2007). In short, while dynamic environments can be suitable for exploration options, stable environments can be suitable for exploitation ones. This logic and reasoning has been studied in research on "strategic fit" (e.g. Andrews, 1971). It suggests that potential options for the firm may lie in the fit between organizational capabilities and the environment's levels of stability or dynamism. The above discussion suggests that:

Proposition 1. The greater the firms' fit exploitation capabilities-stable environment the more likely that firms will recognize exploitation options.

Proposition 2. The greater the firms' fit exploration capabilities-dynamic environment the more likely that firms will recognize exploration options.

However, Sutcliffe (1994) argues that an implicit and largely untested assumption underlying the fit logic is that decision makers can accurately perceive environmental (and organizational) characteristics so they can develop strategies in accordance with accurate perceptions. Here is where the concept of dominant logic helps in understanding the options recognition problem.

The role of dominant logic on the options recognition

Real options theory is rooted in economic-financial assumptions. As such, it assumes that managers can objectively recognize the options available to the firm (Myers, 1977). Organizational literature, however, has acknowledged managers' bounded rationality. Managers only focus their attention on stimuli (information, data) deemed relevant by their givens, such as their cognitive bases (March & Simon, 1958). Cognitive bases serve as perceptual filters (Winter, 2003) and distort the decision makers' perceptions of what is going on and what should be done about it; they create a screen between the situation and the managers' eventual perception of it (Hambrick & Mason, 1984). Remarkably, if the dominant logic is a cognitive structure through which managers see all emerging opportunities for the firm (Prahalad, 2004), then dominant logic may be the lens through which managers see the interplays between the firm's capabilities and environment so as to reveal potential options to the firm.

Differently oriented dominant logics, however, may recognize different exploration-exploitation options in the interplays between a firm's environment and its capabilities. Given that the dominant logic dictates which data are relevant for decision making, and it also influences the interpretation and sense making of such data (Lampel & Shamsie, 2000), the dominant logic is internally consistent (Prahalad, 2004) and/or self-referent (Von Krogh & Roos, 1996). This suggests that if the dominant logic is the lens through which managers recognize the options available for the firm, then a firm's managers could mostly recognize those options that are consistent with the orientation of their dominant logic. To put it more succinctly, while exploration-oriented dominant logics may mostly recognize exploration options, exploitation oriented dominant logics may mostly recognize exploitation ones.

Levinthal and March (1993) argue that past exploitation makes future exploitation more likely and more efficient. Considering that making investments in the same known areas is a form of exploitation, McGrath and Nerkar (2004) found a negative association between some pharmaceutical firms' propensity to take out growth options in new technological areas and such firms' successful cumulative investment experiences in previous technological areas. By the same token, Levinthal and March (1993) argue that exploration can be self-fulfilling until the organization changes its orientation to exploitation. Lavie and Rosenkoff (2006) found that while firms' prior experience (here, the main source of the dominant logic) in exploration reinforces the tendency to explore, prior experience in exploitation reinforces the tendency to exploit. The internal consistency of the dominant logic may be one more alternative explanation of why exploration and exploitation tend to drive out one another in a punctuated equilibrium fashion. The above discussion suggests that:

Proposition 3. A positive association between the firms' fit exploitation capabilities-stable environment and the firms' recognized exploitation options will be stronger for firms with highly exploitation oriented dominant logics than for firms with lower exploitation oriented dominant logics.

Proposition 4. A positive association between the firms' fit exploration capabilities-dynamic environment and the firms' recognized exploration options will be stronger for firms with highly exploration oriented dominant logics than for firms with lower exploration oriented dominant logics.

Existing empirical research results suggest that dominant logic may actually impact the options recognition. Lampel and Shamsie (2000) found that General Electric's business units take as joint venture partners only those firms deemed appropriate by the company's dominant logic. Cote, et al., (1990) found that when SNC began to make initial investments in foreign subsidiaries, the nature of such investments changed when the dominant logic of the firm changed. The present argument enriches Real options literature. It suggests that dominant logic can impact the options recognition process. Based on differently-oriented dominant logics, decision makers from different firms, and at different moments in time, may notice different options in all the possible interplays between the environment and the firm's capabilities that in reality may exist.

CONCLUDING REMARKS

This study addresses the options recognition problem of real options theory. The concept of dominant logic and a theoretical explanation of its orientation provide a tentative solution for such a problem. Real options theory usually takes the firm's options as given by the interplays between the firm's capabilities and environment. However, it is possible that managers may only recognize those options deemed as appropriate by the orientation of their dominant logic. Hence, while managers with predominantly exploitation oriented dominant logics may mostly recognize exploitation options, managers with predominantly exploration oriented dominant logics may mostly recognize exploration ones. This study's argument augments real options literature, as it suggests that not all the options that lie in the links between the firm's capabilities and environment may be recognized. Instead, dominant logic orientation can play an important role in filtering such links, and, in turn, may reveal which options are available for the firm.

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