

DYNAMIC CAPABILITY DEVELOPMENT – PROCESS, STRUCTURE AND BEHAVIOR

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Abstract

In this paper, we identify three emerging schools of dynamic capability development: process (Ambrosini, Bowman & Collier, 2009; Helfat et al, 2007), structural (Felin et al, 2012), and behavioral. We discuss essential features of these different schools. We also identify three sub-schools of the behavioral school: based on their emphasis on the role of cognitions or mental maps (e.g. Eesley and Roberts, 2010), of emotions and emotional capability (e.g. Huy, 2012), and of relations and social networks (e.g. Jones, Macpherson & Jayawarna, 2011). Finally, we propose a contingency model of dynamic capabilities and firm performance.

Key words: *dynamic capability, dynamic capability development, micro-foundations, cognitions, emotional capability, relations, social networks*

One of the new areas of research interest in the field of strategy is the development of dynamic capabilities. Dynamic capabilities refer to the capability of the firms to successfully adapt to and shape their environments, in their pursuit of mission and longevity. Firms differ considerably in their abilities to do so. Some firms survive for several centuries, withstanding a range of environment shocks and discontinuities. Many are one time wonders, who ride to success on specific waves of environmental changes, but find it difficult to adapt when a new set of environmental conditions emerge. Many others are able to adapt to some types of environmental discontinuities, but not others. From both practitioner and scholarly standpoints, there is considerable interest in learning how firms may develop their dynamic capabilities for successfully pursuing their mission on a continuing basis. This interest has generated a diverse array of efforts from scholars, using interdisciplinary perspectives particularly from the field of social psychology. In this paper, we identify three emerging schools of dynamic capability development: process (Ambrosini, Bowman & Collier, 2009; Helfat et al, 2007), structural (Felin et al, 2012), and behavioral. We discuss essential features of these different schools. We also identify three sub-schools of the behavioral school: based on their emphasis on the role of cognitions or mental maps (e.g. Eesley and Roberts, 2010), of emotions and emotional capability (e.g. Huy, 2012), and of relations and social networks (e.g. Jones, Macpherson & Jayawarna, 2011). We conclude by proposing a contingency model of dynamic capabilities and performance.

Origins of the Dynamic Capability View

The origins of the Dynamic Capability View can be traced to the early work on the Resource-based view of the firm (Penrose, 1959; Wernerfelt, 1984). Central to the resource-based view hypothesis is the assumption of isolating mechanisms – that is, the resources of a firm are difficult to substitute or imitate by other firms. The RBV considers isolating mechanisms a key factor in the ability of a firm to outperform its competitors. It identifies firm performance with attaining and sustaining a competitive advantage in the marketplace, i.e. an ability to generate above-average returns from its unique resources, and to have a dominant position in its chosen marketplace. Later scholars have questioned the bases for the assumption of isolating mechanisms, precipitating a need for better articulation.

The knowledge-based view (KBV) hypothesis arose as an offshoot of the RBV work. The KBV puts a stronger emphasis on one of the factors contributing to isolating mechanisms – historical path dependency in the development of knowledge resources. The KBV contends that this unique path of development generates heterogeneous bundles of resources and ways of combining and customizing

these resources for specific deployments, because of the dynamics of evolution, learning, and increasing returns. The firms secure competitive advantage by codifying their tacit experiences and then exploiting these codes in different ways, and are able to sustain their competitive advantage, because not all knowledge is codifiable and so transferrable across the firm boundaries (Senge, 1990). Later scholars have questioned the emphasis on knowledge that lies only within a firm's boundaries, and also the emphasis on codified information as a source of a firm's competitive advantage. They have contended that the firms need to integrate and combine knowledge from outside the firm boundaries, and for this develop their own distinct shared meaning of knowledge and its value.

Another offshoot of the RBV was the core competence view (CCV). The core competence view hypothesis puts an emphasis on the coordination, communication and integration abilities of a firm, to be able to fuse a variety of technologies and skills into something insightful that may have a range of applications and customer benefits. Through aggregation of the value in the form of diverse beneficial applications, the firm is able to secure a competitive advantage in the form of higher market share as well as growth (Prahalad & Hamel, 1990). Later scholars have questioned how radical market changes may diminish the application possibilities of particular fusion efforts, and may require a significant change in core competencies.

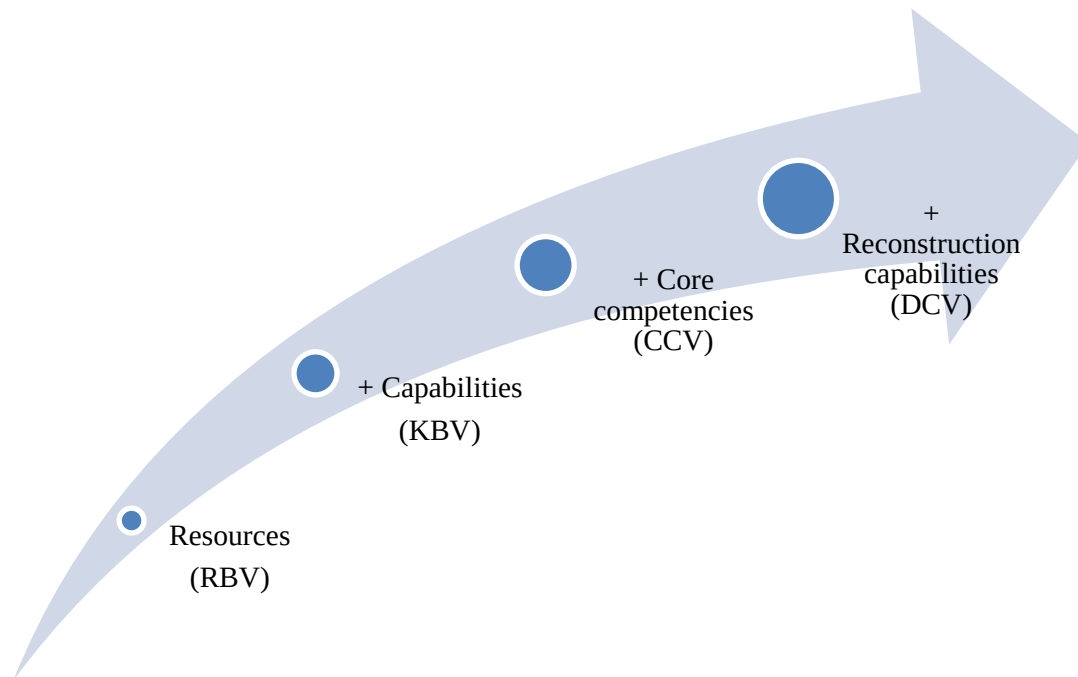
A common limitation of the resource, knowledge and core competence hypotheses is their underestimation of the importance of entropy factors, which can act as powerful eroding mechanisms in highly dynamic markets and in conditions of crisis and catastrophes. New types and segments of consumers are emerging rapidly, various stakeholder groups are engaged in many types of powerplay for protecting their own interests that intersect with the firm's, and in global markets, new forms and systems of production, innovation and exchange are emerging.

It is in this context, dynamic capability view becomes relevant. Dynamic capability view hypothesis emphasizes the need for developing capabilities for recognizing and responding to the need for significant change – the change that requires alteration in their knowledge assets, comprising of the resources, knowledge, and core competencies and insights. The primary focus in this hypothesis is on the survival of the firm in changing markets, as reflected maintaining strategic advantage for the larger corporate of which this firm is a business unit, as well as for various other stakeholders.

Exhibit 1 illustrates a schematic evolution of DCV, based on the refinements of RBV, KBV and CCV. The KBV distinguishes capabilities (and knowledge underpinning the capabilities) from resources. The CCV distinguishes core competencies (creative integration and innovative combination of knowledge) from ordinary capabilities (articulation and replication of knowledge). The DCV distinguishes reconstruction capabilities, from core competencies. The conceptual underpinnings of DCV can thus be traced to the following:

- 1) The Resource-based view (RBV) hypothesis, originating with the works of Penrose (1959) and Wernerfelt (1984)
- 2) The Knowledge-based view (KBV) hypothesis, originating in three inter-related theories of evolutionary economics (Nelson and Winter, 1982), organizational learning (Senge, 1990) and increasing returns (Arthur, 1994)
- 3) The Core competence view (CCV) hypothesis, originating with the work of Prahalad and Hamel (1990)
- 4) The Dynamic capability view (DCV) hypothesis, originating with the work of Teece, Pisano and Shuen (1997) and a call for investigating micro foundations of dynamic capabilities (Teece, 2007).

Exhibit 1: Refinements in RBV, KBV and CCV Bring DCV in Perspective



The Dynamic Capability View under Dynamic Environments

With a greater understanding of the risks of entropy mechanisms, there has been a huge interest in developing new intrinsic perspectives of strategic advantage that are sensitive to the environmental dynamism. The Dynamic Capability View (DCV) is one such perspective that is an outgrowth of the previous research on resources, knowledge, and core competencies (Teece, Pisano & Shuen, 1997).

Rapid and significant changes in technology, shorter product life cycles, competition from a more diverse group of competitors globally, and fast diffusion of know-how and best practices, have introduced dynamism in many markets. Dynamic markets erode the value of existing firm knowledge and core capabilities, and call for constant modification and reconfiguration of resources, knowledge and learning systems. According to Baretto (2010: 171) offers the following definition of dynamic capability based on his synthesis of the literature, “A dynamic capability is the firm’s potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely and market-oriented decisions, and to change its resource base.” The term ‘dynamic’ connotes agility, speed, and timeliness in addressing the changing external market conditions (Teece, Pisano & Shuen, 1997). The purpose of DCV is to explain how competencies are transformed over time so as to provide innovative responses to market changes (Helfat et al, 2007). The DCV view focuses on how firms invest in, trade, and exchange their resource and knowledge base, so as to maximize organizational fit with the environment. It seeks to explain the organizational processes for reconstructing dramatically new, different, and revolutionary resource and knowledge portfolios and core competencies.

The DCV hypothesis states that in dynamic markets, the value of firm’s dynamic capabilities tends to be higher, as they enable firms to renew and reconfigure their knowledge and core capabilities to better fit changing environmental conditions. The markets experiencing more radical changes tend to encourage development of stronger dynamic capabilities among firms (Wang & Ahmed, 2007; Teece, 2007).

In its quest to open the black box of value addition, the early research on DCV drew from a cognitive view of knowledge and learning (Argyris and Schon, 1978). How knowledge is acquired and

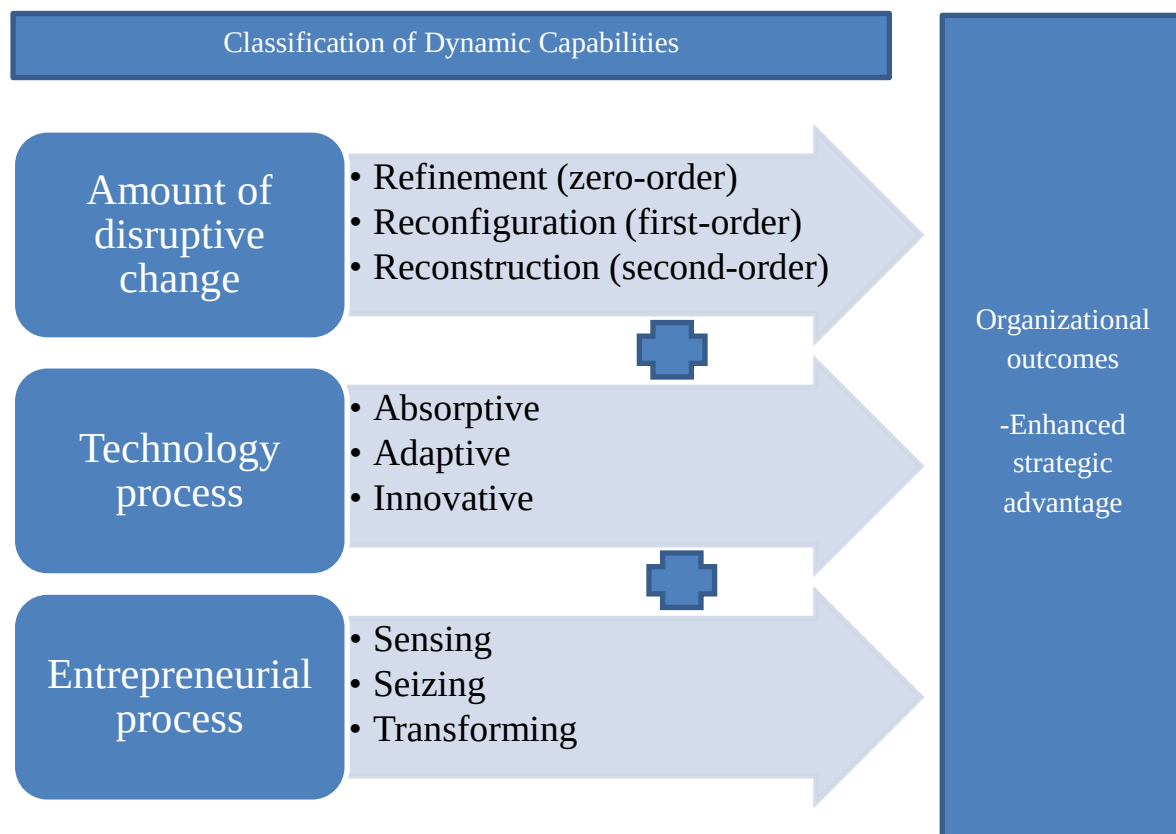
disseminated contributes to the change of, and is limited by, the cognitive or mental models held individually and collectively by members of an organization. The DCV emphasizes cognitive capacity, based on both past experiences and insights about the future, for continuously reconfiguring resources into new sets of capabilities and targeting new sets of customers. New research on DCV has also highlighted the importance of emotive and relational factors, for instance, how knowledge processes are emotionally and relationally constructed and interpreted in socially constructed contexts.

The Process perspective of DCV.

The process perspective of DCV has its origins in the scholarly work of Cyert and March (1963). Cyert and March (1963) proposed a model of decision-making within the firm which emphasizes the role of rules, procedures and routines in response to external shocks, and which are more or less likely to be adopted according to whether or not they generate positive consequences for the organization. It is through organizational learning processes that the firm adapts to its environment, and builds its adaptive capability. They observed, “An organization... changes its behavior in response to short-run feedback from the environment according to some fairly well-defined rules. It changes rules in response to longer-run feedback according to some more general rules.” (Cyert and March, 1963: pp. 101-102).

The process perspective has given rise to several attempts to classify the sequential process of the emergence of dynamic capabilities. Three of these are particularly popular – the first based on the amount of disruptive change required, the second based on the technology process, and the third based on the entrepreneurial process. Based on these, Exhibit 2 portrays the process perspective of dynamic capabilities.

Exhibit 2: The Process Perspective of DCV



The first popular classification approach is based on the amount of disruptive change required (Ambrosini, Bowman & Collier, 2009). Based on the amount of disruptive change, dynamic capabilities may be classified as improvement capabilities, reconfiguration capabilities, and reconstruction capabilities. These reflect increasing amounts of disruptive change, and are therefore labeled by Collis (1994) as zero-order, first-order, and second-order capabilities respectively.

- Refinement capabilities entail least amount of disruptive change. They enable firms to find opportunities for and execute continuous improvement in their resources and how these resources are deployed. In less dynamic environments, changes tend to be evolutionary and incremental, and not very disruptive. The pace of change is slow and the extent of change is also limited. These changes call for continuous, micro adjustments and improvements in firm's resources and how they are deployed (Ambrosini, Bowman & Collier, 2009). Such continuous improvement can be routinized by building dynamic capabilities that are repeatable and embedded in the regular processes and systems of the firm (Helfat et al, 2007).
- Reconfiguration capabilities entail moderate amount of disruptive change. Instead of simply seeking to improve existing resources, knowledge and core competence, they focus on evaluating whether the organization is performing the right activities. They also effectuate necessary reconfiguration of resource endowments and portfolios for continuous realignment with the changing environment (Teece, 2007). They contribute to new business development, by reconfiguring the resources, knowledge and core competencies of a firm.
- Reconstruction capabilities entail potentially the greatest amount of disruptive change, and are the highest order of dynamic capabilities – one's that are of particular relevance in highly dynamic markets. These allow firms to cope with highly chaotic and turbulent environments, prone to crisis and shocks. They entail non-linear and discontinuous changes to ensure survival. This may require firms to creatively destroy their resource endowments and portfolios, and to reconstruct an entirely new form and to move into an entirely new market space.

The second popular approach for classifying dynamic capabilities is based on the technology process. Based on the technology process, dynamic capabilities may be classified as absorptive capability, adaptive capability, and innovative capability (Wang and Ahmed, 2007). Absorptive capacity is the firm's ability to acquire external, new knowledge, assimilate it with existing internal knowledge and ability to create new knowledge. This ability is largely a function of the level of a firm's prior knowledge (Cohen and Levinthal, 1990). Adaptive capability is the firm's ability to encourage people to challenge outmoded traditions, practices and sacred cows, and to respond quickly to changes in the market and evolve rapidly in response to shifts in its business priorities (Gibson and Brikshaw, 2004). Innovative capability refers to a firm's ability to develop new products and markets, through innovative behaviours and processes (Wang and Ahmed, 2007).

The third popular approach for classifying dynamic capabilities is based on the entrepreneurial process. Based on the entrepreneurial process, dynamic capabilities may be classified as sensing capability, seizing capability, and transforming capability (Teece, 2007). Sensing capability is the capacity for identifying and assessing opportunities and threats. Seizing capability is the capacity for mobilizing resources to exploit an opportunity and to capture value. Transforming capability is the capacity for addressing threats through continued organizational renewal.

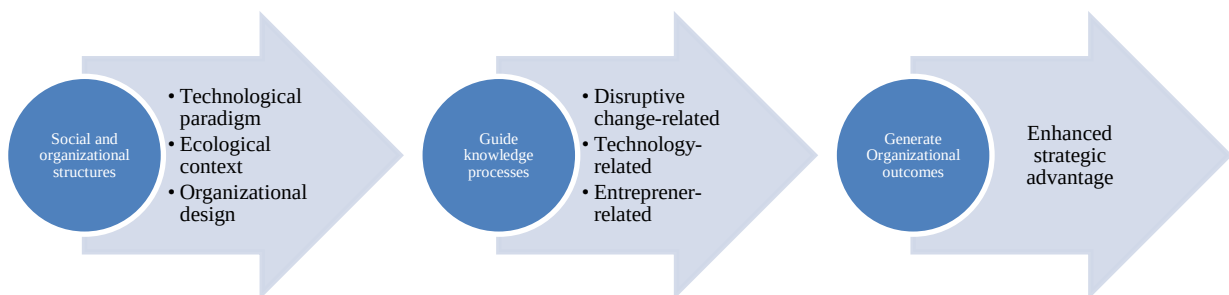
The Structural perspective of DCV

The structural perspective of DCV emphasizes the role of social and organizational structures in guiding the processes of experience accumulation, knowledge articulation, and knowledge codification, in ways that generate enhanced awareness and understanding of available approaches and most effective techniques and technologies (Zollo & Winter, 2002; Macher & Mowery, 2009). Dedicated organizational structures for managing the reconfiguration process embed firm with dynamic capability for change to bring rapid alignment of its resources with the changing external environment (Schilke, 2014). Similarly, structure of social networks, such as inter-organizational

alliances and intra-organizational informal and formal communication flows, also shape a firm's dynamic capability, by offering the possibility of paradigm-breaking connections. Higher-order dynamic capability is generated through organizational and social structures for managing reconfiguration processes such as Research & Development (R&D), Alliances, and Acquisitions. Using data on acquisitions in the banking industry, Zollo & Singh (2004) found that the dedicated organizational structures for improving the process of codification of acquisition-specific knowledge contributed to post-acquisition performance. Similarly, using data on alliances among the US-based firms, Kale & Singh (2007) found that the dedicated organizational structures for improving the process of alliance learning contributed to firm-level alliance success.

Social and organizational structures include technological paradigm, ecological context, and organizational design. Specific technological paradigms influence the social structure of organizational processes and individual behaviors and interactions. In an interesting study, Barley (1986) demonstrated that the introduction of medical imaging devices, such as the CT scanner, challenged traditional role relations among radiologists and radiological technologists, and this changing social structure spurred changes in organizational processes, depending on the individual-level factors. Ecological context includes factors such as space and institutional conditions, and may influence organizing logics and processes underpinning dynamic capability. For instance, open offices and competitive conditions facilitate open administration and organic interaction, while closed offices and regulated institutional conditions may perpetuate a bureaucratic logic with rigid administrative structures and processes over time (Baron et al, 1996). Finally, organizational design (e.g. tall vs. flat, functional vs. multidivisional, matrix vs. network) also impacts the nature of social interactions and organizational processes, such as for information processing, knowledge sharing, routine replication, and capability development (Felin et al, 2012). For instance, a multi-divisional organization design might give rise to gaps in shared knowledge about different functional competencies across parts of the organization, and, in turn, compromise integration, innovation and change (Hoopes and Postrel, 1999). Exhibit 3 illustrates the structural view of DCV, and shows how it complements the process view of DCV.

Exhibit 3: The Structural View of DCV and its complementary with the Process View



The behavioral perspective of DCV

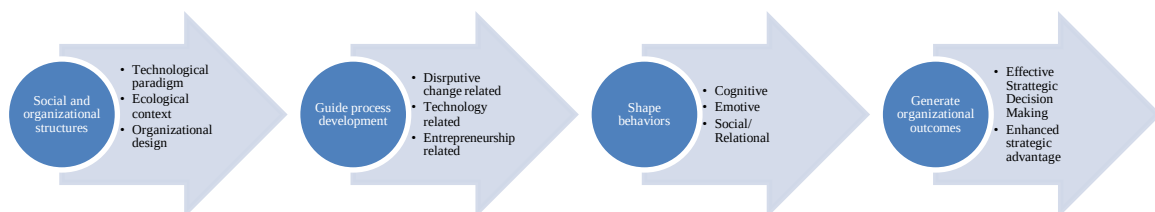
In recent years, strategy scholars have called attention for better understanding of micro foundations in order to open the black box of the dynamic capabilities (Teece, 2007). The behavioral perspective of DCV emphasizes links corporate-level dynamic capability to individual-level agency, situated in the individual-level cognitive, emotive, and relational factors, and their interaction with collective organizational and social processes and structures. The concept of corporate-level dynamic capability faces the challenge of reconciling human agency, with the tendency of all collectivities to suffer from inertia and increasing disorder, in absence of infusion of any new energy. Human agency – i.e. freedom to make choices – provides this new energy, by directly influencing the development and operation of organizational and social processes and structures. Human agency that shapes corporate-

level dynamic capability may be situated among all members (e.g. in fully decentralized organizations), or led by a few influential formal or informal leaders (e.g. senior executives or decision-makers).

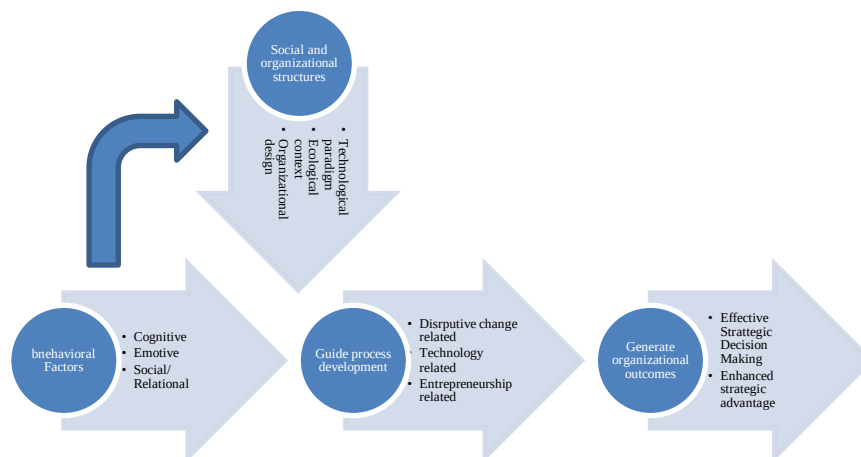
The behavioral perspective shows that while making choices, individuals demonstrate varying degrees of agency, because human choices are guided by relational (e.g. social beliefs), cognitive (e.g. memories about the past; perceptions about the present; and expectations about the future), and emotional (e.g. personal interests and preferences) factors. When the degree of agency is low, individuals tend to have limited control and mastery over these relational, cognitive and emotional factors; and may act in a passive, fast, automatic, habitual or routinized fashion. The degree of agency tends to be low when the members involved have limited amount of resources, knowledge, and skills to cope with change, such as in highly turbulent situations. In these situations, it is particularly important to develop corporate-level dynamic capability that is relatively independent of its micro foundations, and is grounded instead in the crisis-robust process and structural factors. Conversely, when the members involved are resourceful, knowledgeable and insightful, and when the existing processes and structures are ill-equipped to deal with change, such as in situations of major crisis or catastrophe, then it is valuable for the firms to allow human agency to work conjointly with enabling processes and structures for effective and dynamic responses. Thus, the behavioral perspective regarding human agency complements the process and structure perspectives on the development of dynamic capability. Exhibit 4 portrays two alternative models of how behavioral factors may interact with the structural and process factors of DCV and contribute to organizational outcomes. In model 1, structures guide processes to shape behaviors for effective decision-making. In model 2, behaviors shape structures, which in turn moderate how behaviors shape processes that undergird organizational outcomes.

Exhibit 4: Behavioral Factors Interact with the Structural and Process Factors of DCV

Model 1: Structures Guide Processes to Shape Behaviors for Effective Decision Making



Model 2: Behaviors Guide Processes, moderated by Structures, for Effective Decision Making



The behavioral perspective of DCV draws on cognitive and social psychology to understand the organizational process and structural factors that will enable human cognition, emotion, and social/relational behavior to positively influence corporate-level dynamic capability. It expands the focus of DCV from the ‘doing’ aspect, to the ‘deciding’ aspect, by considering enabling processes and structures for timely, situation-appropriate, individual and collective choices and responses. Scholars note that decision-enabling processes and structures are as important as the doing-deployment resource, but have been overlooked by the earlier perspectives of DCV (Helfat et al, 2007: 115). These decision-enabling processes and structures are a function of cognitive, emotive, and social/ relational factors, as discussed below.

Cognitive factors and Organizational decision-making.

Cognitive factors include aspects of memory, language, attention, problem solving, and planning. Organizational processes and structures can help direct cognitive factors in several ways, such as surfacing issues using memory and appropriate language, filtering-in most critical issues for attention, buffering from the negative effects of external change while the members are seeking to construct problem solving strategies, and sensitizing planning to the opportunities emerging in the distant horizon.

One of the important organizational attributes is the leader and change agent selection processes and structures. Eesley and Roberts (2009) find that leaders and change agents who bring experiences with a broader set of responsibilities and functions allow firms to build more valuable cognitive representations of the market opportunities. These firms are able to thus build more valuable combinations of resources. However, their subsequent research shows that under conditions of highly novel technology and rapidly changing industry, over-reliance on the prior experience of key executives can have negative effects (Eesley and Roberts, 2010). In these conditions, it is important that the organizational processes and structures also support forward-looking cognitive efforts, such as imagining novel scenarios and discovering innovative options as part of the problem-solving behaviors (Gavetti and Levinthal, 2000). For developing dynamic capabilities, organizational structures and processes should allow these forward-looking cognitive efforts to interact with backward-looking experiential data, as individuals leverage their histories while constructing new knowledge (Felin et al, 2012). Similarly, when the firms or the individuals have performed very well in the past, there is a tendency to rely more on historical path-dependencies (Laamanen and Wallin, 2009). That in turn orients individuals and firms more towards reaffirming and reproducing existing resources and routines, as opposed to spurring new sets of activities for driving change. Therefore, corporate-wide organizational structures and processes that trigger early warnings and sensitize members about the seriousness of the actual or impending crisis may be helpful in breaking historical path-dependencies. Felin et. al., (2012) observe that the firms typically establish heuristics or rules to guide decision making, that works well in conditions of market continuity. However, when corporate executives anticipate external crisis or discontinuity such as new technologies, they may change the heuristics, such as by encouraging greater freedom to improvise, in order to enhance decision-making at the firm level.

Corbett & Neck (2010) identify three types of organizational attributes, through which corporate executives may help shape cognitive or mental maps for the decision-making processes and enable major innovative breakthroughs. These knowledge structures are processes and structures related to (1) the ‘arrangements’ the organization needs make or secure to changes in organizational processes; (2) the ‘willingness’ to change current organizational practices; and, (3) the ‘ability’ to execute change in organizational practices.

Arrangement processes and structures include those related to culture, coaching, and top management support. A culture supportive of entrepreneurship encourages experimentation and accepts small losses. Coaching is important for mentoring members when they have limited experience with a novel technology or market. Top management support protects members from being scapegoated for

working on innovative efforts, and induces them to remain on task. Without approval, innovative efforts are often found underground and lack continuity and focus.

Willingness processes and structures include those related to the need to address willingness concerns, such as career conflicts. Research shows that many individuals are unwilling to take international postings, because of a fear that this will take them away from the top managers at the home-base and exclude them from future advancement opportunities. Willingness knowledge structures guide individuals how to think about new opportunities such as these, pursue those opportunities, and stay committed to them (Mitchell et al., 2000).

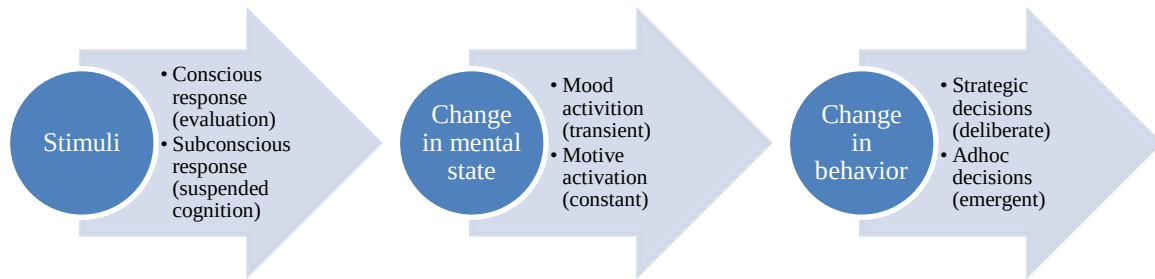
Ability processes and structures include those related to the need to enhance abilities and confidence on those abilities. These abilities may include how to reshape the organization, how to apply the knowledge base towards unforeseen markets, and how to rapidly and cost-effectively transfer technology into an entirely different domain. An example of such abilities is bricolage, defined as 'making do by applying combinations of the resources at hand to new problems and opportunities' (Baker and Nelson, 2005: 333). Baker and Nelson (2005) note that bricolage relies on scavenging resources in order to extract use from resources that others do not value or do not intend to use. Individuals and firms who target bricolage for addressing particular issues (selective bricolage) are more likely to be successful. Bricolage relies on experimentation or improvisation in order to trial and test solutions; in so doing resource combinations are broken down and/or reconfigured. In that sense, bricolage helps firms both explore and exploit new opportunities that might otherwise be too expensive to investigate by more traditional means (Jones, Macpherson & Jayawarna, 2011).

Corbett and Neck (2010) find that entrepreneurial firms that show cognitive balance with emphasis on all the three types of mental maps (arrangements, willingness and ability) tend to enjoy greater dynamic capability. In contrast, firms that show cognitive imbalance with too heavy leaning on one type over another(s) tend to experience lower dynamic capability and eventually strategic advantage with new initiatives. For instance, it is not sufficient to only have a mental map of the arrangements (e.g. culture, coaching, and mentoring support). It is also essential to foster strong willingness and developed abilities, in order to actualize seizing of opportunities and transformation of the organization so critical to dynamic capability development.

Emotive Factors and Organizational Decision-making

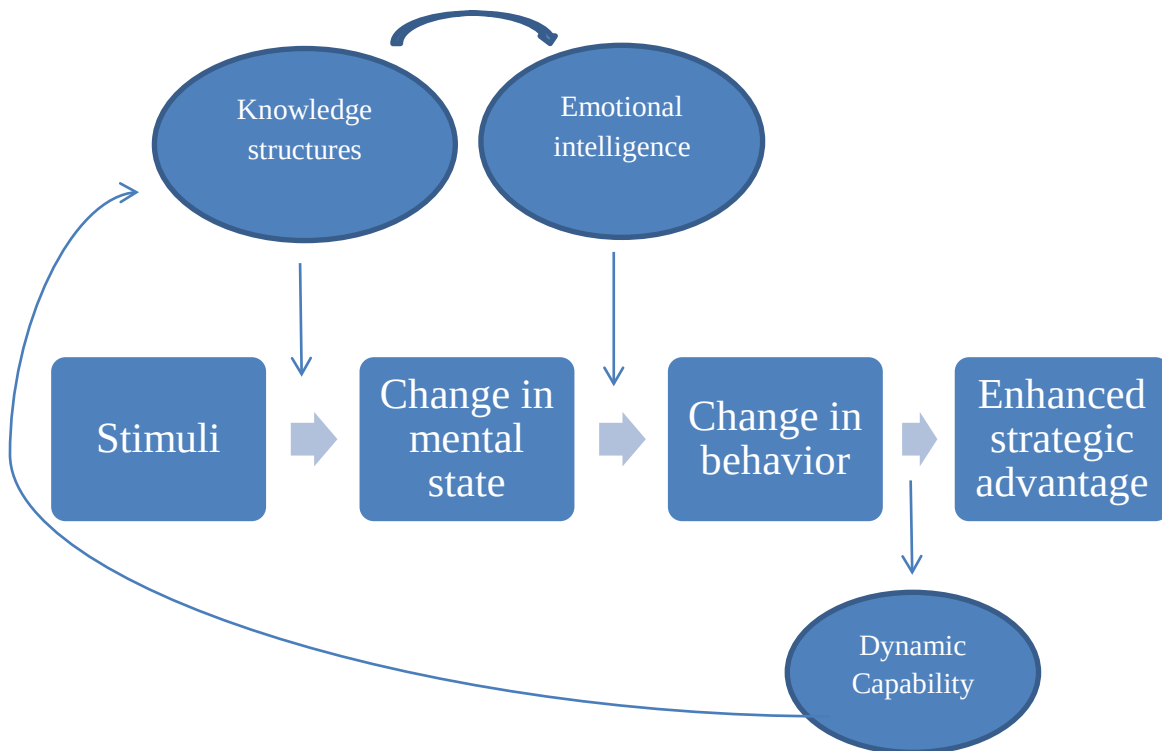
Research on the role of emotions in DCV questions the "cold cognition" approach. New cognitive psychology based on neuroscientific evidence shows that in practice, cognitions work interactively as well as conjointly with emotions in regulating thought and behavior (Duncan & Barrett, 2007). Emotions are evoked as conscious or subconscious responses to stimuli such as actual or expected rewards and punishments. Conscious responses involve cognitions, such as deliberation and evaluation; while subconscious responses suspend cognitions, and operate in a fast, automatic manner. Cognitions are mental states; and emotions are associated with variations in mental states. Emotions – also referred to as affects - may manifest as either transient moods (e.g. fear, anger) that generate temporary change in mental states, or intense motives or drives (e.g. pride, envy) that generate a more sustained modification in mental states. As mood and/or motives are activated, a change in behavior is triggered. The behavioral change may be deliberate, such as involving new strategic decisions rooted in a systematic evaluation of the stimuli. Or, it may be adhoc, such as involving a routinized emergent choice response, based on a general sense or gut feeling about the nature of the stimuli and its potential impacts. Exhibit 5 portrays this emotion-based organizational decision-making.

Exhibit 5: A model of emotion-based organizational decision-making



One example of emotional, affect-laden response widely researched in the field of strategy is ‘escalating commitment’ (Staw, 1976). Escalating commitment refers to the tendency of individuals and firms to persist with a path of decision and investments, simply because they had previously made a mental commitment to that path, even if that path is now economically and strategically not in the best interests. The emotional support for escalating commitment to historical path is often a major barrier to dynamic capabilities. There has therefore been considerable interest among scholars to study emotion-based ability, referred to as emotional intelligence, and the structures and processes that may aid in improving emotional intelligence (Salovey & Mayer, 1990). Emotional intelligence refers to the ability to recognize and regulate one’s emotions, so that desired decisions may be taken that are in the best interests. In addition, research also demonstrates importance of developing knowledge structures that aid in sense-making, so that positive emotions are activated, and inhibiting or escalating tendencies are limited. The role of emotional intelligence and knowledge structures (i.e. organizational and social structures and processes) in enhancing emotion-based organizational decision-making for enhanced strategic advantage, and in the process developing dynamic capability in the form of improved knowledge structures, is illustrated in Exhibit 6.

Exhibit 6: A model of developing emotion-based dynamic capability



In certain conditions, the need to attend to emotive factors is elevated (Huy, 2012). According to the appraisal theory of emotions, strong emotions are activated when people appraise events (real or imagined) as potentially impacting (positively or negatively) their important goals, values, or well-being, and strive to cope with these events (Ellsworth & Smith, 1988). When strong emotions are activated for large groups of people, or a few influential members, such as top executives, then they can have a substantive impact on organizational decision-making and dynamic capability development (Huy, 2012).

Examples of organizational events that can elicit strong collective emotions among large groups include radical change, change in organizational identity, change in top executive leadership, mergers and acquisitions, strategic alliances or joint ventures, and outsourcing and downsizing. Different sub-groups of people may experience different emotional responses to any such event, and may seek different ways to deal with their emotions (Huy, 2012). Some responses may be hurtful, for instance, when some key employees leave after a hostile takeover by another company; while others may be beneficial, for instance, when a change event makes the organization more attractive to new talent.

Examples of strong emotions in a small group, at the extreme one individual, having a substantive influence on organizational decision making are particularly salient in nascent and entrepreneurial organizations, family businesses, and in CEO-driven companies. Huy (2012) observes that how founders [and other leaders in such organizations] regulate “their own emotions, and how different regulation strategies influence firm development outcomes, have not attracted much systematic research; although one can intuitively visualize the way in which founders deal with their feelings such as pain, disappointment, and frustration, and surprise that emerge during the firm founding process should have consequences [on organizational decision-making,..... as would the] emotions that top executives consider as they consider major decisions such as investing important company resources in an uncertain product or geography; or how to respond to potentially damaging competitive actions such as severe price cutting or being acquired by the competitor.”

According to group-focus emotions theory, strong emotions may sometimes be activated even when the events do not directly impact individuals and those personally close to them such as their friends and relatives (Smith, Seger & Mackie, 2007). This may occur, for example, when people are joyous when their company wins an award or saddened when a nation's population is harmed by a major natural disaster. Such group-focus emotions are linked to social identity, or the group one strongly identifies with (Huy, 2012). When employees strongly identify with their group (e.g. firm, nation, world), then they are likely to experience emotions that are similar to those of others in that group when faced with events that impact their collective's identity or welfare (Dutton & Dukerich, 1991). This social identity is also likely to influence how they behave (Tajfel & Turner, 1979). For instance, social identity encourages people to act as the relevant group prototype, differentiating themselves from the behaviors of other groups (Turner et al, 1987). It also encourages people to engage in collective self-enhancement, by focusing attention on selective behaviors that favor their group, and disadvantage other groups (Hogg, Terry & White, 1995). As an example, Huy (2012) studied a large technology firm, where top executives emphasized structure and process perspectives of DCV. The study showed that strategy implementation faced significant group-focus emotional issues related to the social identities of the middle managers, such as newcomers vs. veterans, and English- vs. French-speaking. These group-focus emotions led middle managers to support or covertly undermine a particular strategic initiative, even when their immediate personal interests were not impacted.

Huy (2012) identifies the need for the organizations to develop their emotional capability, which the ability to recognize, monitor, discriminate, and attend to emotions of employees at both the individual and the collective levels. Emotional capability can be built into the firm's knowledge structures, which are also referred to as organization's routines. These knowledge structures reflect the collective resources, knowledge, and insights to regulate the emotions of the members, in ways that contribute to desired organizational behavior. His organizational emotional capability theory posits that "organizations that develop procedures related to emotion management and that provide systematic training on this subject to various managers likely reduce the need to rely on the innate competence of individuals' emotional intelligence."

Relational factors and Organizational decision-making

Research on the role of relational factors emphasizes the social, networked nature of human behavior in organizations. In dynamic markets, individuals often lack the capacity and capability to enact the full range of competences necessary to make and execute effective organizational decisions to cope with uncertainty and change. They must seek complementary resources, knowledge, and skills via their social network of relationships, both within the firm, as well as outside the firm such as the consultants or the alliance partners (Jones et al, 2011; Dyer & Singh, 1998). Relations in a social network play an important role in organizational options and decisions for acquiring, deploying and developing resources. Strong relations maintained by key individuals help to reduce the levels of uncertainty, and build trust, and confidence of the networks to positively expand the options available to an organization, and to help chose and develop appropriate options.

Social networks are also important because friendship and kinship ties can provide access to resources at less than market price (Starr and Macmillan, 1990), or even provide resources that are simply not available via market transactions (Baker, Miner & Eesley, 2003). Besides direct support, network relations can also be helpful by brokering third party referrals to other relevant ties with whom an organization is not directly connected (Burt, 2005). Networks thus strongly shape the trajectory of a firm because they are the resources 'at hand' that entrepreneurs use when solving problems (Baker, Miner & Eesley, 2003). Networks allow people to bootstrap resources, knowledge and insights, when such assets are not available to them directly based on their own historical paths of experiences, and thus improve the dynamic capability of the firms to respond more effectively to crises or new opportunities (Jones, Macpherson & Jayawarna, 2011).

Scholars emphasize the need for the organizations to develop their social capital, a term that connotes cognitive and emotive connections with key groups (Hanifan, 1920), and an ability to leverage these

connections for enhanced decision-making in dynamic markets (Coleman, 1988). Cognitive and emotive connections include “goodwill, fellowship, sympathy, and social intercourse among the individuals and families who make up a social unit.” (Hanifan, 1920). In order to leverage these connections for enhanced decision-making in dynamic markets, it is important that the connections are loose. Blomqvist & Seppänen (2003) observe that in dynamic markets, relationships need to be tentative and act as “future options” – i.e. investments into knowledge assets that may become valuable in future if the changing market conditions so demand. People must learn how to establish, manage, and dissolve relationships, while also maintaining a good reputation as a potential partner in the market. The capability to build trust and to collaborate, and to manage trust and collaborations becomes critical for effective decision-making under uncertain and crisis-laden situations.

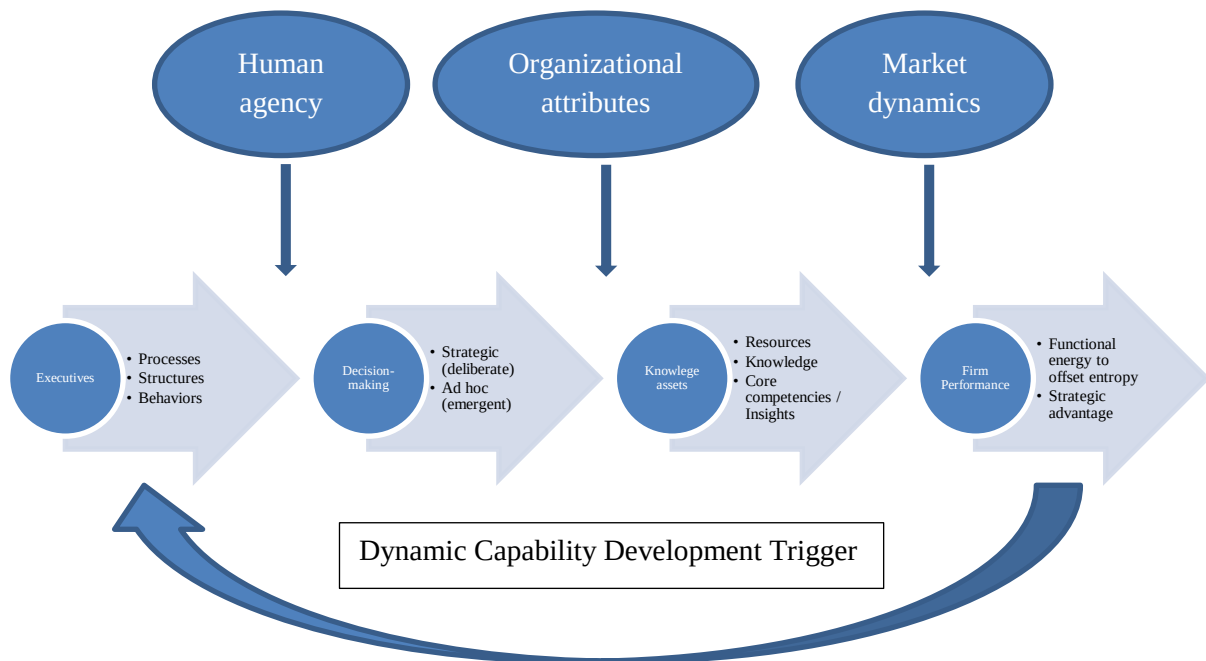
In dynamic markets, high levels of solidarity, i.e. strong long-term exclusive relationships within a small group, can be counterproductive (Portes and Landolt, 1996). Burt’s (2005) research demonstrates that optimal network value is created by structural holes, i.e. by brokering connections between segments that would be otherwise unconnected. Such a network provides unique information and control benefits to that actor. High levels of solidarity with a small group is referred to as within-group or bonding social capital, as opposed to “weak ties” for strategic and need-based exchange of resources, knowledge and insights, which are referred to as across-group or bridging social capital (Woolcock, 1998). In dynamic markets, bridging social capital based on weak ties have been found to be more effective in giving individuals flexibility of innovative action and access to new, creative knowledge structures that are more pertinent for dealing with change.

A Contingency Model of Dynamic Capabilities and Firm Performance

Research suggests that the relationship between dynamic capabilities and firm performance is moderated by three major contingency factors, including market dynamics, organizational attributes, and human agency. Market dynamics influences whether a firm’s knowledge assets generate sufficient functional energy to offset entropy pressures, and are able to assure and sustain strategic advantage. Drnevich & Kriauciunas (2011) find that market dynamism negatively impacts the contribution of ordinary knowledge assets and positively impacts the contribution of dynamic capabilities to firm performance. Similarly, organizational attributes, such as strategic intent, history, scale and scope may also influence how organizational decisions for continuity or change are translated into reconfiguration, reconfiguration, and reconstruction of knowledge assets. Baretto (2010) underlines how strategic commitment to significant future market growth might provide an impetus to dynamic capability development. Finally, human agency or freedom may accept the processes, structures, and behaviors triggered by past developments of dynamic capability, or may reject or modify that.

Exhibit 7 portrays the influence of the three contingency factors in the relationship between dynamic capability and firm performance. The exhibit includes not only the feedforward relationship between dynamic capabilities and firm performance, but also how firm performance generates a feedback loop, triggering executives to re-evaluate processes, structures and behaviors undergirding current dynamic capabilities. This re-evaluation process in turn triggers organizational decisions for strategic and/or adhoc developments in their knowledge assets, which include resources, knowledge, and core competencies/ insights.

Exhibit 7: A Contingency model of Dynamic Capability and Firm Performance



Discussion and Conclusions

Emerging research on the dynamic capability development has provided several rich insights on the foundations of firm longevity and mission accomplishment.

1. Dynamic capability development is a process, and this process is multi-dimensional. Different types of capabilities are needed for the firms to strategically respond to the different amounts of disruptive change (minor, moderate, major), and for different types of responses (absorptive, adaptive, innovative).
2. Social and organizational structures, including technological paradigm, ecological context, and organizational design, tend to shape dynamic capability development. These structures may act at a coarse level – i.e. some structures may have more supportive elements than the others. They may also act at a granular level – i.e. different structures may support development of different types of dynamic capabilities. Ambidextrous organizations may institute different types of structures to encourage development of diverse types of dynamic capabilities in different individuals, groups, and business functions and divisions. They may also need different types of structures to systematically link these different types of capabilities for impacting the overall organization appropriately based on the emerging situation.
3. Above all, human agency is a critical factor in dynamic capability development. Human agency acts through cognitive, emotional and relational mechanisms. Human cognitions, emotions, and relationships influence not only how things get done, but also the decisions about doing certain things and not others. Timely, effective, and appropriate decisions influence the ability of the organizations to dynamically react to the emerging situations, as well as to proactively shape the future of their situations. Many macro factors, including education, culture and institutions, influence human cognitions, emotions and relationships. However, the firms can also play an important role in not only shaping these macro factors, but also in building on these macro factors.

A culture of continuous assessment of firm performance and of the environmental contingencies helps firms identify the needs and the opportunities for change and continuous improvement. When knowledge assets and resources are continuously calibrated and aligned with this assessment culture, then the dynamic capabilities of a firm are likely to deepen. It is, however, important, that a culture of adjustment based on contingency assessment does not give rise to a reactive approach and

inadvertently erode dynamic capabilities. Therefore, assessment must have both strategic as well as adhoc dimensions, and include the voices of both existing stakeholders as well as the invisible and excluded groups.

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