DBA Africa Management Review
2012, Vol 2 No 3, pp 83-100

Dynamic Capabilities, Talent Development and Firm Performance

James M. Gathungu, PhD.[1] Julius K. Mwangi[2]

All firms aim at high performance which leads to high profits and sustainable competitive advantage. However all firms face a challenge on how to create sustainable competitive advantage especially on the rapid changing environment. This conceptual study paper hence looks at the dynamic capabilities which have been identified to assist firms in creating and sustaining competitiveness in the ever changing environment. Specifically the paper looks at the nature of the sensing, seizing, transforming and managerial dynamic capabilities and how their interconnection influence firm performance. The study is anchored on the dynamic capability theory. The main objectives of the study are to understand how interconnectivity of various clusters of dynamic capabilities influences firm performance. The paper also looks at the role of dynamism in talent development. This conceptual study paper looks at the paradigm shifts in the area of sustainable competitive advantage from resource based view, knowledge based view and dynamic capability view. The paper identifies a number of knowledge and research gaps in relation to performance by reviewing previous scholarly work in the study area. A conceptual model attempting to address the identified gaps is development and highlights the relationship among various clusters of dynamic capabilities and their influence to each other and to performance. The study views dynamic capabilities as an emerging paradigm of the modern business firm that propels sustainable high performance in rapidly changing environment.

Key Words: Dynamic Capabilities, Talent Development, Firm Performance

[1] Lecturer, Department of Business Administration, School of Business, University of Nairobi, Nairobi, Kenya. - *jmsgathungu@gmail.com*

[2] School of Business, Kenyatta University, Nairobi, Kenya.

INTRODUCTION

A fundamental question in the field of strategic management is how firms achieve and sustain competitive advantage. This is important as any firm that do not gain or sustain competitive advantage may not survive in the market. In the era of market globalization and internationalization, only firms that have the ability to create and sustain competitive advantage within the turbulent environment shall survive, that is, those firms that exploit their dynamic capability well. Competitive environments are changing at an accelerating rate, culminating in a high level of uncertainty. This growing uncertainty is the result of higher customer expectations, the dilution of borders between competitive environments and the move towards global competition. As the level of dynamics in business environments increases, the development of strategies that will differentiate the organization from its competitors becomes the key success factor (Feurer 1996).

Dynamic capabilities are directed at the creation of future resources, which means that they are typically vulnerable to short-term pressures to trim costs, because whether their impact was valuable can only be assessed *ex post*. Zollo and Winter (2002) and Winter (2003) caution that the maintenance of dynamic capabilities is expensive, and that an adhoc approach may be less costly. However in contrast, the costs of adhoc problem solving largely disappear if there is no problem to solve (Winter 2003).

In their work, Teece *et al* (1997) explained that dynamic capabilities are processes shaped by positions and paths. Those processes include co-ordination and integration, learning and reconfiguration. Positions and paths are the internal and external forces enabling and constraining dynamic capabilities. The internal position relates to the firm's assets which includes, its stock of technological, complementary, financial, reputational, and structural assets. The external position refers to the firm *vis-àvis* its institutional environment and its markets. Teece *et al* . (1997) explain that the firm's position will have a bearing on the firm's strategic posture and how competitive advantage could be gained.

The majority of the studies on dynamic capabilities assert that dynamic capabilities are necessary to deal with rapidly changing environments. However, Eisenhardt and Martin (2000) argued that they could also be used in moderately changing environments. They proposed that, in such environments, capabilities are detailed, analytic, stable processes with predictable outcomes, whereas in high velocity environments they are simple, highly experiential and fragile processes with unpredictable outcomes. This means dynamic capabilities can vary with levels of dynamism in the external environment. Winter (2003) contends

that the pace of change in an industry acts as a contingency factor in the decision to develop and deploy dynamic capabilities. Notably exogenous factors affect each firm differently, as they are moderated by managerial perceptions.

This also suggests that, although a dynamic capability could exist in a stored or potential state, its effectiveness may degrade if the time lags between its deployments mean that the firm context is so altered that what was effective in the past is less effective in the present, even though the dynamic capability itself might be unchanged.

Dynamic Capabilities and Knowledge Management.

One of the recognized limitations of the behavioral tradition in the study of organizational learning consists of the lack of appreciation of the deliberative process through which individuals and groups figure out what works and what does not in the execution of a certain organizational task (Cangelosi and Dill 1965). Organizational competence improves as members of an organization become more aware of the overall performance implications of their actions, and is the direct consequence of a cognitive effort more or less explicitly directed at enhancing their understanding of these causal links.

Organizational processes are often subject to significant causal ambiguity with respect to their performance implications (Lippman and Rumelt 1982), and particularly so in rapidly changing environmental contexts. Higher-level cognitive efforts and a more deliberate collective focus on the learning challenge can help to penetrate the ambiguity; although some part of it always persists. It is important to note that only a small fraction of articulable knowledge is actually articulated, and that organizations differ substantially on the degree to which they transform potentially articulable knowledge into articulated statements (Kogut and Zander 1992). While potentially requiring significant efforts and commitment on the part of the members of the organization, such articulation efforts can produce an improved understanding of the new and changing action-performance links, and therefore result in adaptive adjustments to the existing sets of routines or in enhanced recognition of the need for more fundamental change.

Knowledge codification (tacit knowledge) is a step beyond knowledge articulation (explicit knowledge). The latter is required in order to achieve the former, while the opposite is obviously not true. The fact that in most cases articulated knowledge is never codified bears witness to additional costs incurred when stepping up the learning effort from a simple sharing of individual experience to developing manuals and other process-specific tools (Zollo and Winter, 2002).

Whatever the intentions motivating the codification effort, the process through

which these tools are created and consistently updated implies an effort to understand the causal links between the decisions to be made and the performance outcomes to be expected (Zander and Kogut 1995, Nonaka 1994). Codification is potentially important as a supporting mechanism for the entire knowledge evolution process, not just the transfer phase.

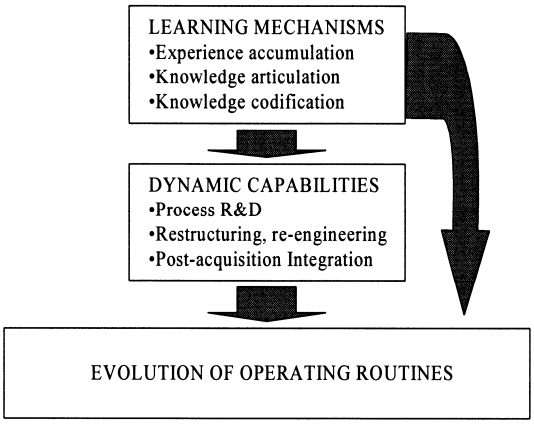


Figure 1: Learning, dynamic capabilities, and operating routines

Source: Zollo and Winter (2002)

Perspectives on firm competitiveness under dynamic capabilities

Currently an emerging view see competitive advantage to reside partly in the locations at which company's business units are based and cluster participation as an important contributor to competitiveness. This has been propagated by Porter's diamond system.

A nation's competitiveness, based on constant innovation, lies on four broad attributes namely factor conditions, demand conditions, related and supporting industries and firm structure, strategy and rivalry as well as the role of the government.

Factor conditions; A firm/nation does not inherit but creates the most important factors of production (skilled labor, scientific base). Hence Innovation depends on the rate, rather than stock, and efficiency of creation, upgrade and deployment of these resources. Thus these factors have to be highly specialized to the industry's particular needs.

Demand conditions: Competitive advantage arises if home demand gives firms a clearer of earlier picture of buyer's needs. The more demanding and sophisticated the home demand, the better. Importance of demand constraints due to local values and circumstances. Related and supporting industries: Presence in the nation of related and supporting industries that are internationally competitive.

Relevant dimensions of related industries: cost-effectiveness, parts innovation and upgrading, short lines of communication. Firm strategy, structure and rivalry: Competitive advantage arises from a combination of management practices and organizational modes favored in the country and sources of competitive advantage in the industry. Consider issues like company goals, management compensation among other. Strong local rivals are a stimulus to innovate.

The role of Government: The proper role is considered to be both a catalyst and a challenger for innovation. Except in extreme cases indirect rather than direct role. Main tasks includes: promote rivalry, encourage change and specialize in factor creation.

Although the environment may provide an initial competitive advantage, it is the dynamism of the diamond what leads to a sustained competitive advantage making this framework a first attempt to go beyond cross-sectional theories of strategy. Aspects of the local environment constitute a dynamic system. The effect of one determinant depends on the others implying a mutual reinforcement of all determinants. Hence sustained success requires the interaction of favorable conditioned of determinants as firms lose competitive advantage due to weakness in their local environment or other internal problem. The environment, via diamond, affects firm's initial condition and its managerial choices (Porter 1991, Porter, 1998).

Firms must understand and exploit their local environment to achieve CA. Thus there is need for firms to understand the balance between environmental determinism and company choice in shaping competitive outcome and understand the degree of stickiness or inertia in competitive positions once a firm stops progressing. Also firms need to know how necessary or helpful it is to push even further back in the chain of causality as well as challenge of crafting empirical research to make further progress in understanding this dynamic of strategy (Porter, 1998)

Origins and scope of dynamic capabilities

The dynamic capabilities view is considered to originate from Schumpeter's (1934) innovation-based competition where competitive advantage is based on the creative destruction of existing resources and novel recombination into new operational capabilities. These ideas were further developed in the literature, such as architectural innovation, configuration competence and combinative capabilities (Henderson & Cockburn 1994, Kogut & Zander 1992, Galunic and Rodan, 1998). Extending these studies, Teece *et al* (1997) developed the notion of dynamic capabilities, and their seminal paper is considered the most influential source on dynamic capabilities, together with a recent framework of dynamic capabilities (Teece, 2007). Teece and colleagues (Teece *et al* . 1997, Teece, 2007) see competitive advantage in turbulent environments as a function of dynamic capabilities rather than competitive positioning or industry conflict. They used the term dynamic to reflect the capacity to renew competences to achieve congruence with the changing environment.

According to Dosi *et al* (2000), the dynamic capabilities view follows the resource-based view (RBV), whereas RBV emphasizes resource picking

(selecting resource combinations), dynamic capabilities stress resource renewal (reconfiguring resources into new combinations of operational capabilities). Dynamic capabilities are required if the firm is to sustain its competitiveness as markets and technologies change, although some firms will be stronger than others in performing some or all of the tasks (Teece 2007). A firm's assets must also be kept in alignment to achieve the best strategic fit, that is, firm with ecosystem, structure with strategy, and assets with each other. (Teece, 2007). Complementarities need to be constantly managed (reconfigured as necessary) to achieve evolutionary fitness, avoiding loss of value should market leverage shift to favor external complements.

Dynamic capabilities and resources

Teece (2007) state that the dynamic capabilities builds on the resource-based approach. While the resource-based approach is inherently static, it is nevertheless relevant to dynamic capabilities. As noted by Teece *et al* (1997) the resource-based perspective also invites consideration of strategies for developing new capabilities. Zott (2003) similarly recognizes that dynamic capabilities are more than a simple addition to resource based view since they manipulate the resources and capabilities that directly engender rents. Collis (1994) and Winter (2003) noted that one element of dynamic capabilities is that they govern the rate of change of ordinary capabilities. However, the notion advanced here is that, at least analytically, dynamic capabilities can be disaggregated into sensing, seizing, transforming and managerial activities.

Firms with good dynamic capabilities will have management that is strategic in nature and achieves the value enhancing orchestration of assets inside, between, and amongst enterprises and other institutions within the business ecosystem. Dynamic capability is a meta-competence that transcends operational competence. It enables firms not just to invent but also to innovate profitably (Teece, 2006).

Teece (2007), argues that if a firm possesses resources/competences but lacks dynamic capabilities, it has a chance to make a competitive return (and possibly even a supra-competitive return) for a short period; but it cannot sustain supra-competitive returns for the long term except due to chance. It may earn Ricardian (quasi) rents when demand increases for its output, but such quasi-rents will be competed away. It does not earn those Schumpeterian rents associated with new combinations and subsequent recombination, or Kirznerian rents associated with bringing markets back into equilibrium. That firm might earn short-term Porterian rents associated with building defenses against competitive forces but this is far too reactive for long-term success (Porter, 1991). Dynamically competitive firms do not just build defenses to competition; they help shape competition and marketplace outcomes

through entrepreneurship, innovation, and semi-continuous asset orchestration and business reconfiguration. The archetypical firms with competences/ resources but lacking dynamic capabilities will in equilibrium earn a living by producing and selling the same product, on the same scale and to the same customer population (Winter, 2003).

Understanding how to enhance performance of the enterprise through sensing future needs, making quality, timely, and unbiased investment decisions inside a well-designed business model, executing well on those decisions, effectuating productive combinations, promoting learning, reengineering systems that no longer work well, and implementing good governance remains enigmatic (Teece 2007).

Dynamic capabilities and competitive advantage

The literature is divided about the links between dynamic capabilities and competitive advantage. Some works and notably Teece *et al* . (1997) make an explicit link between dynamic capability and competitive advantage. If the firm has a dynamic capability, it must perform well, and if the firm is performing well, it should have a dynamic capability (Helfat and Peteraf, 2003). Others have also linked dynamic capabilities to competitive advantage but have asserted that this link was indirect. For instance Zott (2003) argues that dynamic capabilities are indirectly linked with firm performance by aiming at changing a firm's bundle of resources, operational routines, and competencies, which in turn affect economic performance. Ambrosini and Bowman (2009), following the RBV, suggest that the VRIN resource base is directly linked to rents, but as dynamic capabilities are one step removed from rent generation, their effect is indirect.

While Helfat *et al* (2007) disconnect dynamic capabilities from competitive advantage, they suggest that the performance of dynamic capabilities should be evaluated, and they propose two measures to do so. Those performance yardsticks are evolutionary fitness, which refers to how well the capability enables the firm to make a living by creating, extending, or modifying its resource base, and technical fitness, which is about the quality dimension of capability performance. It captures how effectively a capability performs its intended function. Eisenhardt and Martin (2000) explain that the functionality of dynamic capabilities can be duplicated across firms, their value for competitive advantage lies in the resource configurations that they create, not in the dynamic capabilities themselves and while dynamic capabilities are certainly idiosyncratic in their details, the equally striking observation is that specific dynamic capabilities also exhibit common features. They conclude that dynamic capabilities are equifinal, substitutable and fungible hence many

firms will have similar dynamic capabilities.

Meaning and definitional literature

There are many definitions of dynamic capabilities by various scholars and authors. This paper adopts the definition by Teece (2007) which defines Dynamic capability as the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments. Dynamic capabilities can be categories as sensing, learning, integrating or coordinating.

Sensing capability is defined as the ability to spot, interpret, and pursue opportunities in the environment. Business units must sense the environment to gather market intelligence on market needs, competitor moves, and new technologies in order to identify new product opportunities, and decide to engage in exploratory early-stage research activities to pursue these opportunities with new product prototypes (Pavlou, 2011). The three basic routines of the sensing capability are: generating market intelligence, disseminating market intelligence, and responding to market intelligence (Teece, 2007).

Learning capability is defined as the ability to revamp existing operational capabilities with new knowledge. According to Zahra and George (2002) who developed absorptive capacity (learning) as a dynamic capability, the four underlying routines of the proposed learning capability are acquiring, assimilating, transforming, and exploiting knowledge. Acquiring knowledge relates to obtaining new knowledge (Grant, 1996), assimilating knowledge relates to knowledge articulation and knowledge brokering (Eisenhardt & Martin 2000). Transforming knowledge relates to innovative problem-solving, brain storming and creative new thinking (Henderson & Cockburn 1994). Exploiting knowledge relates to pursuing new initiatives, seizing opportunities with learning and revamping operational capabilities (Grant 1996, Teece 2007).

Integrating capability is defined as the ability to combine individual knowledge into the unit's new operational capabilities. Its routines (contribution, representation, and interrelation of individual input to the collective business unit) are closely related to the dynamic capabilities literature. Contribution relates to disseminating individual input within the organisation (Eisenhardt and Martin, 2000); representation relates to visualizing how people fit in, how other people act, and how the unit's activities fit together and interrelation relates to integrating individual inputs within a unit to hone the reconfigured operational capabilities by executing a collective activity (Helfat and Peteraf, 2003).

Integrating capability is proposed to facilitate reconfiguration through its three basic routines; contribution to the unit helps collect and combine

individual inputs; and representation builds a shared understanding, creates a common ground, and develops new perceptual schema. Since reconfiguration requires a new logic of collective interaction, interrelation helps the routinization of the reconfigured operational capabilities (Eisenhardt & Martin 2000). Teece (2007) views the integration of knowledge as a foundation of dynamic capabilities.

Coordinating capability is defined as the ability to orchestrate and deploy tasks, resources, and activities in the new operational capabilities. The basic routines of coordinating capability also draw upon the dynamic capabilities literature, namely assigning resources to tasks, appointing the right person to the right task, identifying complementarities and synergies among tasks and resources, and orchestrating collective activities (Helfat and Peteraf, 2003). Coordinating capability is proposed to facilitate the reconfiguration of operational capabilities. It enables firms to recognize, assemble, and allocate resources by facilitating the dissemination of market intelligence across the unit (Collis,1994). Coordinating capability helps firms assign the right person to the right task (Ambrosini and Brown, 2009) and helps firms better synchronize their tasks and activities (Helfat & Peteraf, 2003).

Philosophy of Dynamic Capabilities

The concept of dynamic capabilities has evolved from the resource-based view (RBV) of the firm (Teece *et al* , 1997, Eisenhardt and Martin 2000). RBV proponents argue that simultaneously valuable, rare, inimitable and non-substitutable resources can be a source of superior performance, and may enable the firm to achieve sustained competitive advantage (Barney, 1991). Dynamic capabilities have lent value to the RBV arguments as they transform what is essentially a static view into one that can encompass competitive advantage in a changing context (Barney, 1991). Dynamic capabilities are the capacity of an organization to purposefully create, extend or modify its resource base (Helfat *et al* , 2007).

Where an essentially stable environment is perceived there would still be some requirement to adapt the resource stock of the firm. Although the pace of change is slow and the extent of change is limited, requirement for incremental adjustments and improvements to the resource stock of the firm would remain (Ambrosini *et al* , 2009). Continuous improvement is sufficient to ensure that the resource stock maintains its value in this relatively stable context. Continuous improvement relates to the continual and often small adjustments that a firm makes to its products or operations (Feurer, 1996).

This form of dynamic capability describes processes that effect changes, albeit incremental changes, to the resource base of the firm. Thus we label this first level of dynamic capability as incremental. This suggests that dynamic

capabilities do not only happen in a rapidly changing environment but as Eisenhardt and Martin (2000) explain, in more stable market contexts dynamic capabilities are simple and iterative, and rely on the incremental and continuous improvement of extant resources. Moreover, these incremental dynamic capabilities are likely to be repeatable and embedded in the firm (Helfat and Peteraf, 2003; Helfat *et al* .,2007). Hence, although this type of dynamic capability brings an adaptive change to the resource base, the ways these changes are effected do not change.

Renewing dynamic capabilities arose from the incremental DC and this considered the use of DC to gain SCA in dynamic market environments. These dynamic capabilities are utilized to sustain a rent stream in changing environments; they refresh and renew the nature of the resource stock, rather than incrementally adapt it. They are needed as resource-based advantages in dynamic environments may well be rapidly eroded. As the environment shifts, resource advantages can become disadvantages if no attempts are made to refresh the resource stock (Ambrosini *et al* , 2009). As Leonard-Barton (1995) explains, valuable resources can become core rigidities if they are not modified, combined with different equipment or extended for new use, such as to produce new product lines. The renewing dynamic capabilities are not merely about continual, incremental changes; they are concerned with modifying the resource stock in such a way that its utility is altered so that rent generation is sustained. Sustaining these dynamic capabilities is an essential requirement for any firm to continue having a resource base which allows them to earn a living (Winter, 2003); thus the costs of sustaining dynamic capabilities is most probably inevitable for any firm in a dynamic environment (Ambrosini and Bowman, 2009). Some firms may try to avoid incurring these costs, but they take a risk of not being able to appropriately renew their resource base.

Regenerative dynamic capabilities are likely to be deployed by firms whose managers perceive that the environment is turbulent, where external changes are non-linear and discontinuous (D'Aveni, 1994). As Zahra and George 2002) explain, in volatile environments such as in high-technology industries firms need to repeatedly reconfigure their set of valuable resources and as a corollary they need to be able to have the capacity to modify their current dynamic capabilities. The presence of these regenerative dynamic capabilities can be inferred, as it may help explain why some firms find success in the face of environmental turbulence whilst their competitors fail (Danneels, 2002). Indeed many firms facing a discontinuous environment are not able to overcome their own organizational inertia and have failed as they have not changed internally themselves (Rumelt, 1995). According to Ambrosini *et al* , (2009) the purpose of regenerative dynamic capabilities would be to embed new, or to improve extant, dynamic

capabilities. Regenerative dynamic capabilities like any other dynamic capabilities come in many forms, but they may be very similar to the renewing capabilities, for instance, they might involve restructuring, learning, leverage, but the key difference is that whereas renewing capabilities operate directly on the resource base, regenerative capabilities impact on the renewing or incremental dynamic capabilities.

Theoretical foundation

This study is anchored on dynamic capabilities theory. This theory seeks to explain how firm achieve and sustain competitive advantage despite an ever changing environment with appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competencies toward a changing environment (Helfat & Peteraf, 2003, Helfat *et al*, 2007, Porter, 1991).

Many studies have argued that competitive advantage originates in the local environment in which the firm is based. Therefore the four attributes "diamond" in a firm's home market promote or impede a firm's ability to achieve competitive advantage. However there others with opinion that true origin of competitive advantage may be found in firm's proximity or local environment. Firm create and sustain competitive advantage because of their capacity to continuously improve, innovate and upgrade their competitive advantage overtime. Hence successful firms are those that improve and innovate in ways that are valued not only at home but elsewhere (D' Aveni, 1994, Feurer, 1996).

Paradigms of Dynamic Capabilities

This paper identified some of existing paradigms and describe aspects of an emerging new paradigm that is labeled dynamic capabilities. The dominant paradigm in the field during the 1980s was the competitive forces approach developed by Porter (1991). This approach, rooted in the structure-conduct-performance paradigm of industrial organization (D' Aveni, 1994), emphasizes the actions a firm can take to create defensible positions against competitive forces. A second approach, referred to as a strategic conflict approach is closely related to the first in its focus on product market imperfections, entry deterrence, and strategic interaction. The strategic conflict approach uses the tools of game theory and thus implicitly views competitive outcomes as a function of the effectiveness with which firms keep their rivals off balance through strategic investments, pricing strategies, signaling, and the control of information. Both the competitive forces and the strategic conflict approaches appear to share the view that rents flow from privileged product market positions (Rumelt, 1984, Winter, 2003, Zott 2003).

Another distinct class of approaches emphasizes building competitive advantage through capturing organizational rents stemming from fundamental firm-level efficiency advantages. These approaches have their roots in discussion of corporate strengths and weaknesses; they have taken on new life as evidence suggests that firms build enduring advantages only through efficiency and effectiveness, and as developments in organizational economics and the study of technological and organizational change become applied to strategy questions. One strand of this literature, often referred to as the 'resource-based perspective,' emphasizes firm-specific capabilities and assets and the existence of isolating mechanisms as the fundamental determinants of firm performance (Rumelt, 1984; Teece *et al* 1997; Barney, 1991).

Another component of the efficiency-based approach as developed by Teece (2007) shows how rudimentary efforts are made to identify the dimensions of firm-specific capabilities that can be sources of advantage, and to explain how combinations of competences and resources can be developed, deployed, and protected. This is referred to as the 'dynamic capabilities' approach and stress exploiting existing internal and external firm specific competences to address changing environments. Elements of the approach can be found in Nelson and Winter (1982) and Teece (2007). Since this approach emphasizes the development of management capabilities, and difficult to-imitate combinations of organizational, functional and technological skills, it integrates and draws upon research in such areas as the management of R&D, product and process development, technology transfer, intellectual property, manufacturing, human resources, and organizational learning.

The dynamic capability view

According to Teece 2007, the RBV does not adequately explain the process via which some firms reach positions of competitive advantage in dynamic markets or in situations of change. An approach based on dynamic capabilities endows the basic RBV perspective with a more dynamic nature which emphasizes the strategic value of higher order resources (dynamic capabilities) allowing the generation of and renewal of core competences and competitive advantage (organizational learning process). Teece, Pisano and Shuen emphasize the key role of managers in appropriately adapting, integrating and reshaping organizational skills and resources as well as internal and external functional competences. According to these authors, the term ‘dynamic capabilities’ refers to the firm’s ability to integrate, build upon and reconfigure internal and external resources and functional competences to deal with environments which are constantly evolving (Teece *et al*, 1997).

Everyday use of the analytical perspective on dynamic capabilities

endows strategic processes with greater fluency and rationality (Teece, 2007). These are the processes that allow transition between activity and those markets where the firm is already established, as well as providing opportunities it may develop at any time in the future. This implies that ,when a firm is regarded as a continuous well-ordered flow of dynamic capabilities aimed at attaining strategic objectives, this enables managers to arrive at more balanced decisions, affecting aspects such as resources, the firm's activities, present markets and any new opportunities which may arise in the future (D' Aveni, 1994).

CONCEPTUAL FRAMEWORK

Dependent variable

This study identifies Firm performance as the dependent variable. To measure firm performance both financial and nonfinancial measures can be used.

Moderating variables

The study indentified the following as moderating variables:

Sensing dynamic capabilities; useful in identification and assessment of an opportunity and are easiest to embed in the organization.

Seizing dynamic capabilities; help in mobilization of resources to address an opportunity and to capture value. Transforming dynamic capabilities; important for continued renewal though are inherently difficult to routinize. Managerial dynamic capabilities; helps in orchestrating the operation and functions of all activities within a firm.

Independent variables

The following are identified as independent variables and are key pillars to high performance of the firm through grouping in their respective clusters.

For sensing DC the variables considered includes: internal R&D, selection of new technology, tapping compelementors and suppliers innovation, customer needs analysis and market analysis. Their positive influence to the sensing DC leads to high performance and also triggers the action of seizing capabilities.

Seizing dynamic capabilities include; Firm routines, structures, designs and procedures, building loyalty and commitment of employees and decision making process. These leads to high firm performance at a corporate level and influence transformation dynamic capabilities positively.

Transformation dynamic capabilities main pillars includes; firm's core competences, knowledge management and corporate governance. These leads to change of any main production factor leading to more marketable products or services and hence to a high rent thus positively influencing firm performance.

Managerial dynamic capabilities main pillars include; experience, trust, leadership skills and decision making. These are expected to be highly influenced by the transforming dynamic capabilities and determines the managerial reactions.

A combination of all these capabilities and interconnection leads to high performance of the firm. They also ensure sustainability of the competitive advantage in the rapid changing environment.

Conceptual Model

This study developed this conceptual model from the literature review.

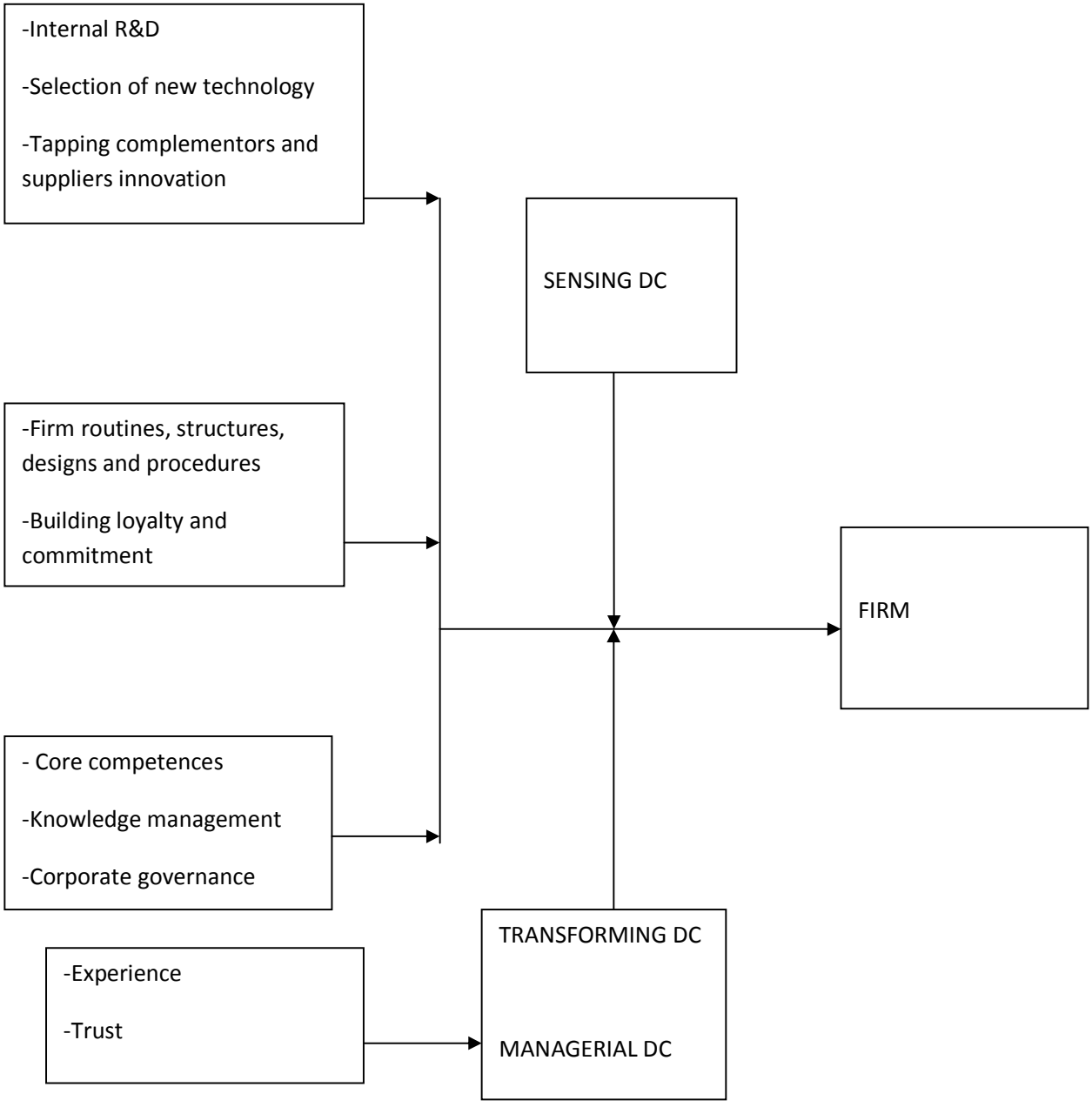


Figure 4: Dynamic capabilities and firm performance.

CONCLUSION

The in-depth literature review shows that there is need for every firm to understand its own source of dynamic capabilities. According to Teece (2007) the best way to understand the dynamic capabilities is to cluster them according to their nature and development so as to have four categories for sensing, seizing, transforming and managerial.

This study has revealed that the dynamic capabilities positively influence the firm profit and thus performance. Sensing capabilities are useful in identification and assessment of an opportunity within firm's environment. They involves exploring technological opportunities, probing markets, and listening to customers, along with scanning the other elements of the business ecosystem. Seizing dynamic capabilities help in mobilization of resources to address an opportunity and to capture value. These capabilities include designing business models to satisfy customers and capture value. They also include securing access to capital and the necessary human resource (Teece, 2007). Transforming dynamic capabilities are important for continued renewal and are needed when radical new opportunities are to be addressed. Also they are needed periodically to soften the rigidities that develop over time from asset accumulation, standard operating procedures, and insider misappropriation of rent streams (Teece, 2007). Managerial capabilities orchestrates the rest and coordinates on adoption, change and proper actions.

In conclusion the study shows that the dynamic capabilities influence firm performance positively and thus any firm that fails to embrace them may not survive in the dynamic market environment. Also it has revealed that to get best results from dynamic capabilities, there is need for interconnection of the various clusters.

REFERENCES

Ambrosini, V. & Bowman, C. (2009) ‘‘What are dynamic capabilities and are they a useful construct in strategic management?’’, International Journal of Management Reviews, 11(1), 29-49.

Ambrosini,V., Bowman, C. & Collier, N, (2009). Dynamic Capabilities: An Exploration of How Firms Renew their Resource Base. *British Journal of Management*. 20, S9–S24.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*. 17 (1), 99-120.

Cangelosi, V. E. & Dill, W.R. (1965). *Organizational learning observations: toward a theory*. Administrative Science Quarterly, 10 (2),175-203.

Collis, D. J. (1994). Research note: how valuable are organizational capabilities? *Strategic Management Journal*. Winter Special Issue 15: 143–152.

D’Aveni, R. A. (1994). Hyper Competition: Managing the Dynamics of Strategic Manoeuvring. New York: The Free Press.

Danneels, E. (2002). The dynamics of product innovation and firm competencies. *Strategic Management Journal*. 23 (12),1095-1121.

Dosi, G., Nelson, R. R. & Winter, S. G. (2000). *Introduction. in the Nature and Dynamics of Organizational Capabilities*. New York: Oxford University Press. 1–24.

Eisenhardt, K. M. & Martin, J. A. (2000). “Dynamic capabilities: what are they?”, *Strategic Management Journal*. 21 (Nos 10/11), 1105-1121.

Feurer, R. (1996). Competitive environments, dynamic strategy development capabilities and business performance. Benchmarking for Quality Management & Technology, 3 (3), 32-49

Galunic, D.C. & Rodan, S. (1998). “Resource recombinations in the firm: knowledge structures and the potential for Schumpeterian innovation”, *Strategic Management Journal*, 19 (12), 1193-1201.

Grant, R.M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*. 14(8), 593-605.

Helfat, C. & Peteraf, M. (2003). The dynamic resource-based view: capability lifecycles. *Strategic Management Journal*. 24**,** 997–1010.

Helfat, C., Finkelstein, S., Mitchell, W., Peteraf, M.A., Singh, H., Teece, D.J., & Winter, S.G., (2007). *Dynamic Capabilities: Understanding Strategic Change in Organizations*. Blackwell: Oxford, U.K.

Henderson, R.M. & Cockburn, I. (1994). “Measuring competence? Exploring firm effects in pharmaceutical research” *Strategic Management Journal*, Winter Special Issue 15.

Kogut, B. & Zander, U. (1992). Knowledge of the enterprise, combinative capabilities and the replication of Technology. Organizational Science, 3(3), 383–397.

Lavie, D. (2006). Capability reconfiguration: an analysis of incumbent responses to technological changes. Academy of Management Review, 31 (1),153-174.

Leonard-Barton, D. (1995). Wellsprings of Knowledge- Building and Sustaining the Sources of Innovation. Boston: Harvard Business School Press: MA

Lippman, S.A. & Rumelt, R.P.(1982). Uncertain imitability: an analysis of interfirm

differences under competition." *Bell Journal of Economics* 13(2): 418–438.

Nelson, R.R. & Winter, S.G. (1982). *An Evolutionary Theory of Economic Change*. Cambridge, MA: Belknap Press of Harvard University Press.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. Organization Science, 5(1), 14-37.

Pavlou, P. A. (2011). Understanding the Elusive Black Box of Dynamic Capabilities. *Decision Sciences Journal* C 2011.

Porter, M.E. (1991). *Towards a Dynamic Theory of Strategy*. Strategic Management Journal

Porter, M.E. (1998). *The Competitive Advantage of Nations*. London: Macmillan.

Rumelt, R. (1984). Towards a strategic theory of the enterprise. In Competitive. *Strategic Management*. Lamb RB (ed). Prentice-Hall: Englewood Cliffs.

Rumelt, R. (1995). "Inertia and transformation. In Resource Based and Evolutionary Theories of the Enterprise" Boston: MA Montgomery C (ed.). Kluwer Academic.

Teece, D.J. (2007). "Explicating dynamic capabilities: the nature and microfoundations of sustainable enterprise performance", *Strategic Management Journal*, 28,(13), 1319-1350.

Teece, D.J., Pisano, G. and Shuen, A. (1997). "Dynamic capabilities and strategic management", *Strategic Management Journal*, 18(7), 509-533.

Winter, S. G. (2003). ''Understanding dynamic capabilities'', *Strategic Management Journal*, 24(10), 991-995.

Zahra, S. A. & George, G. (2002). *Absorptive capacity: a review, reconceptualization, and extension.* Academy of Management Review, 27(2), 185-203.

Zollo, M. & Winter, S.G. (2002). *Deliberate learning and the evolution of dynamic capabilities.* Organization Science, 13 (3), 339-51.

Zott, C. (2003). Dynamic capabilities and the emergence of intra-industry differential firm performance: insights from a simulation study. *Strategic Management Journal* 24(2): 97–125.