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## UNDERSTANDING AND CRITICIZING DYNAMIC CAPABILITIES MODELS

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### ABSTRACT

There are at least four researchers who discussed the dynamic capabilities creation model, including Zollo & Winter (2002), Helfat (2007), Teece (2007) and Mc Carthy & Gordon (2010). This paper aims to understand and criticize the models proposed by the four researchers mentioned above. The method used is literature study. Therefore this study can be used as a reference in formulating dynamic capabilities creation model capable of enduring organization environment dynamics. The resulting model understanding and criticism exhibits several important discussion that could be used as guidelines in designing a more comprehensive dynamic creation model.

### KEY WORDS

Dynamic Capabilities Models, creation models, organization, management.

A company's success or failure to build a sustainable competitive advantage could be observed from two perspectives through market-based and resource-based view. The market-based view is based on the idea that the company is an open system. As an attempt to defend its existence, the company was required to establish interaction with the environment, to be able to adapt well to the environment dynamics. Interaction and adaptation to the environment must be interpreted as the company's ability to understand the business ecosystem, by making the change as an integral part of strategic management process (Porter, 1981; Davenport et.al, 2006). On the other hand, resource-based view explains the success or failure of a company with differences in companies' resources. Armed with its own resources, a company would use its capability which generally shaped as its operational capability to perform company's daily activities in order to build a sustainable competitive advantage (Barney, 1991; Grant, 1991; Peteraf, 1993; Teece, et.al, 1997; Simon, 2010; Parayitam & Teachers., 2010; Ahenkora & Aedji, 2012; Tseng & Lee, 2012).

Environments dynamic changes have brought consequences, that the success of the company, is more due to the company's ability to create dynamic capability. It is characterized by the ability to maintain company's capabilities according to the environment dynamics through a systematic and sustainable learning process (Winter, 2003). Dynamic capability is a concept derived from the resource-based view. It is an approach that could explain a company's success in building a competitive advantage in rapidly changing environments. (Esterby et.al, 2009; Ahenkora & Aedji, 2012; Tsheng & Lee, 2012). Instead, failure to create a sustainable competitive advantage, in the midst of rapidly changing dynamic environment and hypercompetitive competition, mostly due to the companies inability to create a competitive strategy based on resources which are not only merely routine but also a dynamic capability to exploit available opportunities. In other words, the company only focused on activities that patterned and repetitive, without innovation. Therefore market forces become weaker (Leonard & Barton, 1992; Winter, 2003).

*Understanding Dynamic Capabilities Model Creation Process.* Discussion of dynamic capabilities model creation have been conducted by several researchers, including Zollo & Winter (2002), Helfat (2007), Teece (2007) and Mc Carthy & Gordon (2010). Zollo & Winter (2002) developed a dynamic capabilities creation model which derived from learning

mechanisms through and organizational routine and accumulation experience, as well as knowledge articulation and codification (See Figure 1). It is in line with the definition developed by formentioned researchers, that the dynamic capability is learned and possess stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness.

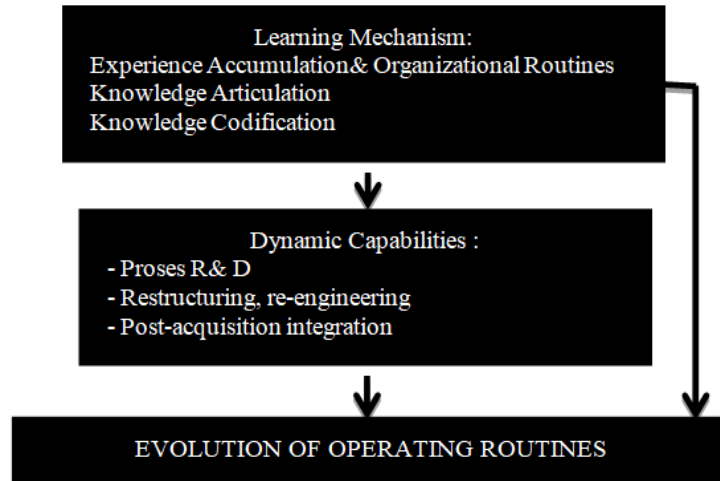


Figure 1 – Learning, Dynamic Capabilities, and Operating Routines (Source: Zollo & Winter, 2002)

Experience Accumulation and Organizational routines are generally a stable behavior pattern and shaping organizational characteristics, as well as a response to the environment dynamics. In connection with the activities, Zollo & Winter (2002) explain there are two types of operational routine. Routine operations which is underway, in familiar company, and learning/search routine, which routines is to identify any necessary changes to the operational routine. Furthermore, knowledge articulation/articulation is a collective learning, where people express their opinions and beliefs in a constructive confrontation and challenge each viewpoint by sharing and comparing their respective experiences. The next step is knowledge Codification, namely cognitive effort on a higher level, where individuals construct their own understanding of the internal routines performance implications in written form, user manual, blueprint, and others.

In other perspective, Teece, et.al (1997) argue that dynamic capabilities also require knowledge creation to be able to maintain the continuity of organization regular operation, either through sustainable modification, recycle reconfiguration and redeployment, therefore a company can avoid zero-profit condition. Furthermore, Teece (2007) also confirmed that the dynamic capabilities make a company capable to create, distribute and protect its resources in endeavor to support the organization's competitive advantage in the long term.

Teece (2007) explains that micro-foundations of dynamic capabilities include unique and different skills, organizational processes, procedures, structure, discipline, decision rule, and some micro foundations have more important roles on organizations while conducting three stages of the dynamic capabilities creation. Teece (2007) stressed that the process of creating the dynamic capabilities have to go through three stages of creation in order: (i). Sensing, i.e. activities related to scanning an opportunity arising from the environment dynamics which is a small part of the business ecosystem dynamics; (ii). Seizing, this second step focuses more on organizational activity that seeks to optimize and mobilize the company's resources to snatch the market; (iii). Managing threats/transforming is a process of continuous renewal activity which must be operated at the organizations, individuals, and networks level to coordinate/integrate, learn, and make constant changes to the company's assets, both intangible and tangible (see Figure 2).

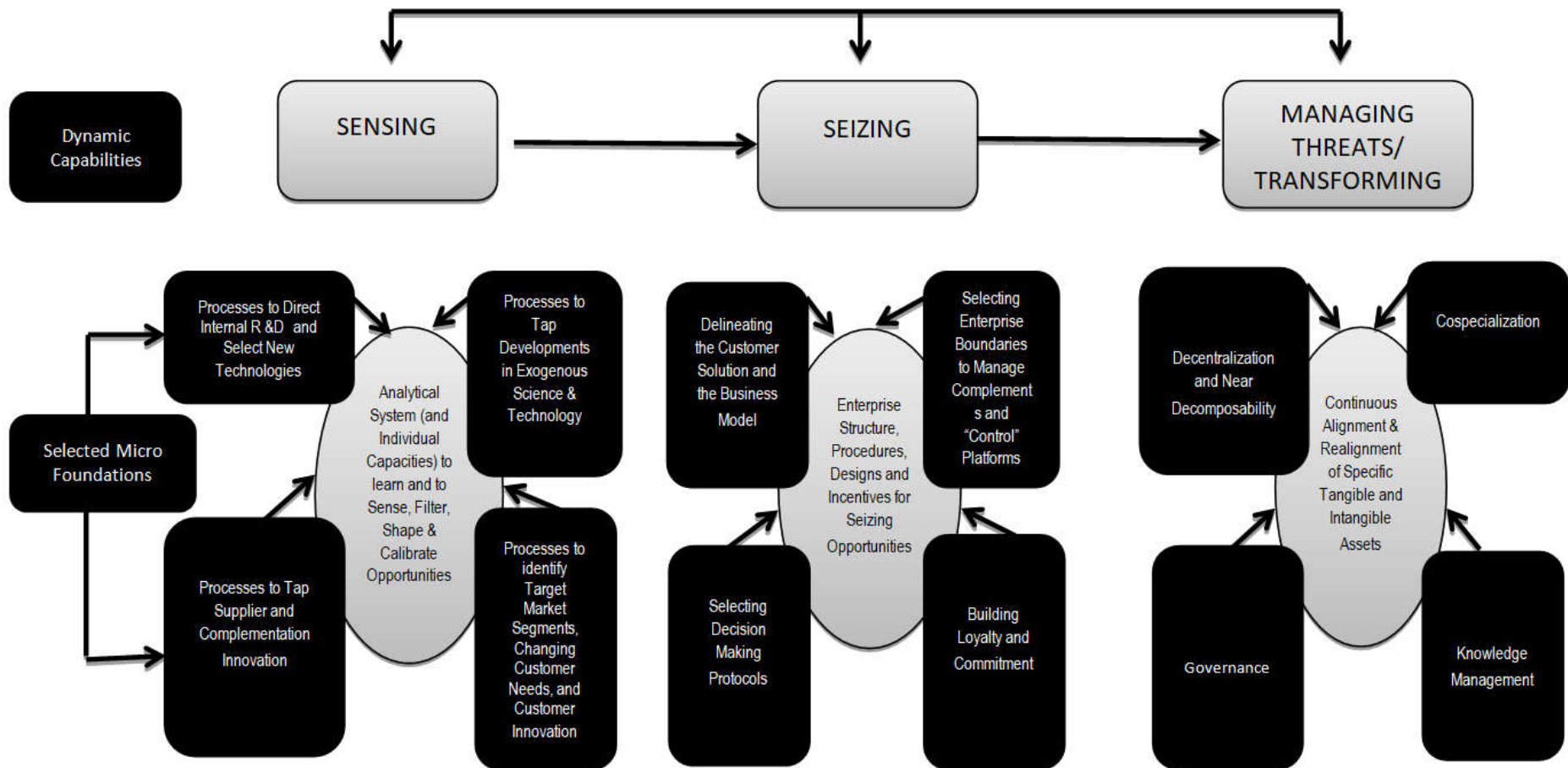


Figure 2 – Foundation of dynamic capabilities and business performance (Source: Teece, 2007)

Furthermore, a simpler dynamic capability creation model developed by Helfat et.al (2007) explained that the dynamic capabilities was formed in two main stages. These stages are managerial and organizational process performance measured in stage/performance yardstick. Helfat focused on the output of dynamic capabilities itself and less about the process of creating the dynamic capabilities in detail. Therefore, Helfat stressed that one important indicator for assessing the technical performance is measured fitness and evolutionary fitness. These aspects describe how well the dynamic capabilities of a company to be creative, expand, or modify its resources. The evolutionary fitness creation supporting factors consists of market demand, competition, and technical aspects (Figure 3).

In line with Helfat, Peteraf (2007) also believes that the process of dynamic capabilities better reflect the "investment processes" that its continuity will depend on the managerial and organizational processes. Finkelstain (2007) also corroborate what was Helfat stated by adding the importance of senior executive behavior. In other words, the process of dynamic capabilities will not run without the commitment of the senior executive in a company.

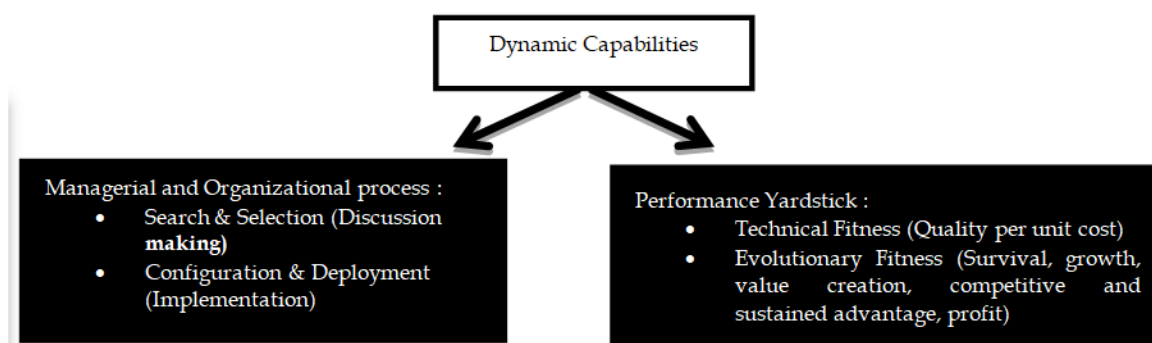


Figure 3 – DC: Process and Performance Yardstick (Source: Helfat, et.al, 2007)

Other researchers who discussed the creation of dynamic capabilities were McCarthy & Gordon (2010). They associate the process of creating dynamic capabilities with dynamic/speed control environment and management on contingent approach base (one approach to modern approach in organizational theory). Regardless, the control mechanism in various variants is able to take part in creating dynamic capabilities in many situations especially in high velocity because they wanted to prove that dynamic capability not only works at high-velocity conditions (environmental dynamics at high speed) but also can be used when an organization is at a low velocity (dynamic environments running at low speed). Although dynamic capabilities can be used in two conditions (low and high velocity), this model puts learning activities remains a key activity in integrating, coordinating, and reconfiguring resources in order to create dynamic capabilities. In turn it would create competencies that deliver a good performing company (see Figure 4).

*Criticizing Dynamic Capabilities Model.* Four models of the dynamic capabilities creation developed by fore-mentioned researchers above still leave some things that need to be discussed. The four issues are described as follows: (i). A discussion on organization/business environment that still uses the traditional paradigm within the system framework; (ii). The model is generalized. On the other hand, companies require dynamic positioning capabilities. Making it is a difficult aspect for the existing model's implementation (lii). The existence and clarity of feedback mechanisms within the framework of the system and (iv). Matters associated with learning has not been discussed in detail.

Among the four researchers above, only Teece (2007) and Mc Charty & Gordon (2010) pertaining to the business ecosystem dynamics. However, Teece merely focuses on the strength of the business ecosystem dynamics derived from the market and technological change. Four years later, Teece (2011) discussed the existence of the business ecosystem into something that is strategically important to consider when someone want to create dynamic capabilities. However, the topic has not been confirmed in a dynamic capabilities creation model. In fact, the business ecosystem strength is not only derived from two

components but can come from other components (Teece, 2011). In general, the dynamic capabilities creation process are still putting the traditional paradigm in discussing the system. It uses perspective which adopts reductionism. One proof of the reductionism dominance is the development of two environment dynamics polarization only in two patterns, which is the high velocity and low velocity on one of the models above (McCarthy & Gordon, 2010). A polarization emerges due to a mindset based on a structuralist determinism while understanding the environment.

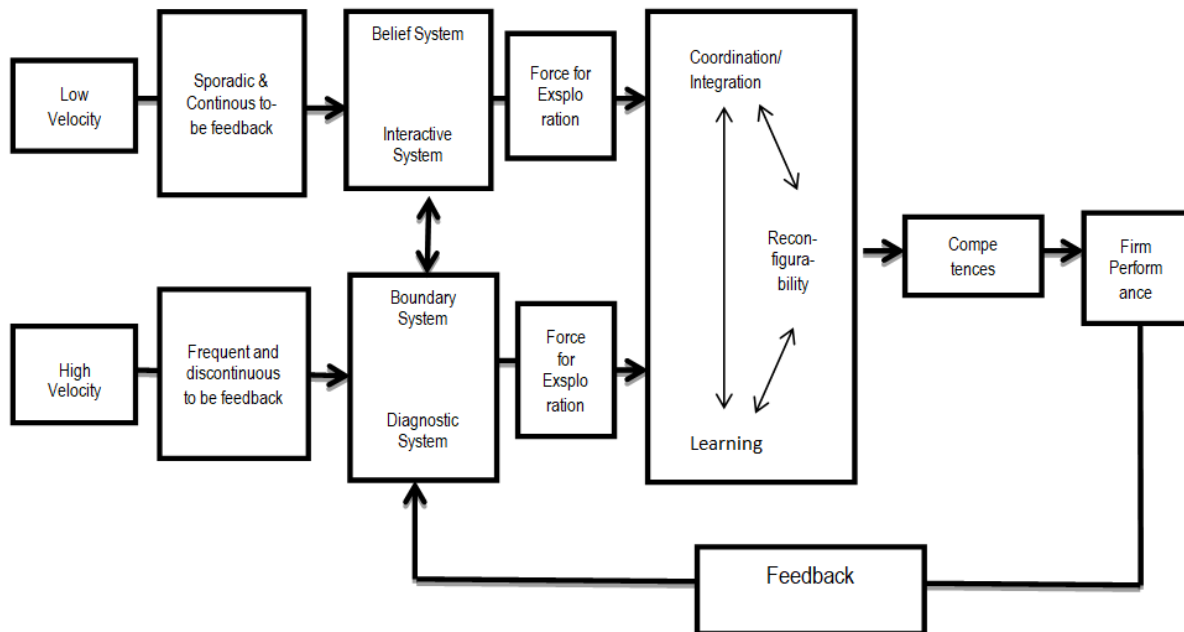


Figure 4 – Dynamic Capabilities Process (Source: McCarthy & Gordon, 2010)

A dynamic capabilities model creation discussed above is relatively therefore there will be many disadvantages when this model is implemented. Creating a general model of dynamic capabilities will obscure the position/unit analysis and the role of dynamic capabilities itself which is located in a firm position (Powell, et al, 2004; Madhani, 2010). On the one hand, any firm/organization possessing vision, mission, values, strategies and different stages of development, according firm characteristics and circumstances. Based on Madsen research (2010), the dynamic properties of very distinctive capabilities is in accordance with the objectives, situation, and characteristics of the organization. Therefore in creating dynamic capabilities requires the need for dynamic creation model in relatively diverse capabilities. This further reinforces their condition demands the creation of dynamic capabilities are based on a contingency approach.

Dynamic capabilities are part of strategic management which is part of a larger system. In this case is the organization. Therefore, dynamic capabilities is similar to basic idea of all-round system and concept which is not as a pile / whole but rather the overall adaptive/adaptive wholes are characterized by emergent properties. It is the capacity to achieve the overall goal, intercorrelations, monitoring and control (Sudarsono, 2012). As a part of the system, dynamic capabilities must have a feedback mechanism since the feedback is very fundamental. Without feedback, there is no system (O'Connor & Dermot, 1997). The importance of feedback as a consequence of an open system, which continuously receives information from the environment. This helps the system to adjust and provide an opportunity for the system to take corrective action to correct deviations from the specified direction (Robbins, 1990). Therefore, the feedback is needed in emergent properties. In this case is dynamic capabilities. Among the four models of the dynamic capabilities creation, only McCarthy & Gordon (2010), featured the feedback mechanism. Nevertheless, feedback type has not been discussed in detail.

Learning mechanism is a key activity in the creation of dynamic capabilities. (Lewin and Massini, 2004; Soo, et al, 2004; Gourlay, 2004; Haefliger & Krogh, 2004; Chen and Huang, 2012). However, among four researchers mentioned only Zollo & Winter (2002) and Mc Carthy & Gordon, (2010) mentioned learning as one of the key activities in the dynamic capabilities creation process. Nevertheless, it has not been discussed comprehensively. Regarding learning mechanism and knowledge creation as an integral part of learning mechanism itself. Understanding the dynamic capabilities of a knowledge-based perspective becomes important. The conclusion, in line with what was presented by Kianto & Ritala (2010), viewed from the perspective of the study of dynamic capabilities, knowledge can also be conceptualized as an effort to make organizational knowledge serving as something to enlarge, develop and update. Within this framework, knowledge is an important resource for the organization through learning mechanisms.

Furthermore, Kianto & Ritala (2010) stated that knowledge perspective in relation to the dynamic capabilities are able to bring the organization to the higher order capacity. Soo, et.al (2004) research result exhibited the ability of knowledge creation and transfer is the basis to innovate as an endeavor to achieve competitive advantage for the organization. There are three fundamental reasons why knowledge can be used as the basis for a company in the creation of dynamic capabilities. First, connectivity. It is intended that the process of knowledge takes place in the context of social relations and constellation. It would significantly affect the chance and potential for knowledge development (Cohen & Levinthal, 1990; Brown and Duguid, 1991; Nonaka & Takeuchi, 1995). Second, learning is an essential mechanism that makes existing organization capable to develop and update capabilities. Therefore, the learning culture can be defined as the capacity of organizations to work in developing a more flexible and adaptable form. It is one form of another dynamic capability (March 1991; Zollo & Winter, 2002; Ferdinand et al, 2004). Third, although knowledge cannot be fully in managed, the possibility of development and exploitation can be enhanced through the provision of a variety of facilities communication technology and various forms of information storage to support, enhance, and provide insight knowledge to the development of knowledge itself (Sher & Lee, 2004; Nielsen, 2006; Capeda & Vera, 2007).

## **CONCLUSION**

Existing model creation of dynamic capabilities needs some improvement. Convergence approach in developing certain existing models so far found four important issues. These were related to the understanding of business ecosystem, generalized model, the existence of a feedback mechanism and learning mechanism. The fourth case was discussed completely with its theoretical foundation. However it is still in theoretical form as discussed above. Therefore, an empirical study is required by making the process of creating dynamic capabilities as a research focus. Therefore so it will awaken a model of dynamic capabilities creation more than capable to capture the environment dynamics.

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