UNDERSTANDING DYNAMIC CAPABILITIES
BY TRANSFORMATION OF ORGANIZATIONAL SLACK

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ABSTRACT

This research proposes a new view on dynamic capabilities, which differs from prior studies which emphasized the types of capabilities. In this study, dynamic capabilities are viewed as a feedback process of how organizations can transform slack into particular innovations, which in turn can influence organizational performance. Organizational innovations in an intermediate role can mediate the relationship between organizational slack and performance. The transformation within the process may be moderated by core competency (internal factors) and environmental turbulence (external factors), sequentially. Simultaneously, it can also solve the problem of an unclear relationship between slack and performance through the understanding of dynamic capabilities in such a way.

INTRODUCTION

The more turbulent the environment confronted by organizations the more dynamically the capabilities will be viewed as a kind of critical resource base by strategic management. Though the concept of dynamic capabilities, it has been posited that an organization can display the performance impact of existing resources through specifically the processes to integrate, reconfigure, gain and release resources (Teece, Pisano, & Shuen, 1997). Many studies have different views of what dynamic capabilities are, such as differences in the scope of related diversification (Doving & Gooderham, 2008), resource management capability (Moliterno & Wiersema, 2007), victory over potential rigidities of organizational capability building (Schreyogg & Kliesch-Eberl, 2007), R&D and marketing resource deployments (Kor & Mahoney, 2005), and a set of routines guiding the evolution of a firm’s resource configuration (Zott, 2003). We can observe the function of dynamic capabilities from the various capabilities themselves or from their transformation process. Previous research has contributed the functional content of dynamic capabilities in comprehending organizational response on environmental turbulence, especially on diverse capabilities. This study will take the view of transformation process of organizational resources for dynamic capabilities.

There are particular resources to be changed or transformed within an organization. Such kinds of resources may not be strategic resources, which are used in current operations and which are valuable to the competition before transformation. Organizational slack may be an important resource rather than a strategic resource which fits criteria such as value, rarity, imperfection imitability and being without strategically equivalent substitutes (Barney, 1991). To decompose the dynamic capabilities from the transformation of organizational slack provides us with a better theoretical perspective. Prior research in dynamic capabilities has been based upon an assumption that firms’ strong capabilities are beneficial in that they quickly respond to environmental turbulence (Eisenhardt & Martin, 2000; Song, Droge, Hanvanich, & Calantone, 2005). However, in this transformation process, what happens in organizations and what changes occur within organizations? Dynamic capabilities may be a function that it changes things which are not strategic resources into strategic resources, and then affects organizational
performance under particular environmental conditions. If we can learn more about these processes, we can understand more about dynamic capabilities.

As with other strategic capabilities such as learning capabilities, flexibility and networking, dynamic capabilities also have the nature of being hard to identify. Past research has put too much emphasis on the concept of capabilities themselves in that managers find it hard to work with them in reality. These capabilities have the nature of being hard to discern. Unlike explicit resources, the characteristics of dynamic capabilities are not easily discernible from a quick physical inspection of managers in the way that organizational slack resource characteristics often are. Furthermore, either raising or promoting the capabilities requires spending more time than reallocation in a particular period for organizational slack. From the organizational slack transformation, we can apparently map out the energy of dynamic capabilities. In addition, all of the above studies presume the same functions which change an existent position or transform current resources and reveal the same factors which are internal capability and external environment. The research gap this study filled is that the transformation process of visible resources can increase understanding of dynamic capabilities more clearly.

Responding to variable competitive conditions, an organization would have a chance to improve its performance if it did something different to what the others did. Organizational slack provides such an opportunity for innovation to change (Voss, Sirsishmukh, & Voss, 2008). Organizational innovations play the pivotal role between organizational slack and performance. Innovations have changed and improved existing products, markets, finance and operational rules. Slack facilitates firstly innovations which then improve sequential organizational performance. Whether an organization is able to make slack into innovation depends on its internal capabilities. Internal capabilities include organizational learning, re-configurability and coordination capability, which belong to a kind of dynamic capability within organizations. It depends, then, on external environmental turbulence whether innovations can increase organizational performance.

From the slack transformation process, we decompose dynamic capabilities into a two-stage process, slack-innovation and innovation-performance. In the first stage, interaction between slack and core competency affects innovation. In the second stage, interaction between innovation and environmental turbulence affects performance. Owing to these critical components, we construct their relationship and then let us clearly make sense of the function of dynamic capabilities.

**RECYCLING ORGANIZATIONAL SLACK**

One of the explicit operations for dynamic capabilities is the organizational process or routine by which the firm configures and reconfigures its portfolio of strategically and non-strategically important resources (Eisenhardt & Martin, 2000; Helfat, 1997; Moliterno & Wiersema, 2007; Teece et al., 1997; Winter, 2003). For these critical resources, slack is one particular resource that can be reallocated, which is consistent with the direction of firm’s strategies (Barney, 1991; Dierickx & Cool, 1989; Mishina, Pollock, & Porac, 2004). Slack has been defined as the pool of resources within organizations that is in excess of the minimum necessary to produce a given level of organizational output (Nohria & Gulati, 1996). Organizational slack may be produced from managerial cognition (Danneels, 2008) and innovation may be one kind of outcome of strategic action response in the environmental context. If we could connect the created artificial boundaries, we would not limit our ability to develop holistic explanations for strategic action (Nadkarni & Barr, 2008).

Our research builds on prior research, investigating various aspects of dynamic capabilities to articulate a more comprehensive understanding of the relationship between slack and performance. If dynamic
capabilities could be broken down into several stages, the process, especially, would make the function more clarified. Teece (2007) suggested that dynamic capabilities can be disaggregated into the capability (1) to sense and shape opportunities and threats, (2) to seize opportunities, and (3) to maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise’s intangible and tangible assets. Similarly, Schreyogg and Kliesch-Eberl (2007) note that capability monitoring exercises at an observational level for capability practice on an operational level interact with both the internal and external environment. Basically, if organizations can sense and monitor the internal and external change, they will have certain expectations and preparations for the next period of environmental turbulence.

Organizational slack can be produced by the results of pre-period strategic decisions, real conditions of which may fit managers’ expectations or not (Mishina et al., 2004). In this sense, organizational slack has neutral characteristics and whether it is good for organizations or not depends on core competency. If organizations possess sufficient and necessary capabilities, they can transform slack into innovations and fit their environmental needs. However, it is redundant for organizations that do not have enough capabilities to transform slack into innovations or judge their environmental needs. The more environmental turbulence there is, the harder it is for the managers to exactly predict how to judge their needs.

The point to observe is that organizational slack can stimulate the production of innovations, which in turn can affect organizational performance. The performance feeds back into intended slack. Even though there is unintended slack when actual variables are out of expectation, the firms under pressure still need to transform all of that into organizational innovations if they own superior core competency.

The source of organizational slack
Resource allocation and reallocation make organizations flexible in response to environmental impacts (Levinthal & Posen, 2007; Miller, Lant, Milliken, & Korn, 1996). Decision makers in organizations have expectations for the next period of environmental turbulence before reassigning critical resources. In general, the unplanned or planned results of the decisions would become one of three conditions: over, under, and fit expectations. But according to Voss, Sirdeshmukh, and Voss (2008), there are four types of slack resources: financial, operational, human resource and customer relational slack. We connect their relationship. Firstly, preparation over expectation, where there is the formation of operational slack and human resource slack. Secondly, preparation matches expectation, where there is no accumulation of operational and human resource slack but one of financial slack. Thirdly, preparation under expectation, where there is no accumulation of operational slack but a customer relational slack. Finally, there is an additional case of planned results, where organizations purposely retain some slack with which prepare to take particular strategic activities that sustain the competitive advantage.

The effects of organizational slack
If organizational slack is idle in a particular firm, this shows that the firm does not rapidly have the capability in responding to environmental shifts (Cheng & Kesner, 1997) or strategic intent (Julian & Ofori-Dankwa, 2008) and will subsequently fail in its performance. Strategic mangers must take action if slack is produced actively or passively. Organizational slack can produce either planned or unplanned results. So, slack is a dynamic quantity that represents the difference between the resources currently possessed by the firm and the resource demands of their current business (Mishina et al., 2004). Organizational slack may become a kind of pressure to change whether within or beyond organizations. The more dynamic capabilities organizations have, the more organizations can transform slack into innovations. Organizational innovations are defined as new or significantly amended forms of
organization, business structures or practices, aimed at step changes in internal efficiency of effectiveness or in approaching markets and customers (Battisti & Stoneman, 2009).

In sum, the components of this theory of dynamic capabilities are organizational slack, innovations, performance, core competency, and environmental turbulence. Each of these leads to propositions on the feedback process of dynamic capabilities, which are developed next.

**INTERMEDIATE ROLE OF INNOVATIONS**

In the field of strategy management, the relationship between organizational slack and performance is always an unsolved problem (Daniel, Lohrke, Fornaciari, & Turner, 2004; George, 2005; Tan & Peng, 2003). There are some undiscovered processes and means within the relationship. From the perspective of dynamic capabilities, organizations have the ability to transform slack into valuable innovations in response to environmental turbulence under the expectations of the environment. If the managers’ expectations match the reality of the environment’s turbulence, innovations have values for organizations and will increase organizational performance. Organizational innovation is defined as adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization (Damanpour, 1991). In this study, we assume the definition of outcomes for innovations.

**Slack and Innovations**

Though organizational slack may come from intended or unintended results, the firm always needs to find a new way that makes beneficial changes or value-added outcomes. While active innovation may search for better opportunities for profits, passive innovation may bring pressure to improve their management. Change for organizations is often to make innovations (Cheng & Kesner, 1997). Innovations refer to risk taking and doing something new within organizations, such as entering a new market, promoting the quality of employees, improving production processes, and satisfying particular segmental customers.

Organizations would be taking a risk to innovate either by a problem-driven search or a slack-driven search according to management literature (Baum, Rowley, Shipilov, & Chuang, 2005; Cyert & March, 1963; Greve, 2003). Even though initial ideas are driven by problem-solving, organizations may need to create slack in order to innovate so that firms may reallocate their resources. That is, in the case of a problem-driven search, firms will firstly create slack for innovations. If there is no slack, there will be no room to innovate. Indeed, Rosner (1968) concluded that the existence of slack means that the organization can afford (1) to purchase costly innovations, (2) to absorb failures, (3) to bear the costs of instituting the innovation and (4) to explore new ideas in advance of an actual need. We expect that slack will increase the potential for innovations:

*Proposition 1: Organizational slack will increase innovations in organizations.*

**Innovations and performance**

Organizational managers could have some expectations about their innovations before making them. In general, because the environmental turbulence is more rapid than before, the firm must be more flexible in response (Lawless & Anderson, 1996). That organizational innovation comes from pre-period preparations is the flexibility to change the firms themselves in response to the environmental turbulence (Voss et al., 2008). Organizational innovations may represent adaptability to change. The more
innovations firms make, the more organizational performance firms gain. This gives rise to a second proposition:

Proposition 2: Organizational innovations will increase performance.

TAKE ACTION FOR SLACK

Organizational slack has to pass an internal process and an external process and then affects performance. Someone executing the process of dynamic capabilities needs to consider existing internal and external conditions. Relatively unchangeable components in the process are core competency for internal factors and environmental turbulence for external factors. Organizational slack could be a function of performance, which needs to pass two phases. In the first phase, slack could be successfully transformed into innovation through internal conditions (i.e. core competency). In the second phase, organizational slack could promote performance through external conditions (i.e. environmental turbulence). The organizational environment will affect both the use of slack at this time and the final utility of slack the next time (Voss et al., 2008).

Internal Conditions

Organizations often fail to realize the potential benefits of innovations. One of the important reasons is lag. Organizational lag refers to the discrepancy in the rate at which new technical and administrative ideas are implemented (Damanpour & Evan, 1984). A balanced rate of adoption between different innovations is more effective in helping organizations to maintain or improve their level of performance than either particular innovation alone; for example, administrative innovations could frequently lag behind technical innovations in an organization and that leads to low performance (Daft, 1978; Damanpour & Evan, 1984). Organizational lag implies that firms cannot follow up on the environmental dynamics and not possess enough capability to reallocate organizational slack. There may also be a kind of signal for organizational inertia so that firms cannot adjust their strategic directions. In other cases, there may be a preparation for new strategic activities that firms intend to produce. Whether the change may be an opportunity or a threat for the organization depends on organizational capabilities taking adequate strategic directions for innovations. If the firms have superior capabilities, especially core competency, the slack activity that will be rapidly transformed into innovations would be more beneficial. This leads to another proposition:

Proposition 3: The effects of organizational slack on innovations will be moderated by core competency; organizational slack is more likely to increase innovations when core competency is high than when it is low.

External Conditions

Another reason organizations often fail to realize the benefit of innovations is that there is confusion between goals and reality; in other words whether the direction of organizational goals is really similar to the real environment. Though the firms’ managers may realize that the environment is turbulent, they will not be able to predict when a turbulent situation will happen, nor exactly know its magnitude, direction, and category. There are opportunities for organizational innovations if the environment has changed and has yet to match others expectations (Pierce, 2009).

Third, responsive fitness, which refers to firms’ responsiveness to the environmental turbulence, is neither over or underestimated. There are threats for organizational innovations if the environment has too much turbulence as compared to what they anticipated, so that the innovations will be less useful
The innovations fitting anticipated change and preparations will increase organizational performance, but innovations that do not fit change will be redundant for organizations. This leads to a fourth proposition:

*Proposition 4: The effects of organizational innovations on performance will be moderated by environmental turbulence; organizational innovations are more likely to increase performance when environmental turbulence is low than when it is high.*

Based upon the above evidence from the literature review, we propose a feedback process model of the three steps of dynamic capabilities: organizational slack, organizational innovations, and performance, as diagrammed in Figure 1.

![Figure 1. The feedback process model of dynamic capabilities from organizational slack transformation](image)

**CONCLUSION**

Regarding dynamic capabilities, researchers need to consider internal and external factors in organizations. The mechanism of dynamic capabilities not only includes capability itself, but also the process of resource transformation, such as slack resources and innovations.

There is now a better way to understand dynamic capabilities from resource transformation. We view dynamic capabilities as a feedback process that functions to transform slack into innovations and which then affects performance. Based on the strategic management literature, whether inside out or outside in strategic views (Hoskisson, Hitt, Wan, & Yiu, 1999), there is a loop cycle between slack, innovations and performance. This study begins with organizational slack and explores the process to performance.

There may not be a so called “paradox of organizational capabilities (Schreyogg & Kliesch-Eberl, 2007),” but rather a problem of whether the reality fits the managers’ expectations or not. Organizations could reallocate slack at this time and repeatedly and continually adjust their innovations at a later time in response to the needs of the environment.

**REFERENCES**

References available upon request from the first author.