



The driving drivers of dynamic competitive capabilities: a new perspective on competition

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Abstract

Purpose – The purpose of this paper is to identify the critical driving drivers of dynamic competitive capability (DCC) from the perspective of dynamic learning mechanisms (DLM), a viewpoint that has been neglected by prior studies. This paper's implicate previous research utilizing the resource-based view (RBV) as tautological animadversion, and provide a clear theoretical model for developing DCC, especially as it relates to alliance organizations.

Design/methodology/approach – The pertinent literature is reviewed and five case studies were conducted on firms in Taiwan to identify and verify what drivers of DLM influence the evolution of DCC.

Findings – The paper finds that external linkages, previous experience, repeated practice, experience codification, and the integration power of managers play key roles in developing DCC, while ambiguity has a negative impact.

Research limitations/implications – Strategic utilization of these DLM drivers enhances the DCC of alliance organizations. The results provide a reliable basis for developing the DCC of enterprises and improving the success of business activities.

Originality/value – This research closes the gap of previous research on developing DCC via DLM, and defines a clear theoretical model. Thus, this work provides a framework for firms to maintain dynamic, long-term competitive advantages in varied and fast-paced environments.

Keywords Competitive strategy, Taiwan, Learning processes, Strategic alliances, Resource efficiency

Paper type Research paper

Introduction

Changes in technological resources, business modes, and strategy management continually raise new challenges to businesses in terms of competition. In particular, enterprises may undermine the market share and unique positions of their competition by forming alliances or via merger and acquisition (M&A) and to rapidly capture a competitive advantage and business benefits that increase their influence on global business activities. However, according to Lindsay *et al.* (2000) points out M&A in European countries typically create entities whose market share is less than 25 per cent. Similarly, Plagnet (2005) found that the competitiveness of European enterprises following alliance or acquisition was typically less than 30 per cent. A fundamental problem of strategic management is the creation of competitive advantage, namely, how firms construct a unique competitive position. Porter (1979) and Henderson and Cockburn (1994) emphasized firms' competitive advantages based primarily on their positions within their respective industries. If the contentions of Porter (1979) and Henderson and Cockburn (1994) on competition are correct, then how to explain the competitiveness of European enterprises has not been moving up through alliances or M&A.



In fact, these past contentions on elevating competitiveness through alliance or M&A also are an embarrassing explanation to European enterprises' behavior and current European business activities.

Hunt (2007) advocated resource advantage as the basis for the dynamic-competition model (i.e. the resource-based view theory: RBV), but they simply provided a preliminary explanation for competitive heterogeneity based mainly on the assumption that firms possess unique resources. However, unique resources always derive from specific capabilities or properties, including know-how, reputation, business secrets, learning, and certain specialized production facilities. These specific capabilities and properties cannot always be purchased or acquired via transactions. Even if they could be, they generally have a relatively short useful lifetime, and thus any specific capability gained through the purchase would quickly be lost (Barney, 1986). Thus, specific capabilities must be produced by a distinctive organizational routine (Teece, 1976; Teece, 1980; Dierickx and Cool, 1989). This may explain why so many European enterprises have not obtained specific capabilities or a unique competitive advantage via international alliances or acquisitions; consequently, they cannot respond to dynamic business competition and establish long-term competence.

Specific capabilities may be determined by organizational routines involving isolated mechanisms linked to learning background (Penrose, 1959; Teece, 1984; Wernerfelt, 1984). Thus, the organizational learning mechanism of a firm may be a key to its ability to develop specific capabilities and create real advantages that cannot be duplicated by competitors. Organizational activity, especially as it relates to learning mechanism, may be a primary route through which a firm develops DCC (Argote, 1999). Indeed, Teece, Pisano *et al.* (1997) reported that DCC must be developed based on the process of organizational learning. Similarly, Eisenhardt and Martin (2000) argued that DCC development via an organizational learning mechanism may renew organizational resources and evolve into unique advantages and become a type of long-term competence.

Recent research on the evolution of DCC also provides evidence of the intrinsically importance of DLM (Zollo and Winter, 2002; Winter, 2003). However, few studies (Williamson, 1999; Priem and Butler, 2000) have attempted to explain how to develop DCC via DLM, and no studies to date have provided a clear theoretical model in which to do so. Therefore, we reviewed the literature and performed case studies to identify and verify the major driving drivers of DLM that influence the evolution of DCC. We followed the approach of Nelson and Winter (1982) and defined a DLM as a set of operations and routines that guiding an enterprise can keep on a renewal resource and promote ability growth. We defined DLM drivers following Zollo and Winter (2002), based on the direction of experience accumulation, knowledge articulation, and knowledge codification.

Dynamic capabilities are based on distinctive routines and specific processes

Firms face a changing industrial environment, characterized by unpredictability and strong competition, which the RBV argument regarding distinctive capabilities cannot reasonably explain. Barney (1992), Lado and Wilson (1994), Teece, Pisano *et al.* (1997), and Ljungquist (2008) approve the importance of organizational dynamic capabilities, which recently has been stressed by RBV theories. Organizational dynamic

capabilities are an intrinsic evolutionary process that can help facilitate problem solving, improve decision making, stimulate creative ideas, and help members effectively implement organizational objectives. In particular, organizational dynamic capabilities such as implicit knowledge articulation and the accumulation of experience must evolve by distinctive routines or specific processes. Thus, organizational dynamic capability development has the potential to be unique.

The environments of international businesses and the structures of industries are changing very rapidly, and previous research on organizational capability has been too general, calling for dynamic capabilities to handle all dynamic features of a firm's competition. DCC provides an important interface for the evolution, creation, and recombination of resources, and may help renew organizational capabilities and improve competitive strength (Henderson and Cockburn, 1994; Teece, Pisano *et al.*, 1997). DCC includes organizational systems involving the specific processes of integrating, reconfiguring, gaining, and releasing resources (Kogut and Zander, 1992; Eisenhardt and Martin, 2000), and may help lead to new resource configurations (Nelson and Winter, 1982; Kogut and Zander, 1992; Eisenhardt and Martin, 2000). DCC exists in special operating routines and arises from a learning that such learning advantages generally offer the greatest sustainable value (Pralhad and Hamel, 1990; Senge, 1990; Clark and Fujimoto, 1991; Stalk, Evans *et al.*, 1992; Williamson, 1999; Priem and Butler, 2000; Zollo and Winter, 2002). Nelson and Winter (1982) argued that DCC should always be refined in a notion of organizational distinctive routines. Prahalad and Hamel (1990) and Collis and Montgomery (1995, 1998) proposed distinctive routines and specific processes that frequently serve as the basis of unique value-creating systems, which adopt distinct methods to address specific markets and customers. Therefore, in our assessment of DCC, we integrated important arguments of previous research and defined DCC is a nature of embedding by distinctive routines and specific processes that exert key influences on a firm's success.

DCC is a dynamic learning mechanism

DCC derives from a firm's routines, and involves peculiar and idiosyncratic processes of an organizational system that emerge from learning (Nelson and Winter, 1982; Teece, Pisano *et al.*, 1997; Zollo and Winter, 1999). Argote (1999) and Eisenhardt and Martin (2000) argued that DCC development could more accurately be described in terms of learning mechanisms. Thus, we refined the DCC definitions of previous studies, and defined DCC as a set of stable patterns and activities based on an organizational routine and implemented via learning.

Organizational learning is a process of repetition and experimentation that enables tasks to be performed faster and more effectively, which helps reach strategic opportunities (Teece, Pisano *et al.*, 1997). From a strategic perspective, DCC can be viewed as the exclusive property of a firm, because it is a fundamental and isolated mechanism (Penrose, 1959; Teece, 1984; Wernerfelt, 1984). A DLM is essential to the evolution of a firm's DCC, and can impact beliefs and actions and strengthen innovative thinking and capability exploitation, helping organizations obtain more growth potential (Capron, Dussauge *et al.*, 1998; Zollo and Singh, 1998). An organizational DLM thus dictates how a firm nurtures DCC development and renewal.

A DLM is therefore defined explicitly as a key dynamic competitive condition, and a significant determinant of altering resources for strategic value (Williamson, 1999;

Priem and Butler, 2000). An effective DLM merges dynamic knowledge resources to produce a dynamic advantage, particularly when knowledge resources are the core of firm competitiveness. Winter (2003) indicated that the establishment of a DLM can assist in knowledge acquisition and the creation of competitive capability. Thus, an organization's DLM is an important foundation for DCC development.

Alliances enhance the evolution of DCC

When firms face pressure from international competition if their internal organization lacks competitive resources, they usually form strategic alliances to quickly gain competitive resources and capture business opportunities. Itami and Roehl (1987) and Shuen (1994) believe that if firms lack resources to produce economic profits, they can obtain these profitable resources via alliances or acquisition, and eventually create a competitive advantage. From January to December, 2007, a record of more than \$1.2 trillion has been spent on takeovers in Europe, compared to \$750 billion in a comparable period last year. Many European companies are utilizing alliance or acquisition strategies to reduce dynamic uncertainty and enhance their international competitiveness. For example, BT Group Plc, the largest telecommunications company in the UK, bought Infonet Services Corp., an IT and telecommunications services firm, for £519 million. BT Group came to an agreement with shareholders who own 97 per cent of Infonet Services because it aimed to become one of the largest providers of voice and data networking services to multinational businesses in the world. Similarly, Tesco, a supermarket chain based in the UK, is launching a music download service that will be run by Cable & Wireless Plc, a UK-based telecommunications firm, and target both the UK and Ireland. In this way, Tesco plans to increase its market power in the UK. As a final example, France-based Snecma, a state-controlled aircraft engine maker, has merged with Sagem, a French telecommunications equipment provider. Snecma hopes that the merger will strengthen international competitiveness and decrease market uncertainty.

Alliances and acquisitions continue to occur all over the world. However, do such strategies really create long-term competitiveness in a dynamic and fast-paced competitive market? This seems very doubtful. Therefore, we suggest that the DCC of alliance organizations is a key factor for success. That is, how alliance organizations derive the DLM drivers and to improve DCC by renewing development is critical to alliance success.

DCC may also include specific strategic management processes that can be acquired by alliances to produce new competences (Eisenhardt and Martin, 2000). In addition, DCC can derive from alliances that contribute new and useful resources to a firm's organization (Powell, Koput *et al.*, 1996; Lane and Lubatkin, 1998; Ranft and Zeithaml, 1998; Zollo and Singh, 1998; Gulati, 1999). Powell, Koput *et al.* (1996) emphasized that a firm's DCC may derive from the process of forming an alliance particularly when the external enterprise possesses knowledge resources, and that such alliances may improve that firm's ability to renew organizational capabilities. Therefore, we can conclude that alliances are an extremely useful strategy for increasing a firm's unique resources and rapidly driving the development of DCC thereby improving competitiveness in the marketplace.

DCC appears to take the form of a life cycle consisting of three stages, namely, its creation, development, and maturity. However, not all capabilities will reach maturity

but may instead evolve, due to external events, into a new and effective dynamic life cycle, thus enabling a sustained advantage. Strategic alliances appear to be such an external event; they guide new resources into an organization's internal operations and produce new routines, which then evolve into new DCC processes. Helfat and Peteraf (2003) considered strategic alliances selection events that may provide new opportunities and help a firm grow. Henderson and Cockburn (1994) and Teece, Pisano *et al.* (1997) suggested that strategic alliances can drive capability evolution, innovation, and resource recombination to develop new advantages. Furthermore, the alliance process includes adapting to and changing certain routines and processes, which typically leads to better integration of valid resources to drive the development of DCC, thereby creating more strategic value (Kogut and Zander, 1992; Eisenhardt and Martin, 2000; Zollo and Winter, 2002). Thus, strategic alliances provide a rapid way to further organizational capabilities, obtain new opportunities, and enhance the development of DCC (Figure 1).

Learning intent determines alliance learning

Nelson and Winter (1982) noted that individuals can be trained by organizational routines, and individual intelligence can be applied to resolve organizational problems. However, learning intent is an initial driving factor that helps trigger and guide organizational learning. Therefore, shaping learning intent can translate into real and useful deployment of resources and compensate for organizational deficiencies. Moreover, guiding routines and processes by learning intent may help deliver and disseminate specific skills and knowledge throughout organizational systems. Therefore, learning intent is an important driving force of routine development and value creation.

Beyerlein, McGee *et al.* (2003) argued that learning intent leads to a positive outcome during the collaboration process. It promotes the establishment of long-term organizational advantages and helps develop a firm's DCC (Kim, 1998). However, learning intent not only drives knowledge accumulation but also provides a foundation for firms to utilize and exploit their capabilities (Minbaeva, Pedersen *et al.*, 2003), and may aid knowledge absorption and transfer. If personnel lack learning intent, organizational capabilities cannot be exploited or developed fully, may gradually

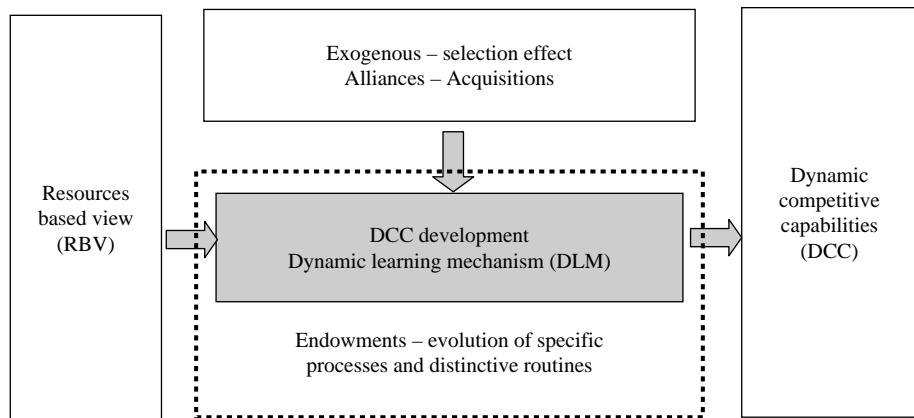


Figure 1.
Evolutionary map
of dynamic competitive
capabilities

decrease, and eventually erode competitive competency, making it impossible to reach organizational goals. Senge (1990) argued that learning intent not only improves individuals but also strengthens organizational innovation. Thus, learning intent is a key component driving organizational learning mechanisms.

Strategic alliances are typically learning-oriented collaborative relationships, and both collaborative partners generally have explicit learning intent, such as learning about successful experiences, specific expertise, and how to operate certain equipment. Hamel (1990) identified some important constructs of organizational learning from alliance partners, including an incentive system, learning intent, attitude toward learning, and appropriate resource deployment, among which learning intent is the most important and exerts the most decisive influence on the acquisition of specific competences by alliance partners (Hamel, Doz *et al.*, 1989; Hamel, 1990; Teramoto, Richter *et al.*, 1993). Therefore, learning intent is very important to an alliance, because both collaborative partners hope to enhance their competitiveness and compensate for their individual weaknesses by forming the alliance. Kelly (1974) and Filley, House *et al.* (1976) also viewed learning intent as the most significant determinant of organizational learning.

Members of an alliance must accurately describe its learning intent to its collaborative partner to foster mutual understanding (Pucik, 1988; Hamel, 1991), and help optimize decision making, problem solving, and future planning. Thus, learning intent also strengthens and plays a key role in DCC development of alliances. Thus, learning intent is a primary and fundamental factor of DLM, as it can convert capabilities into useful actions and increase chances of success. This study thus identifies learning intent as a primary antecedent factor to the improvement of DCC:

P1. Learning intent positively influences DLM drivers.

Relationship between DLM drivers and DCC of an alliance

Previous studies based on RBV did not clearly define how firms should maintain dynamic and long-term competitive capabilities in rapidly changing environments, and thus RBV cannot be used to address all issues related to competitive advantages and disadvantages. We believe that good DLM drivers guide the evolution of DCC effectively, providing the most likely explanation of why firms possess unique capabilities and advantages, and the ability to dynamically renew capabilities to create value. Because the organization of an alliance is highly dynamic and complex, a better understanding of what drivers help promote dynamic capabilities is required. Therefore, we examined the factors driving DLM. We constructed a theoretical model including the fundamental steps necessary to move from learning intent to learning drivers, and from learning drivers to DCC.

The power of integration in the strategic redeployment of routines significantly impacts the development of DCC (Capron, Dussauge *et al.*, 1998; Graebner, 1999; Graebner, 2000). DCC always derives from the organizational routines and strategic routines by which managers integrate and recombine their knowledge resources to generate new valuable competences (Pisano, 1994; Grant, 1996). Particularly in the collaborative processes of alliances, managers must deal with complicated organizational problems; thus, manager integration power is a key issue driving organizational learning. If managers possess very strong integration power, they can better resolve numerous internal and external problems such as determining whether

partners share a valuable combination of experience and resources, consider what efficiencies enable organizations to accumulate experience and knowledge, and implement organizational activities to rapidly improve competitive capability. Thus, managers with strong integration power can improve the DCC development of alliances. In contrast, managers who lack sufficient power to integrate knowledge resources and experiences, may negatively impact the development of DCC, leading to a loss of confidence among allies and undermining the usefulness of the alliance. Eisenhardt and Martin (2000) posited that if managers have integration power, they will easily absorb, consolidate, and expand organizational skills, helping the organization enter the stage of renewed capability development and thus promote DCC. Notably, Clark and Fujimoto (1991) and Ancona and Caldwell (1992) recognized that managers with very strong integration power foster operational advantages and capability development:

P1a. When a DLM drives manager integration power, there will be a stronger positive impact on the DCC of alliances.

To develop a new capability, it is necessary to reform new operating routines by performing steps of integration, reconfiguration, and establishment, a type of stimulation and knock process involving numerous external links. Henderson and Cockburn (1994) developed an external linkage process as an effective method for creating knowledge and promoting competitiveness. Ancona and Caldwell (1992) demonstrated that external linkages are very important drivers of alliance cooperation and are advantageous to DCC creation. Alliance members use external linkages to enhance the exchange of messages and quickly gain knowledge and special experience. Powell, Koput *et al.* (1996) confirmed that external linkages play a significant role in alliance relationships by improving knowledge accumulation; if a firm increases its competitive advantages via alliance; its success depends primarily on the level of useful knowledge possessed by the external organization. Therefore, external linkages help promote DCC:

P2a. When a DLM drives external linkages, there will be a stronger positive impact on the DCC of alliances.

Experience helps transfer previously learned routines to a new orientation. Experience not only helps organizations quickly familiarize themselves with their operating environment but also helps them overcome difficult environments. Experience can increase decision accuracy and efficiency, as well as latently contribute to DCC. Managers who have previous experience with alliance collaboration will have superior skills for reinforcing technical abilities and organizational routines, and incorporating useful knowledge into an organizational system. Haleblian and Finkelstein (1999) found that managers with extensive experience were superior to those with moderate experience, as they could discern the similarities and differences between current and previous routines, as well as acquire and operate valuable resources more easily, thereby promoting capability renewal and growth. Thus, previous experience can facilitate organizational learning, help identify learning obstacles that could influence alliance members, and provide more efficient associations among members. Argote (1999) confirmed the significant effect of experience, based on learning curves in the manufacturing industry. Eisenhardt and Martin (2000) also confirmed

that, within alliances, previous experience with other team members was a key influence on the process of product development that promoted knowledge accumulation and capability development. Alliances typically create substantial coordination challenges, and thus when a learning mechanism incorporates previous experience, not only can numerous obstacles be overcome, but the sharing of knowledge can be accelerated and potential friction among members can be avoided. That is, previous experience positively promotes the DCC of alliances:

P3a. When a DLM drives previous experience, there will be a stronger positive impact on the DCC of alliances.

Practice can help alliance members better understand organizational operating processes and more efficiently develop operating patterns; thus, practice can help accumulate experience and articulate knowledge, while also enhancing the effectiveness of routines. In dynamic organizational learning, mistakes and failures are unavoidable, particularly among alliance members coming from different fields of professional knowledge but having to cooperate within a single organizational structure to execute projects and missions together. Organizations that do not allow repeated practice have difficulty learning from conflicts and failures, preventing the evolution of DCC. Repeated practice can help resource integration and knowledge accumulation, making organizational operations smoother. Eisenhardt and Martin (2000) argued that repeated practice was an important learning mechanism that was advantageous to capability development. In addition, repeated practice may help organizational members develop better operating methods, and assist in the development of the learning curve (Argote 1999). Zollo and Singh (1998) confirmed that repeated practice helps accumulate implicit and explicit knowledge, boosting the performance of alliances, particularly in a homogeneous alliance in which repeated practice promotes dynamic capabilities. Thus, repeated practice is clearly a key driver of DCC:

P4a. When a DLM drives repeated practice, there will be a stronger positive impact on the DCC of alliances.

In formal organizational operations, the codification of experience may facilitate routine articulation and enhance the establishment of dynamic capabilities (Zander and Kogut, 1995a; Zollo and Kogut, 1995b; Argote, 1999). Experience codification may also enhance the dissemination of knowledge, as organization members help other members learn quickly from prior experience and reduce mistakes (Winter, 1987; Nonaka, 1994). Experience codification thus helps resolve rapid changes in competition and the environment, and promotes DCC:

P5a. When a DLM drives codification of experience, there will be a stronger positive impact on the DCC of alliances.

The characteristics of dynamic capabilities are embedded in the specific process and in routines that can be produced via system operation (Nelson and Winter, 1982; Barney, 1986). Therefore, actual experience accumulation and knowledge articulation always reflects a clear influence of these embedded characteristics, which is particularly obvious regarding the learning of tacit knowledge and tacit experience. Learning always faces immobile barriers, and thus it is necessary to consider its ambiguity

during implementation (Kogut and Zander, 1992; Hedlund and Zander, 1993). Lippman and Rummelt (1982) also argued that ambiguity impacts organizational learning and influences the achievement of organizational targets. Crossan and Inkpen (1995) proposed that successful learning in strategic alliances requires overcoming the impact of ambiguity on partner collaboration. Ambiguity thus creates an obstacle to DCC:

P6a. The ambiguity of a DLM exerts a negative impact on the DCC of alliances.

Case study research methods

We explored the DLM drivers of alliances via five case studies. We interviewed a high-level manager of five firms in Taiwan (Table I). All of the participants had been with their firms for eight years or more, and most managers had rich and successful management experience in alliance organizations. Thus, the participants not only had an in-depth understanding of alliance operations and management routines but were also probably the most qualified to provide the information for this study. The participants were asked to answer and discuss questions involving organizational operations and strategic management activities relating to their routines, especially as they relate to the DLM drivers of the alliance. The interview questions were as follows:

- Q1. Do you think that learning intent plays a key role in alliances? Why?
- Q2. Do you think formal learning mechanisms exhibit embedded characteristics? Why?
- Q3. What are the important drivers of a dynamic learning system in an alliance?
- Q4. Do you think that ambiguity impacts organizational learning implementation and competitive capability?
- Q5. What are the important drivers of DCC development?

All interviews were recorded for further analysis and interpretation. During the qualitative research process, data collection and analyses were processed simultaneously, and the results of data analysis led to further theoretical deduction. We used the results to identify the critical dimensions for DLM drivers and refine the implications of our model.

The results of the five case studies supported our theoretical propositions. The theoretical model is shown in Figure 2.

No.	Name	Gender	Age	Appointment	Alliance organization management experience (years)
1	Ricky Chiu	M	40	Assistant manager	8
2	Hihwa Ho	M	47	Marketing manager	10
3	Lisa Chen	F	52	Manager	15
4	Tony Hsu	M	44	General manager	9
5	Kevin Wang	M	48	General manager	10

Table I.
Summary of participants' information

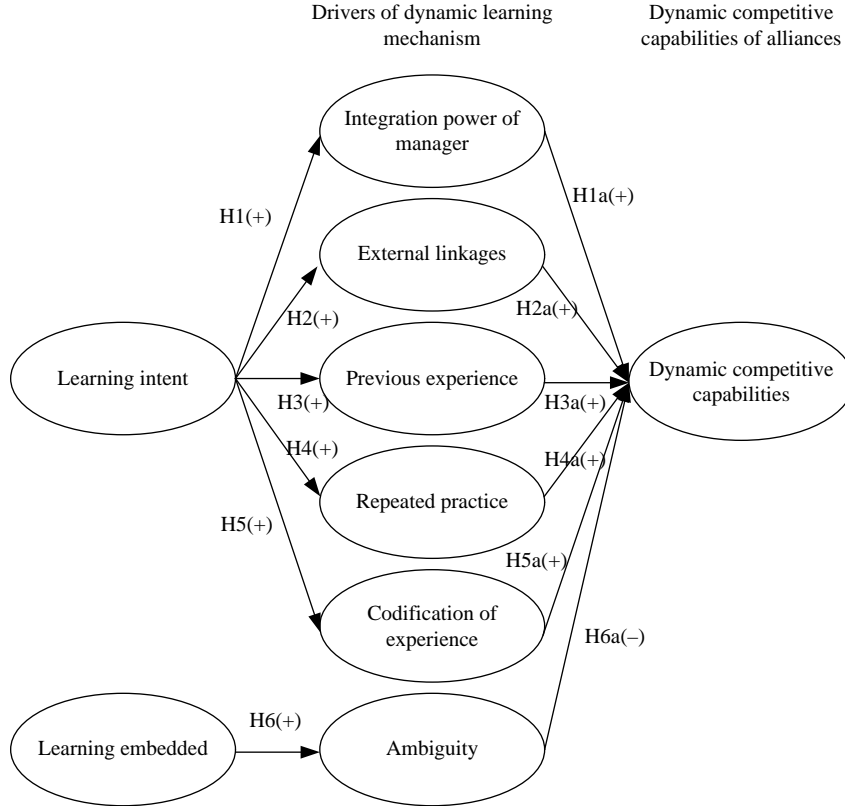


Figure 2.
Theoretical model of the dynamic learning process of DCC

Conclusions and managerial recommendations

Previous studies based on RBV have failed to provide a clear theoretical model to explain how firms maintain DCC and long-term competence in varied and fast-paced environments. An organizational DLM is a key to the development of DCC that cannot be duplicated by competitors. We investigated the driving drivers of DCC from the perspective of DLM. First, we summarized previous, pertinent research, and identified important drivers. Then we conducted five case studies to prove our theoretical deductions, confirm DLM drivers, and discuss the implications of our model. We found that drivers such as external linkages, previous experience, repeated practice, experience codification, and the integration power of managers have a positive impact on DCC development, while ambiguity has a negative impact. In addition, we confirmed that the characteristics of firms' dynamic capabilities are embedded in the development process.

DCC development includes well-known organizational and strategic processes such as alliances, the strategic values of which lie primarily in allowing organizations to manipulate resources and enter a routine of renewing value; notably, a DLM plays a decisive role in this evolutionary process. We followed the perspectives of Penrose (1959), Teece (1984), and Wernerfelt (1984) that unique competitive advantages are

created by organizations who possess a DLM fueled by effective drivers. This concept provides the best explanation for how firms maintain dynamic and long-term competitive advantages and create value.

There is a great variety of business activities in Europe which has important impacts on global economic development, especially in the fields of electronics and telecommunications. Over the past 20 years, many large European firms, for example, including BMW, Nokia, Philips, and Motorola, have continued to expand their business boundaries and activities by alliances or acquisitions, possibly in an effort to integrate international markets (Figueira, Nellis *et al.*, 2007). However, over the last 5 years, the Euro's formal demonetization has caused uncertainty in the European business system. Although our results are applicable to firms worldwide, they may prove particularly pertinent to the European Union's (EU) current environment. We believe that the EU's greatest missions are the growth of business activities and the creation of competitive advantage, as well as its increasing impact on improving market efficiency. However, European enterprises are losing out on a significant amount of business and competitive competence, mainly because they are not consolidating useful resources and effectively renewing their DCC. We believe that our results and proposed theoretical framework provide a reliable basis for DCC development and improved business success, particularly for European enterprises.

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