

การกำหนดกระบวนการดูดซับความรู้ และ อุปสรรคในการดูดซับความรู้: กรณีศึกษาของบริษัทให้บริการเฉพาะ

บาชีท พฤกษภาพ¹

Received: June 12, 2020

Revised: August 31, 2020

Accepted: November 4, 2020

บทคัดย่อ

การศึกษานี้ต้องการหากระบวนการ และ อุปสรรคในการดูดซับความรู้ (Absorptive capacity) ในบริบทของบริษัทให้บริการเฉพาะกิจ (Professional service firm) เพื่อให้มุมมองที่ครอบคลุมเกี่ยวกับวิธีที่บริษัทใช้ดูดซับความรู้หรือข้อมูลที่เป็นประโยชน์จากภายนอก และ อุปสรรคที่ทำให้กระบวนการดังกล่าวล้มเหลว เนื่องจากบริษัทให้บริการเฉพาะกิจมักพึ่งพาองค์ความรู้ที่ไม่ปรากฏชัดแจ้ง (Tacit knowledge) จากพนักงานในองค์กร โดยเฉพาะ ผู้เชี่ยวชาญในการให้บริการทางความรู้กับลูกค้า. โดยองค์ความรู้ที่ไม่ปรากฏชัดแจ้งนั้นสามารถสร้างขึ้นจากประสบการณ์ในอดีตของรายบุคคล รวมถึงการดูดซับความรู้หรือข้อมูลที่เป็นประโยชน์จากภายนอก ซึ่งทำให้กระบวนการดูดซับความรู้ของบริษัทให้บริการเฉพาะกิจอาจมีความซับซ้อน และ แตกต่างจากกระบวนการดูดซับความรู้ของบริษัทที่เน้นการวิจัยที่ขึ้นอยู่กับองค์ความรู้ชัดแจ้ง (Explicit knowledge) โดยเหตุดังกล่าวทำให้มีความสนใจในการวิจัยเกี่ยวกับกิจกรรมที่ประกอบไปด้วยกระบวนการดูดซับความรู้ และ ปัจจัยที่จำกัดกระบวนการดังกล่าวในบริบทของบริษัทให้บริการเฉพาะกิจ ผลวิจัยชี้ให้เห็นว่ามีหกกระบวนการในการดูดซับองค์ความรู้ ซึ่งเป็นการรวมกันระหว่างการดูดซับความรู้ระดับบุคคล การดูดซับความรู้ระดับบริษัท และ กลไกที่เชื่อมกันของการดูดซับความรู้ทั้งสองระดับ และ ได้เสนออุปสรรคในการดูดซับความรู้ ซึ่งแบ่งออกเป็น ระดับบุคคล ระดับภายในองค์กร และ ระดับภายนอกองค์กร

คำสำคัญ: การดูดซับความรู้ บริษัทให้บริการเฉพาะ ความรู้ที่ไม่ปรากฏชัดแจ้ง ความรู้ที่ปรากฏชัดแจ้ง
การจัดการความรู้ การจัดการกลยุทธ์

¹ นักศึกษาปริญญาโท สาขาธุรกิจระหว่างประเทศและกลยุทธ์ มหาวิทยาลัยแลงแคสเตอร์
(ผู้รับผิดชอบบทความ, Email: b.prueksaphap@gmail.com)

Configuring the absorptive capacity process and its barriers: a case study of professional service firm

Basit Prueksaphap¹

Received: June 12, 2020

Revised: August 31, 2020

Accepted: November 4, 2020

Abstract

This study configures the process as well as barriers of absorptive capacity in a context of professional service firm (PSF) to provide a comprehensive view toward how it absorbs external useful knowledge or information and why it fails to do so. As the PSFs rely on the tacit knowledge from their organizational members, particularly experts/professions in serving the knowledge-based services to the customers. This tacit knowledge can be built on each person past experiences as well as external knowledge/information that the person absorbed, which its knowledge absorption process may be more complex and different from other research-intensive firms that rely more on explicit knowledge. It brings attention to explore activities and routines that constitute to the absorptive capacity process as well as the constrained factors of such process in the PSF context. The findings suggested there are six major stages in service firm's absorptive capacity process, which merging individual-level and firm-level absorptive capacities together as well as the mechanism linking between both levels and suggested three layers of barriers: individual-level, internal, and external environment barriers in relations with each stage in service firm's absorptive capacity process.

Keywords: Absorptive capacity, Professional service firm, Tacit knowledge, Explicit knowledge, Knowledge management, Strategic Management

¹Master student in MSc. International Business and Strategy from Lancaster University
(Corresponding author, Email: b.prueksaphap@gmail.com)

Introduction

The absorptive capacity is a firm's ability to recognise or identify valuable outside knowledge, assimilate it, and ultimately apply the assimilated knowledge for commercial purposes (Cohen and Levinthal, 1989; 1990). However, this seminal definition is scoped within the technological knowledge with R&D is an essence of the firm's knowledge absorption. Although Cohen and Levinthal (1989, 1990) argued that the absorptive capacity is a multi-level construct, but the majority of absorptive capacities have concentrated only at the firm-level (Lane et al., 2006; Volberda et al., 2010). Plus, the previous studies also had agreed on the multi-dimensional of absorptive capacity process (e.g. Lane and Lubatkin, 1998; Lane et al., 2001; Lane et al., 2006; Lichtenthaler, 2009; Jansen et al., 2005; Patterson and Ambrosini, 2015; Todorova and Durisin, 2007; Zahra and George, 2002).

Even though the studies agree that absorptive capacity is a multidimensional construct, until now there has been no consensus regarding the number of absorptive capacity process-dimensions. This is possibly because most of the researchers having studied the absorptive capacity within the research-intensive firm and utilising several proxy measurements that related to R&D, following

Cohen and Levinthal's seminal works (1989, 1990). This also has been caused theoretical and empirical evidence regarding routines, activities that constitute to absorptive capacity process in other type knowledge and business contexts are still neglected (Lane et al., 2006; Lewin et al., 2011; Volberda et al., 2010).

Moreover, little of previous studies have done the constrained factors or barriers to absorptive capacity. There are only two published researches worked on the barrier perspective. First, Matthyssens et al. (2005) listed several barriers to absorptive capacity process of Zahra and George (2002) without explanations how those barriers constrain each process. Second, Cuervo-Cazurra and Rui (2017) re-conceptualised antecedents to absorptive capacity in Todorova and Durisin (2007) and also added several barriers that empirically occurred within research-intensive firm in emerging market context. However, those studies are still under-investigated the barriers in other contexts such as a service firm that may appear differently.

Based on the aforementioned information, my questions remain on the process and barriers of absorptive capacity in other types of business that massively rely on knowledge/information such as PSFs. The PSF is a service firm that providing the services resulting from expertise/professional knowledge (von Nordenflycht, 2010). The PSFs tend to play a critical role in shaping the global economy

as they highly employ knowledgeable workers and also providing the knowledge-based services such as financial consultations to the customers, which could influence on the way the customers operate their business further (Løwendahl et al., 2001). To provide the knowledge-based services effectively, the PSFs need to be actively and frequently absorbed new outside knowledge/information over time since that outside information/knowledge is a signal of current and future business environment which the PSFs can exploit to create new knowledge or service procedures to provide the customers. As such, the absorptive capacity is directly related and plays a significant role within the PSFs.

As the PSFs heavily rely on the tacit knowledge from their organizational members, particularly experts/professions. The tacit knowledge per se which is built on each person past experiences and outside knowledge/information that each one has been absorbing, so the service firm's absorptive capacity process and its barriers may be more complex and different from the research-intensive firms that rely more on explicit form of knowledge. Therefore, to address these gaps, my research questions are:-

1. *How does a PSF absorb new external knowledge/information?*
2. *Why does a PSF fail to absorb new external knowledge/information?*

Literature Review

Definition of absorptive capacity

Cohen and Levinthal (1989, 1990) adapted this macroeconomic definition into the industrial-organisation economic field and defined this term as the firm's ability to recognise or identify valuable outside knowledge, assimilate it, and ultimately apply the assimilated knowledge for commercial purposes. This was the first simple and clear use of the term absorptive capacity (Lane et al., 2006).

Such a definition, introduced by Cohen and Levinthal (1989, 1990), is framed within a technological knowledge context; likewise, Volberda et al. (2010) argued that Cohen and Levinthal's works framed R&D at the centre between innovation and learning. Although this seminal definition provided by Cohen and Levinthal (1989, 1990) has been much cited by subsequent studies, a few of them have redefined and expanded their definition through theoretical justification. Thus, there are slight variations of the absorptive capacity definition in the subsequent studies (e.g. Zahra and George, 2002; and etc.).

The "relative absorptive capacity" concept was introduced by Lane and Lubatkin (1998). The researchers reinterpreted the firm-level of absorptive capacity concept from Cohen and Levinthal (1989, 1990) into a learning dyad perspective. More precisely, Lane and Lubatkin (1998) proposed that the

relative absorptive capacity is the student or receiver firm's ability to absorb knowledge from another teacher/sender firm through a process of recognising value, assimilating, and applying. Regarding this definition, Lane and Lubatkin (1998) found that the analogous characteristics between a student firm and a teacher firm, specifically in terms of similarities in knowledge processing and

knowledge application systems, significantly determine the student firm's ability to absorb knowledge from the teacher firm. This relative absorptive capacity concept can also be applied to other collaboration types associated with knowledge transfer, such as intra-organisational linkages (Lane and Lubatkin, 1998; Lane et al., 2001).

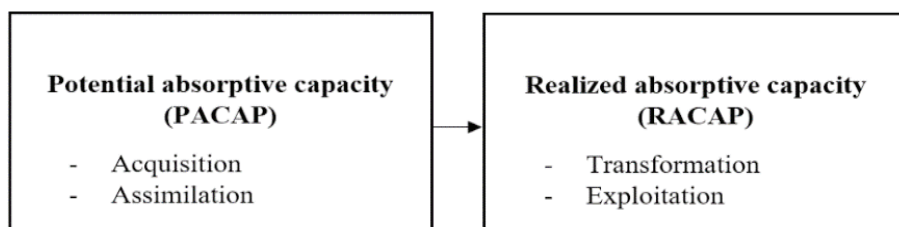


Figure 1: Absorptive capacity process based on Zahra and George (2002)

Later, in 2002, Zahra and George re-conceptualised absorptive capacity into the firm's dynamic capability view by linking this concept to strategic process and a bundle of organisational routines. According to Zahra and George (2002), absorptive capacity is *"a set of organisational routines and processes by which firms acquire, assimilate, transform, and exploit knowledge to produce a dynamic organisational capability"* (p.186). This definition illustrates four firm capabilities that represent the four dimensions of absorptive capacity (see Figure 1). Notably, Zahra and George's work (2002) has made several reformulations in both definition and dimensions from the seminal work by Cohen and Levinthal (1989, 1990). The first dimension was changed from "recognise" into "acquire" and the last dimension also was changed from "apply"

into "exploit". The four dimensions were then grouped into two main components that are PACAP, which means through acquisition and assimilation, the firm can create and increase its knowledge stock, and RACAP, which means through transformation and exploitation, the firm can take advantage of assimilated knowledge to increase profit (Zahra and George, 2002). These two components are obviously separate constructs, but the functions are complementary in creating firm's values (Zahra and George, 2002). These two components: PACAP and RACAP were considered a big change in the absorptive capacity (Zapata and Hernández, 2018). The complementary roles of both PACAP and RACAP had been confirmed by several empirical researches (e.g. Ebers and Maurer, 2014; Jansen et al., 2005).

Due to a vast stream of subsequent absorptive capacity literature, the original meaning had become more and more unclear since the researchers adapted the absorptive capacity's meaning based on their research purposes and personal bias (Lane et al., 2006). This led to absorptive capacity being reification. Lane et al., (2006) by analysing 289 absorptive capacity published papers from 14 journals, had suggested a new definition of absorptive capacity: to be able to utilise externally generated knowledge, the firm has to pass through “*exploratory learning, transformative learning, and*

exploitative learning” as three sequential learning processes. Based on this definition, most studies viewed absorptive capacity as being related to the learning process, which follows Cohen and Levinthal's three original dimensions (1989, 1990). Although transformation capacity was introduced by Zahra and George (2002), it was implicitly shown in Lane et al.'s definition (2006) as transformative learning instead. This is because assimilation and transformation are involved with assimilating and combining both external and internal knowledge, the two processes hence overlapping (Lane et al., 2006).

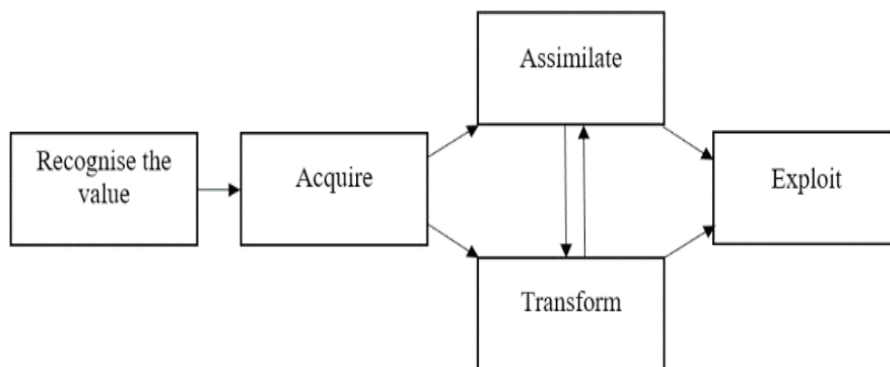


Figure 2: Absorptive capacity process based on Todorova and Durisin (2007)

Later, Todorova and Durisin (2007) clarified several ambiguities from Zahra and George's work (2002). They argued that “*assimilation*” and “*transformation*” are not sequential processes, but are alternatives (Todorova and Durisin, 2007). The assimilation is a process whereby new external knowledge is fit with the firm's existing knowledge base, so it is ready for exploitation, whereas the transformation process occurs when external and internal knowledge are incongruent. This corresponds with Lane et al.'s work

(2006). Moreover, Todorova and Durisin (2007) reintroduced “*recognition*” from the classic model by Cohen and Levinthal (1989, 1990). They argued that the firm should firstly recognise the valuable outside knowledge, then acquire it into the firm's internal system, as argued by Todorova and Durisin (2007). Therefore, Todorova and Durisin (2007) redefined absorptive capacity as the “*firm's ability to recognise, value, acquire, assimilate or transform, and exploit external knowledge*” (see Figure 2).

Multi-level absorptive capacity

Absorptive capacity is a multi-level construct (Cohen and Levinthal, 1990; Lane et al., 2006; Volberda et al., 2010). As Cohen and Levinthal's seminal paper (1990) viewed the individual-level as an antecedent to the firm-level absorptive capacity, the subsequent studies tend to concentrate on the characteristics of the individual that contribute to the firm's absorptive capacity, specifically in knowledge acquisition and assimilation rather than the full process. Lane et al. (2006) highlighted that existing absorptive capacity literature limits the construct as existing only within the firm, while ignoring the role of the individual in each process and linking between individual-level and firm-level absorptive capacity. A recent

study found that individual-level is not only an antecedent for firm-level absorptive capacity, since assimilation and exploitation processes also require individual attempts to promote their absorbed external knowledge (Salter et al., 2014b). Therefore, it is necessary to address how absorptive capacity at both levels is fully emerged (Lane et al., 2006; Volberda et al., 2010).

Process-based dimension of absorptive capacity

Even though the studies agree that absorptive capacity is a multidimensional construct, until now there has been inconclusive regarding the number of absorptive capacity process-dimensions (see Table 1).

Table 1: summary of absorptive capacity process-based dimensions from previous studies

Dimension Researcher(s)	First	Second	Third	Fourth	Fifth
Cohen and Levinthal (1990)	Recognise the value	Assimilate	Apply		
Lane and Lubatkin (1998)	Recognise the value	Assimilate	Apply		
Lane et al. (2001)	Recognise the value	Assimilate			
Zahra and George (2002)	Potential absorptive capacity		Realised absorptive capacity		
	Acquire	Assimilate	Transform	Exploit	
Jansen et al. (2005)	Potential absorptive capacity		Realised absorptive capacity		
	Acquire	Assimilate	Transform	Exploit	
Lane et al. (2006)	Exploratory learning	Transformative learning	Exploitative learning		
Todorova and Durisin (2007)	Recognise	Acquire	Assimilate/ transform	Exploit	
Lichtenthaler (2009)	Exploratory learning	Transformative learning	Exploitative learning		
Patterson and Ambrosini (2015)	Search for and recognise the value	Assimilate	Acquire (simultaneously with assimilation)	Transform (simultaneously with assimilation)	Exploit (simultaneously with assimilation)

Table 1 shows that the absorptive capacity comprises at least two dimensional-process constructs. Almost all of them viewed absorptive capacity as a sequential process, while a recent study by Patterson

and Ambrosini (2015) conducted an empirical qualitative study within a research-intensive firm context and found that its process seems to be interactive rather than sequential (see Figure 3).

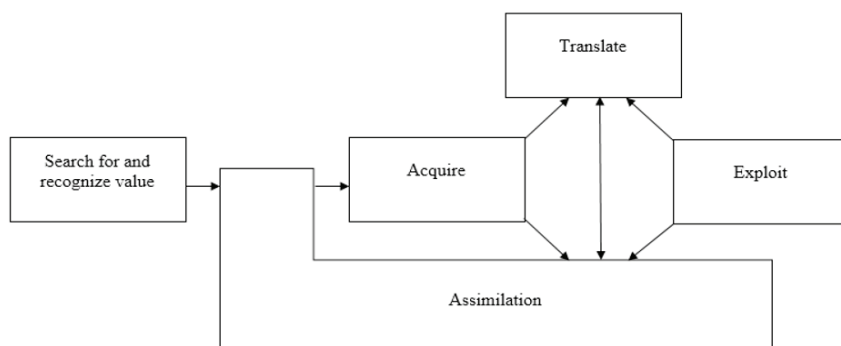


Figure 3: Absorptive capacity based on Patterson and Ambrosini (2015)

Prior related knowledge and external information/knowledge

The firm's prior knowledge and new external information/knowledge are considered as the "firm-level antecedents" of absorptive capacity process (Cohen and Levinthal, 1990; Todorova and Durisin, 2007; Zahra and George, 2002). In fact, knowledge can be classified into two distinct groups (Nonaka and von Krogh, 2009; Teece, 2007); firstly, tacit knowledge is implicit and non-codified knowledge or skills (Nonaka, 1994) and secondly, explicit knowledge is codified and articulated knowledge which can be captured in drawing and writing (Grant and Baden-Fuller, 2004). Cohen and

Levinthal (1989, 1990) emphasised technological knowledge/information, which tends to be more explicit knowledge component and followed by many subsequent studies (e.g. Lane and Lubatkin, 1998; Patterson and Ambrosini, 2015, Todorova and Durisin, 2007). As such, Volberda et al. (2010) recognised this gap and suggested that future research should be focused on various types of knowledge, in line with Cuervo-Cazurra and Rui (2017), who recommended that absorptive capacity studies should empirically explore the service firm setting, due to it largely depending upon tacit knowledge.

Acquisition, assimilation, transformation and exploitation

Acquisition

The acquisition dimension proposed by Zahra and George (2002) is originally rooted in Cohen and Levinthal (1990) as “*recognition*” and it also refers to “exploratory learning” introduced by Lane et al. (2006). Unlike the recognition process, Zahra and George (2002) argued that the acquisition term not only refers to the evaluation of valuable outside knowledge/information, but it also emphasises the way in which knowledge/information is transferred from sender to receptor. Regarding this process, it involves the firm’s capacity to “locate, identify, evaluate, and acquire” (Camisón and Forés, 2010) outside knowledge/information.

Assimilation

Once the useful external knowledge/information has been acquired, the firm has to internalise it into the firm’s knowledge processing system; this is called “*assimilation*” (Zahra and George, 2002). However, Patterson and Ambrosini (2015) found that the assimilation process should take place before acquisition as an opportunity for screening or a due diligence process, and also occurs along with the transformation and exploitation to address the certain knowledge gap at those stages. Many studies have elucidated that regardless of whether it is ready-to-use knowledge/information or not, it all needs to pass through the assimilation process (Lane

and Lubatkin, 1998; Lane et al., 2001; Zahra and George, 2002). This is probably because external knowledge/information is characterised as “sticky information” (von Hippel, 1998) and has not yet been translated into the firm’s jargon to be compatible with the firm’s current knowledge base (Lane and Lubatkin, 1998).

Transformation

There are different arguments regarding the position of the transformation process within the absorptive capacity construct. Zahra and George (2002) proposed that the transformation occurs after assimilation, but Todorova and Durisin (2007) and Patterson and Ambrosini (2015) argued that both happen coincidentally due to being alternative processes. Nonetheless, both assimilation and transformation refer to the processes of combining and integrating new outside knowledge/information into the firm’s current knowledge base; hence, Lane et al. (2006) combined both together as transformative learning. The distinction between transformation and assimilation is that transformation refers to the process of combining external knowledge/information and internal existing knowledge when both are incongruent and also merging them to carry out the new cognitive structure (Zahra and George, 2002). This process is composed of adding, removing, composing and reinterpreting the knowledge/information in a new way (Jansen et al., 2005; Todorova and Durisin, 2007).

Exploitation

The final dimensional-process is exploitation, which is the stage at which the firm redefines, extends and leverages its internal existing competencies by determining the applications of new assimilated or transformed knowledge, thereafter incorporating it into its operations (Zahra and George, 2002). Although Cohen and Levinthal (1990) and Todorova and Durisin (2007) proposed that absorptive capacity is a path-dependent construct, interestingly a recent study found that exploitation is not a path-dependent dimension because prior related knowledge and exploitation are independent (Zobel et al., 2016). This corresponds with the findings of Lane et al., (2001) that the exploitation is independent from recognition and assimilation. This might be because the firm's prior knowledge, which seems to be inapplicable in certain fields, can possibly generate a competitive advantage if it is reconfigured in a new and meaningful way.

Although there is a large stream of absorptive capacity studies, there is still a lack of consensus among the researchers regarding the process dimension or shape of the construct. This is due to the majority of previous studies having studied absorptive capacity within the research-intensive firm context and relying on proxy measurements, following Cohen and Levinthal's seminal works (1989, 1990) however, they were

unsuccessful to validate the construct. While the firm's activities, routines and processes constitute the process dimension of absorptive capacity in other types of business and knowledge still remain in a black box (Lane et al., 2006; Lewin et al., 2011; Volberda et al., 2010).

Employee knowledge sharing capability

Central to absorptive capacity is employees because they are engaging in knowledge sharing (Caligiuri, 2014). Likewise, Ganguly et al. (2019) found that the employees who have better knowledge sharing capability are key in driving organization's innovation. In absorptive capacity literature, both theoretical and empirical studies have identified organisational antecedents, which tacitly may refer to knowledge sharing capability; for example, "*social integration mechanisms*" that can occur formally and informally (Todorova and Durisin, 2007; Zahra and George, 2002). Also, Jansen et al. (2005) indicated that "*coordination capabilities*" increase PACAP and "*socialization capabilities*" enhance RACAP.

Managerial capabilities

As the firm's dominant logic results from the manager's dominant logic, empirically, the findings of Eggers and Kaplan (2009) suggested that firm-level absorptive capacity is influenced by managerial cognition. Correspondingly, Van den Bosch et al. (1999) found that there

is a strong relationship between managerial effect and the firm's knowledge process. Additionally, several studies illustrate how managerial capabilities influence the way in which the firm absorbs external knowledge/information, such as through the firm's structure and communication style, expertise knowledge distribution, and so on (Kogut and Zander, 1992; Lenox and King, 2004).

Barriers to absorptive capacity

The majority of researches on the absorptive capacity tends to concentrate on antecedents, process and outcome to validate the construct (Lane et al., 2006; Volberda et al., 2010), so only two published studies have focused on barriers to absorptive capacity (Cuervo-Cazurra and Rui, 2017; Matthyssens et al., 2005).

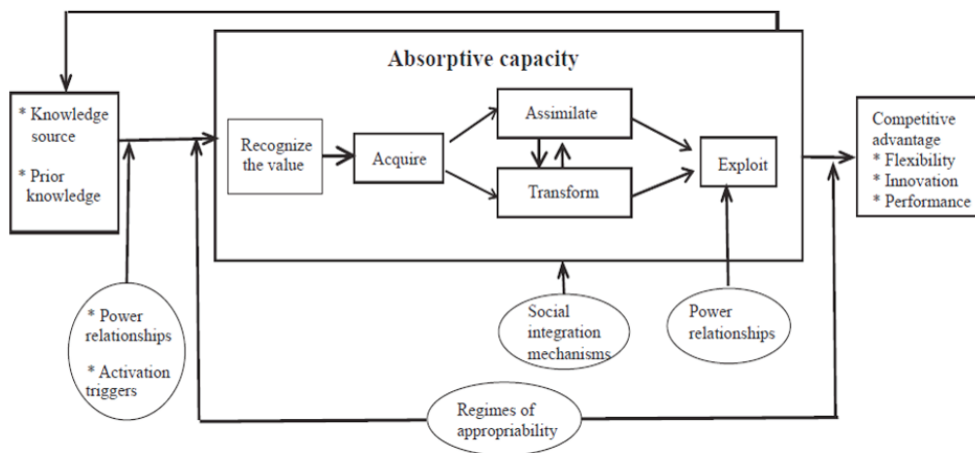


Figure 4: Full model of absorptive capacity by Todorova and Durisin (2007)

Matthyssens et al. (2005) listed several barriers to the four-dimensional process of Zahra and George (2002) based on marketing case-based examples. However, the barriers asserted by Matthyssens et al. (2005) may be specific to their examined cases only and there is a lack of explanation as to how those barriers constrain each absorptive capacity process. Thus, their findings may not be applicable in other firm contexts.

More recently, Cuervo-Cazurra and Rui (2017) re-conceptualised the contingent barriers proposed by Todorova and Durisin (2017) through an empirical qualitative research of technological firms within the emerging market context (see Figure 4). They found several additional barriers and classified them as internal barriers, such as weak social integration mechanisms and managerial biases, and external barriers, including a weak appropriability regime,

lack of triggering events, and conflict over resource ownership (Cuervo-Cazurra and Rui, 2017). These different barriers negatively impact on the different process-dimensions of absorptive capacity; for example, Cuervo-Cazurra and Rui's findings (2017) clarified the inconclusive issue regarding the effect of appropriability regimes of previous studies that through the ineffective enforcement of intellectual property protection can constrain the firm's acquisition and exploitation processes.

As Cuervo-Cazurra and Rui (2017) re-conceptualised the barriers from Todorova and Durisin (2007), their findings are hence based on collective factors rather than individual-level barriers, as argued by Volberda et al. (2010). Additionally, Cuervo-Cazurra and Rui (2017) highlighted that some barriers may be specific to technological firms, where knowledge is highly codified only, and further research should be undertaken in service firms, where the absorptive capacity process and barriers may occur differently due to their massive reliance on tacit knowledge.

Professional service firm (PSF)

There is an extensive variety of types of service firms. Scholars have divided service firms into two broad categories, which are PSF and Non-PSF, based on their value creating activities (Løwendahl, 2005). The PSF is very distinctive from other firms in terms of its environment as well as management features (Greenwood et al., 2005; Empson,

2001). For instance, PSFs mainly employ highly educated graduate workers and provide knowledge-based services to their clients to further their business operations (Løwendahl et al., 2001).

In fact, the term PSF is indirectly defined based on the characteristic of professional, which denotes a person who possesses expertise and knowledge within a specific area (von Nordenflycht, 2010). Therefore, the term PSF refers to a firm whose workforce depends upon specific expertise and knowledge (Greenwood and Suddaby, 2006; von Nordenflycht, 2010). As such, the PSF definition is similar to a "*knowledge-intensive firm*" (Anand et al., 2007; Teece, 2003). Starbuck (1992) postulate that the term knowledge-intensive firm hints that knowledge is a critical input to the firm's business operations. Likewise, this term also refers to a service firm that creates and customises services or customer solutions through its value-added activities, including gathering, creating and disseminating knowledge (Bettencourt et al., 2002; Mills et al., 1983).

A lack of understanding of the taxonomy of PSF may lead to the wrong research implications. Hansen et al. (1999) divided PSF into "reuse economic" and "expert economic" based on the firm's value creation activities. The reuse economic refers to a PSF that offers low-customised services to its customers through frequently reusing the company's

knowledge and lack of interaction with customers, while the expert economic PSF has high interactions with counterparties to provide highly customised services (Hansen et al., 1999). Correspondingly, through a comprehensive PSF literature review, Løwendahl et al. (2001) proposed that PSFs could be classified along a continuum of low to high service customisation degree. This describes how the PSF absorbs and creates new knowledge since it is linked to the way in which it associates the customers/clients (Løwendahl et al., 2001; Thompson, 1967). For instance, a lower degree of association means the services tend to rely heavily on the market data and experts' tacit knowledge rather than the co-creation service with the customers; consequently, there is a low degree of customisation (Løwendahl et al., 2001; Thompson, 1967).

To be able to provide knowledge-based services, Empson (2001) asserted that there are two broad types of knowledge associated with PSFs. Firstly, technical knowledge is the individual's possessed knowledge about the firm's industry, the firm's internal environment, and his/her own professional knowledge (Alvesson, 1993; Empson, 2001; Greenwood et al., 1990). This is in line with the argument by Morris (2001) that this knowledge is ongoing and constantly and accumulatively develops over the time during which the individual provides knowledge-based services. This could also refer to experienced-based knowledge or tacit knowledge (Nonaka,

1994). Secondly, client knowledge relates to an understanding of every aspect of the customers such as their industry, firm, inside people, and so on (Empson 2001).

Taken altogether, the features of PSF imply that tacit knowledge is that which is embedded within the employees, especially those professions that are very critical in offering services and need to disseminate and codify this tacit knowledge throughout the firm. Thus, understanding absorptive capacity in terms of the process and barriers within this context is necessary; however, the theoretical and empirical evidence of absorptive capacity within the PSF setting is still scarce.

Methodology

Research design

To answer the research questions, a qualitative research design is used in conducting this research. This is because the previous absorptive capacity studies fail to validate the process construct, while the barriers are still under-investigated, thus Edmonson and McManus (2007) suggested the future study to use open-ended questions instead.

An inductive research approach is also employed in conducting this research. This means the research has not started with any theories or conceptual frameworks that have been developed by previous researches (Saunders et al., 2009), but reliant on the collected data to develop a new framework which is directly relevant to the research questions.

A single case study method has been chosen to study the phenomenon under a PSF context. Yin (2003) argued that a case study method is suitable for in-depth investigation of the contemporary phenomenon within the real-life context, where evidence between phenomenon and context boundaries are scarce. As Cuervo-Cazurra and Rui (2017) recommended further absorptive capacity studies to work on the process and barriers within the service firm since it may occur differently from the technological or research-intensive firm, which implicitly suggested for the use of a case study approach as a research method. The service firm context thus is considered as a new context within the absorptive capacity literature, which still lacking theoretical and empirical evidence regarding the absorptive capacity process and barriers within the service firm context.

Case-selection

The empirical setting for this research is a banking/financial service firm, particularly the operation division. This setting is considered as reuse economic since the workers have been relying on the guidebooks, which is a company's internal knowledge and always reuse them when serving the customers. Additionally, the accessibility of this PSF in Thailand subsidiary allows me to gain insights regarding my research questions, particularly in barrier-perspective. This is because Thailand is categorised as the emerging countries, so deficiencies in

regulations and other external factors that differ from the headquarter might, directly and indirectly be the barriers to this PSF's absorptive capacity.

Data collection

Data collection used in this research consists of primary data from in-depth, semi-structured interviews, and secondary data from the company's written materials.

I used a snowball method (Miles and Huberman, 1994) in selecting samples or participants of this research. This process of suggesting the further participants by the previous participant is an example of snowball sampling method worked. The process had been continuing until the collected data are robust. As a result, there were eleven participants from bank's operation division with consisting of Customer analysts, Customer analyst supervisors, and Subject-matter-expert (SME) participated in the interviews.

Prior the interviews, themes or key questions had been designed to ensure that covered all the elements of the research questions : (1) summarising the company's internal environment, key developments and changes, (2) summarising key responsibilities and routines of current position, (3) new or unfamiliar information, knowledge, or cases, (4) explaining further stages in dealing with new or unfamiliar cases, (5) problems or barriers arose in dealing with the new or unfamiliar cases. These themes/key questions were interrelated to all participants, however, the flows

of questions were varied depended upon the conversation during the interviews and also additional unplanned questions were asked to discover insights of interesting issues

The written materials used in this research include: firstly, PSP³ is a document that provides to all workers in all subsidiaries. The information within the PSP mainly consists of general businesses and global level operations, procedures, and policies to ensure that the workers are familiar with the company internal systems. Secondly, EMP⁴ is the handbook for employees that presents overview of the company's information, its customers, and the expected roles of employees by companies. Thus, both PSP and EMP consisted of several useful information that allows me to gain insights about this PSF's internal environment at the global level.

Data validation

This research has triangulated the data in order to ensure the robustness of the gathered data (Yin, 2009). The data collection used in this dissertation consists of primary data from in-depth, semi-structured interviews, and secondary data from the company's written materials to see the consistency among obtained data. Additionally, using a snowball sampling method would mitigate the researcher's bias towards the findings.

Data analysis

This research has been adapted Gioia's model (Gioia et al., 1994) for inductively analysing the data means a myriad of terms, codes, and categories are derived from informants/participants rather than from the review of literature (Gioia et al., 2012).

The inductive data analysis process was begun through open coding (Strauss and Corbin, 1988), I delineated the raw data line by line in order to identify the text segments that refer to the process and barriers of absorptive capacity. Next stage, I used axial coding (Strauss and Corbin, 1988) by comparing and contrasting the 1st-order concepts and identifying the relationships between them. At the final level of data analysis, I examined the 2nd-order themes in order to extract them into aggregate dimensions by asking whether those themes provide any concepts that could explain my interesting phenomenon that are process and barriers of PSF's absorptive capacity.

Findings

Service firms' absorptive capacity process

As shown in Figure 5, the data analysis identifies six emerging dimensions/stages that collectively form the process of a service firm's absorptive capacity, which merge the individual-level absorptive capacity, linking mechanism between both levels, and firm-level absorptive capacity together (see Figure 6).

³The real name is replaced and anonymous for the confidential purpose

⁴The real name is replaced and anonymous for the confidential purpose

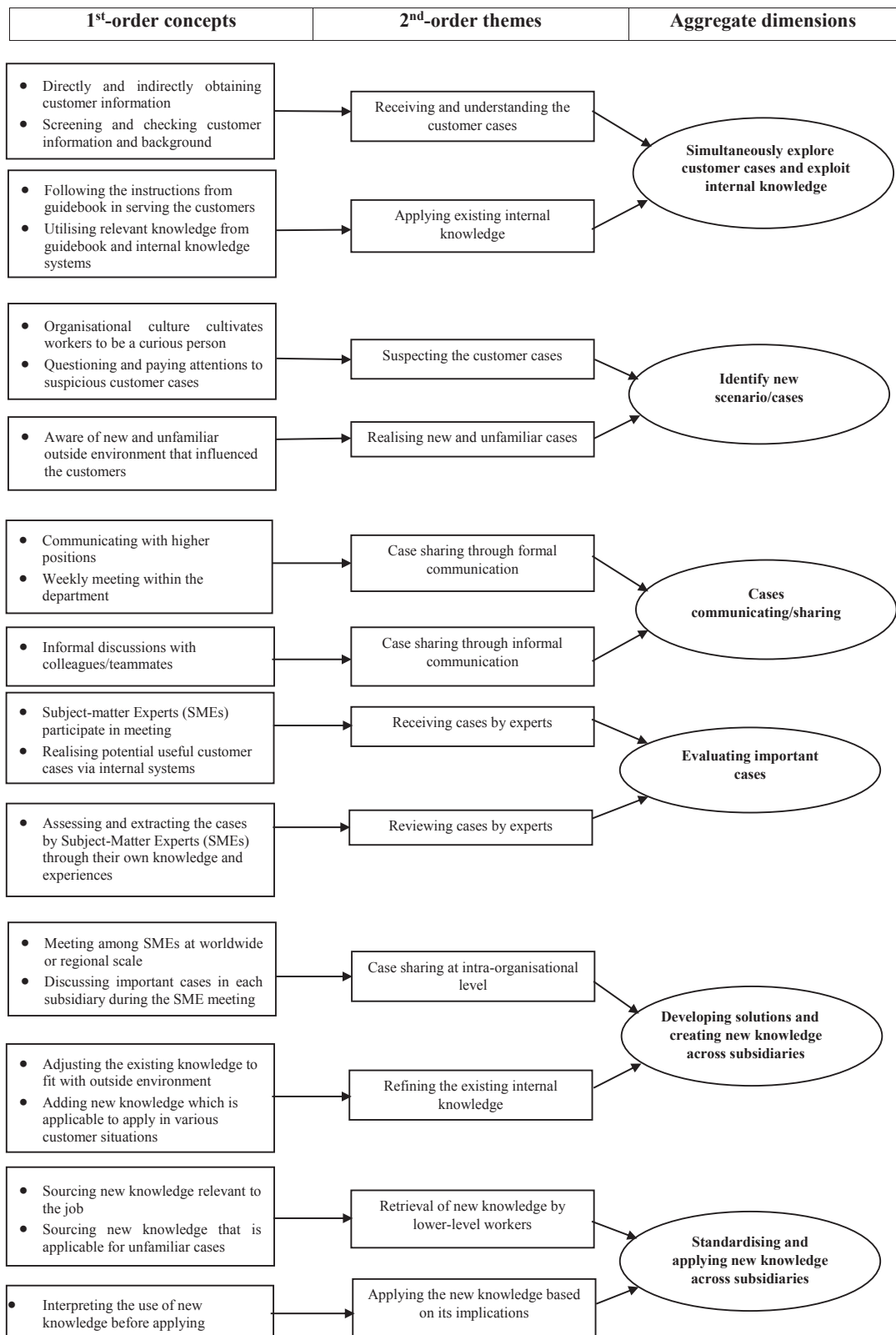


Figure 5: Data structure of service firm's absorptive capacity process

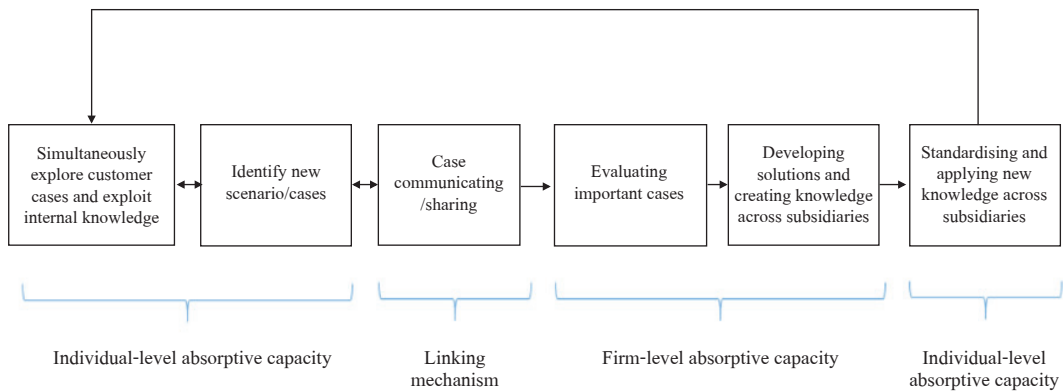


Figure 6: Service firm's absorptive capacity process

1. Simultaneously explore customer cases and exploit internal knowledge

First stage in the process refers to individual employees seeking customer information in order to provide the right services to the customers based on service procedures (knowledge) from the firm's existing knowledge sources. The employee's underlying activities at this stage are: (1) *"Receiving and understanding the customer cases"* is a customer due diligence process, in which different sources of customer information need to be woven into a full customer case, which is done by customer analyst position through "the front-officers receive customer information directly from walk-in customers" (Participant 3) and "search on Stock Exchange Thailand (SET) as almost all of our customers are list companies in Thailand" (Participant 9).

Additionally, (2) *"Applying existing internal knowledge"* refers to the employee's ability to select, follow and/or apply the company's existing knowledge within the

guidebook or internal knowledge systems that have been explicitly encoded as service procedures. Some participants strictly applied the company's guidelines, for example, "we followed the instructions from the guidebook that illustrated how to monitor or work procedure in serving the customers" (Participant 3), whereas other several interviewees also referred applying the knowledge rather than strictly following the procedure, for instance "the reasons why we have to do this (apply knowledge from guidebook), knowing the reason is significant, [...] so we could apply it correctly" (Participant 8). The possible reasons to explain the differences in the use of a firm's existing knowledge are first they have different backgrounds, particularly the length of time spent working within this company.

Taking the two activities above together, both activities occur iteratively and coincidentally to ensure that the employees do not misapply the company's service procedures. This first stage of the

service's firm absorptive capacity process is considered as individual-level absorptive capacity since each individual confronted different customer cases and the way in which they applied (tacit) knowledge to provide the customer services was different and had been embedded within the memory of each individual who was responsible for a certain customer case.

2. Identify new scenario/cases

This refers to the employees' perception that some customer cases were relatively new to him/her, the firm, and the firm's industry based on his/her individual thoughts, which were influenced by his/her background. There are two main employee activities: (1) *"Suspecting the customer cases"* means an employee's tendency to be curious and question something that appears unusual in the customer cases, which have been cultivated by firm's culture e.g. "due to the organisation culture, which cultivates us to be a curious person" (Participant 1), and also individual's knowledge and work experiences (tacit knowledge), for instance, "the customer information seemed to be reliable, but at some points, they were in contrast with each other, especially their source of wealth" (Participant 11). Such behaviour was beneficial to the firm because the employees could internalise the suspicious cases to the firm-level for further knowledge processing.

Furthermore, (2) *"Realising new and unfamiliar cases"* not only refers to the customer cases, but also includes the

external factors that probably influence the customers' actions e.g. "some cases were quite strange within this industry and we all should be aware of this unfamiliarity because those cases might be potential case studies for us to learn in the future" (Participant 10). Logically, any changes in the customers might hint at changes in the external environment, especially the evolutions of the financial service industry.

Taken altogether, both unusual and new/unfamiliar cases might refer to cases that have an unclear or no solution within the firm's existing knowledge (i.e. guidebook); thus, the employees may have thought it was a new case/scenario. At this stage, it is also considered as individual-level absorptive capacity since the new cases were identified based on each individual's subjective perception or their own tacit knowledge since the explicit knowledge (firm's guidebooks) has not been covered and this tacit knowledge has not yet internalised to the firm-level at this stage.

3. Communicating/sharing cases

The third stage refers to a linking and integration mechanism between individual-level and firm-level absorptive capacities. Based on the interview data, two broad mechanisms for case sharing are: (1) *"Case sharing through formal communication"* refers to the employee purposively communicating with another person or team through a formal meeting with purposes to

solve the customer cases e.g. “If I really did not understand the cases as well as how to provide the solution to the customers, I would ask my manager” (Participant 5) and to disseminate new/unfamiliar cases for further knowledge processing, which usually occurred through the formal department meeting, e.g. “usually during the meeting we were sharing and discussing new significant cases or issues that the guidebook had not covered” (Participant 8) The meeting seems to be a main channel for externalising each employee’s tacit knowledge (new and significant cases). Although the employees sometimes specifically indicated a person to communicate with, during the meeting, they needed to narrate again those cases that they subjectively thought were new and significant to the firm.

Another activity is (2) “*Case sharing through informal communication*” refers to employees informally and openly communicating or sharing cases with another unspecified person e.g. “the company’s working system facilitates the workers to have open and creative discussions” (PSP Book). The employees typically discussed these with the colleagues within their team first, especially those colleagues who had been working within the company for a couple of years.

Taken as a whole, both formal and informal case sharing/communicating are mechanisms that externalise the tacit knowledge to become explicit knowledge. It is a significant stage that connects the individual’s and firm’s absorptive capacities

together. As those new/unfamiliar cases that were embedded only within the employee who dealt with that case (tacit knowledge), he/she had to marshal or codify those cases in the form of a textual format or narrative story to be able to share it with others easily for seeking effective solutions/procedures since the firm’s existing knowledge sources might not be comprehensible on such issues. Thus, at this stage, those cases have been disseminated to other organisational members and internalised into the firm’s internal systems. Thus, at this stage, those cases have been disseminated to other organisational members and internalised into the firm’s internal systems.

4. Evaluating important cases

“Evaluating important cases” refers to the potentially new and significant cases, determined by the employees (customer analysts), which will be received, reassessed, understood and extracted by the experts/professions. This stage is constituted by (1) “*Receiving cases by experts*” refers to a situation where the potentially new or significant cases to the firm are transferred between lower-level employees; generally, from the customer analysts to Subject Matter Experts (SMEs), for example, “The SMEs also sat in the meeting and retrieved the information we were talking about or sharing” (Participant 9). The SMEs also realised new cases by themselves through observing the work tracking systems, particularly those cases that the workers had spent a longer time to resolve.

Moreover, (2) “*Reviewing cases by experts*” means that, through the experts’/professionals’ education, experiences, and professional background, they are able to assess and determine which cases are exactly new and significant to the firm and its industry e.g. “the SMEs applied the knowledge, skills and experiences in extracting the information from the meeting with lower-level workers which was considered significant and potentially applicable for the company” (Participant 9).

Taken altogether, during this stage, it appears to be a firm/organisational-level absorptive capacity since those potentially new and significant cases to the firm were codified to become explicit knowledge and shared to others, including the SMEs. The SMEs are therefore responsible for evaluating and identifying the cases that are truly new and significant to the firm based on their professional experience (tacit knowledge). The really significant cases would be further discussed at the global level to generate new knowledge/solutions.

5. Developing solutions and creating new knowledge across subsidiaries

This refers to a stage at which the significant cases, according to the experts/professions in each subsidiary, are pulled together for generating new knowledge (or customer solutions/service procedures) to the firm. This stage comprises (1) “*Case sharing at intra-organisational level*” is a meeting among the SMEs to discuss the important cases that arose in each subsidiary. The

SME meeting could occur on a worldwide or regional scale, with the main aim being to share and discuss the extracted cases in each subsidiary.

In addition, (2) “*Refining the existing internal knowledge*” refers to extending and updating the company’s existing knowledge available in both the guidebook and internal knowledge systems to effectively align with the new external environment. The SMEs then adjusted the firm’s existing knowledge through “knowledge improvement, adjustment, or reduction in the guidebook” (Participant 7), and the SMEs utilised their tacit knowledge so that “the new knowledge will be adjusted to be more comprehensive with various situations that may happen in the financial service industry in the long term” (Participant 11).

Taken as a whole, once the cases in all subsidiaries had been shared, the SME Board then created new knowledge by either (1) compatibly combining and adjusting the existing knowledge with the new significant cases and/or (2) transforming the cases to become the firm’s new knowledge and adding to the firm’s knowledge sources without combining the previous ones. This stage is considered as firm-level absorptive capacity since the new knowledge that was created had resulted from integrating the new significant cases and the tacit knowledge of SMEs, and was systematically codified into the explicit knowledge form to the firm. Consequently, the implications of new knowledge were compatible with the firm’s dominant logic.

6. Standardising and applying new knowledge across subsidiaries

The final stage refers to the new knowledge in the forms of the guidebook and internal knowledge systems, is available for applying to all workers across subsidiaries. There are two main activities underlying this stage: (1) *“Retrieval of new knowledge by lower-level workers”* means the employees (customer analysts and other positions) select the new knowledge based on each individual subjective criterion e.g. “sourced only relevant knowledge that was applicable with my current responsibility” (Participant 2), meanwhile several interviewees retrieved only the knowledge that was applicable to their new/unfamiliar cases, e.g. “I always sourced the new knowledge that I was unfamiliar with or rarely confronted; thus, next time I could apply it correctly” (Participant 3).

Another activity is (2) *“Applying the new knowledge based on its implications”* refers to the employees utilising the new knowledge based on each individual’s subjective interpretations. Although the firm had tried to globally standardise the use and implications of new knowledge, the implications of new knowledge can be interpreted differently based on each individual’s understanding of the knowledge.

The reason for this was described by an interviewee: “the new knowledge or information that has been encoded in the guidebook is like a regulation and it is subject to each person’s interpretation [...] to be able to apply it” (Participant 2). The manner of interpretation for each employee tended to reflect the background of each person; thus, the greater their work experience, the more precisely and correctly they interpreted the new knowledge’s implications

Taken altogether, this stage is indeed individual-level absorptive capacity because each employee needs to retrieve, translate, interpret and understand the new firm knowledge and apply it based on individually subjective interpretation. It turns the loop to the first stage as “new knowledge” becomes “existing knowledge”. Therefore, the service firm’s absorptive capacity process is path dependent.

Barriers to the service firm’s absorptive capacity

As shown in Figure 7, the data analysis depicts three emerging layers of barriers to the service firm’s absorptive capacity process, which comprise of individual-level, internal environment, and external environment (see Figure 8).

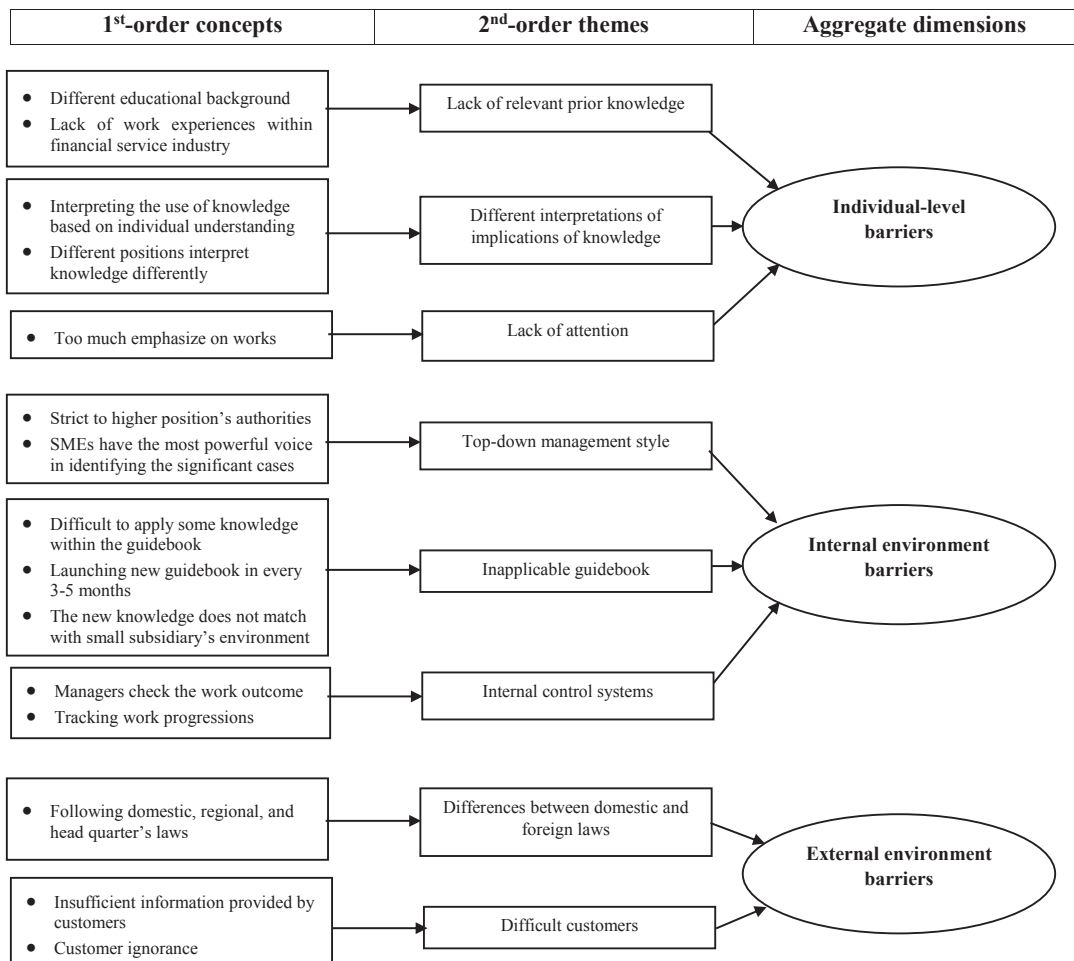


Figure 7: Data structure of barriers to service firm's absorptive capacity process

1. Individual-level barriers

"Individual-level barriers" refer to a set of factors that constrain the service firm's absorptive capacity that occurs for some employees rather than all employees. From the interview data, it is clear that there are three main individual-level barriers: (1) "*Lack of relevant prior knowledge*" refers to the backgrounds of some employees in both educational and work experience that is not related to the firm's industry; (2) "*Different interpretations of the implications of knowledge*" means that each individual understands and interprets the knowledge

within the guidebook or internal knowledge systems differently. Based on the interview data, it can be noted that this barrier is also influenced by each individual's background; (3) "*Lack of attention*" refers to the extent to which the employees pay attention to their work as they may be unaware of the introduction of new knowledge or the importance of new case sharing. Notably, the depth of focus on the work might be somehow influenced by each employee's personality type, but may also be partially influenced by the firm's internal environment, such as control systems.

Taken altogether, such barriers are directly related to each individual's background and attitude towards the work. These negatively affect the service firm's

absorptive capacity due to some employees being unable to identify and share new cases to the firm and also being unable to apply the firm's knowledge effectively (see Figure 8).

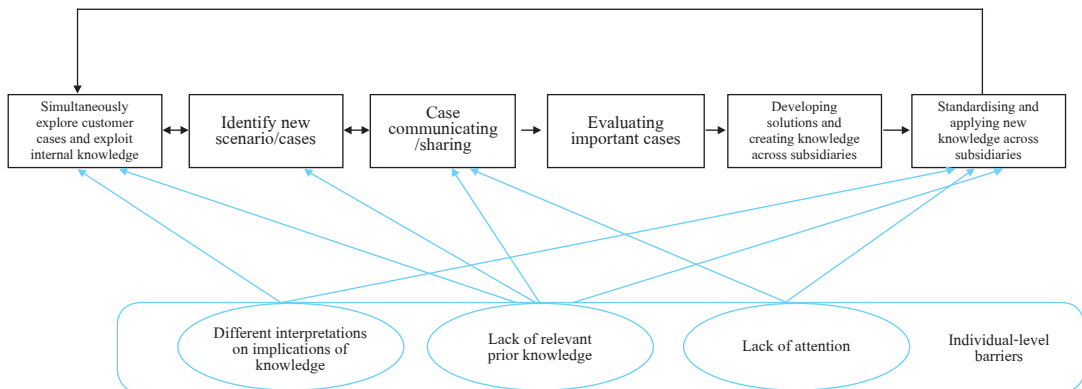


Figure 8: Individual level barriers in relations with service firm's absorptive capacity

2. Internal environment barriers

Internal environment barriers are a set of barriers that reflect the internal problems of the firm such as the structure, the firm's knowledge sources, and control systems that diminish employees' and the firm's ability to absorb new outside knowledge/information. The internal barriers include: (1) *"Top-down management style"* refers to an imbalance of power between high- and low-level workers. A clear example of the imbalance of power within this PSF is the fact that the SME position held the highest authority in determining which cases were important to the firm rather than this being determined by the employees (customer analysts), who dealt directly with – and gained more insight into – the customer cases; (2) *"Inapplicable guidebook"* refers to the employees being unable to apply the knowledge or some instructions within

the guidebook as it was not well-planned, designed or written at headquarters. Some sections of the knowledge/service procedures within the guidebook were hard for the employees to understand and apply due to several causes, such as the information contrasting with internal knowledge systems and repetitive service procedures; (3) *"Internal control barriers"* refer to the firm's attempt to regulate employees to achieve the firm's expected standard. Based on the interview data, there were two main control systems: outcome control through the customer cases analysis and process control through the company's work tracking systems. With the firm having too much control over the employees, they might place more emphasis on their work to meet the company's standard without concerning themselves with knowledge sharing or updating new knowledge.

Taken as a whole, unlike the individual-level barriers, these internal environment barriers tend to affect almost everybody in

this PSF. Remarkably, some internal barriers could be a distinct cause of individual-level barriers.

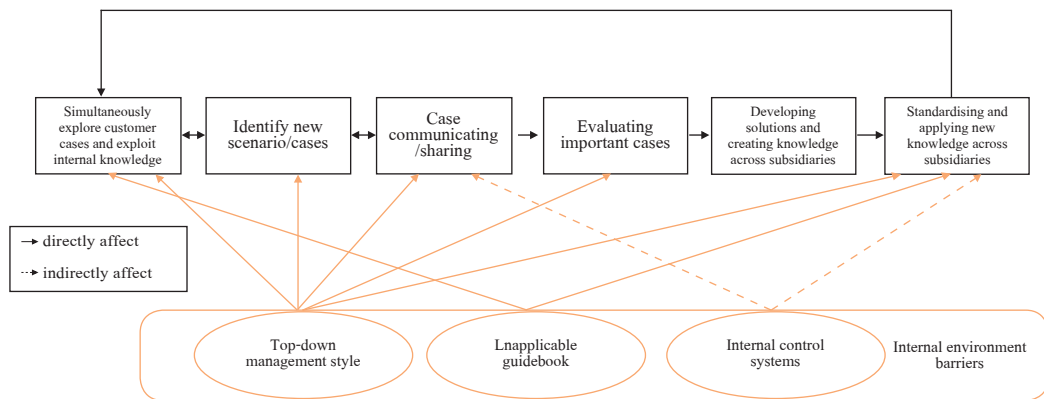


Figure 9: Internal environment barriers in relations with service firm's absorptive capacity

3. External environment barriers

External environment barriers are a set of barriers from outside stakeholders that posed some difficulties to the service firm in absorbing new knowledge/information. The external environment barriers include: (1) "Differences between domestic and foreign laws" pose a difficulty to the individual-absorptive capacity in applying the firm's knowledge/service procedures. This is because of the nature of the financial service industry, which is highly regulated, and also the need to localise to the local environment, such as local regulations. This PSF aimed to maintain a global service standard across the subsidiaries; thus, the employees had to consider various laws in service providing for the customers; (2) "Difficult customers" refers to the extent to which the customers are non-cooperative with the firm's

policy/instruction. If the customer provides insufficient information or ignores the information requirement, the employees might be unable to understand and capture the full case story; and could not justify whether this case is a potentially new significant case to the firm or not.

Taken altogether, the external barriers seem to directly and indirectly constrain the service firm's ability to absorb external knowledge/information and also make it more complicated to apply and identify the firm's knowledge (see Figure 10). The PSF has no power to control these outside barriers; however, by being aware of these barriers, the PSF could probably proactively prepare itself to deal with those external threats to facilitate both individual- and firm-level absorptive capacity processes.

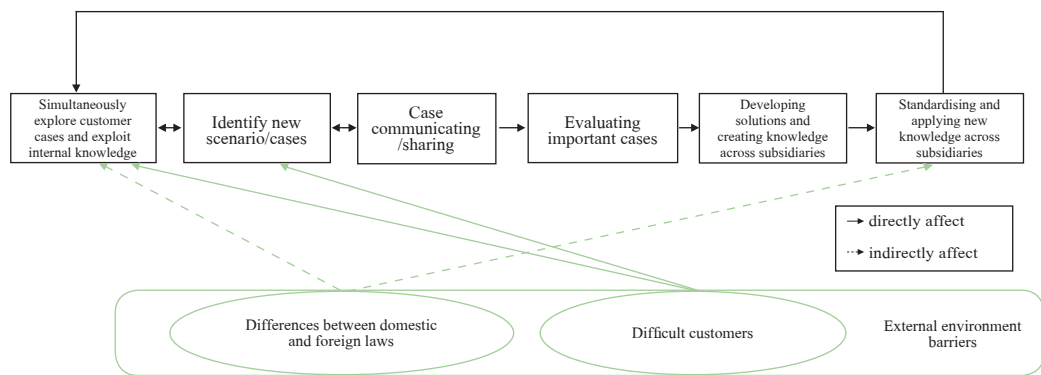


Figure 10: External environment barriers in relations with service firm's absorptive capacity

Discussion

Theoretical implications

1. Towards absorptive capacity process

Based on my empirical findings, I contribute several new insights to the absorptive capacity literature. First, this study has introduced six dimensions/stages of absorptive capacity process within the service firm, which differs from the previous studies (e.g. Cohen and Levinthal, 1990; Todorova and Durisin, 2007; Zahra and George, 2002) and consists of the highest number of processes so far. Interestingly, due to the nature of the service firm being highly involved with tacit knowledge, its absorptive capacity process is hence more complex and integrates the individual-level and firm-level together, as well as the linking mechanism between both levels. This process has allowed me to address two gaps within the existing absorptive capacity literature, first highlighted by Lane et al. (2006), Lewin et al. (2011) and Volberda et al.

(2010); namely, that the absorptive capacity studies had focused only on research-intensive firms and technological knowledge. Secondly, there was scarce empirical evidence regarding individual-level absorptive capacity and how it links with the firm-level proposed by Lane et al. (2006) and Volberda et al. (2010). Notably, my findings aligned with Cohen and Levinthal's seminal paper (1990) in terms of the absorptive capacity being a multi-level construct.

Secondly, the findings from the research setting consider the "case communicating/sharing" both formally and informally as one of the stages in the service firm's absorptive capacity. This is similar to previous studies by Todorova and Durisin (2007) and Zahra and George (2002) in terms of social integration mechanisms, but both studies view it as the organisational antecedent due to their absorptive capacity process constructs being captured only at the firm level. The main reason for including it in the process is because this study is set within the PSF context, which relies heavily

on tacit knowledge. The third stage “*case communicating/sharing*” is hence a mechanism to externalise the tacit knowledge to become an explicit knowledge component and it is also a linking mechanism between individual-level absorptive capacity and firm-level absorptive capacity.

Additionally, the fifth stage “*developing solutions and creating new knowledge across subsidiaries*” indicated that the service firm creates new knowledge by combining new cases/knowledge with existing knowledge (similar to knowledge assimilation), and adds new knowledge without combining the previous knowledge (similar to knowledge transformation). This can strengthen and confirm the arguments of Todorova and Durisin (2007) and Patterson and Ambrosini (2015), who state that knowledge assimilation and transformation are alternative processes and can happen coincidentally rather than being a sequential process, as argued by Zahra and George (2002).

Finally, the empirical findings contribute by finding that the service firm’s absorptive capacity, including the exploitation process (the first and sixth stages in my findings), is path-dependent, which is consistent with Cohen and Levinthal (1990) and Todorova and Durisin (2007). A possible reason to explain this study’s findings is based on the service firm, which is characterised as a reuse-economic PSF as the knowledge-based services provided to the customers are based on the firm’s existing knowledge (e.g.

guidebook), which is cumulatively changed and upgraded over time.

2. Towards barriers to absorptive capacity

The previous studies have researched its antecedents, process and outcome, while theoretical and empirical evidence of the barriers to absorptive capacity – specifically within the service firm – is scarce (Cuervo-Cazurra and Rui, 2017). To bridge this gap, therefore, this research is the first absorptive capacity study that introduces a non-static process point view of barriers in the service firm context. My findings provide a fresh insight on barriers, fully capturing a multi-level absorptive capacity divided into three main layers: individual-level, internal level, and external level.

The analysis of individual-level absorptive capacity introduced several barriers that occur due to differences in individual background and personality. The findings suggest that a “lack of relevant knowledge” is the main barrier that negatively affects several processes of the individual-level absorptive capacity. This barrier seems to correspond with the previous studies in finding that the relevant prior knowledge is the antecedent of firm-level absorptive capacity (Cohen and Levinthal, 1990; Todorova and Durisin, 2007; Zahra and George, 2002). Through the barrier lens, the lack of relevant prior knowledge causes a failure in individual-level absorptive capacity, which

also means a failure at the firm level as well. My findings also contribute two more individual-level barriers to the literature that are “different interpretations of the implications of knowledge”, and “lack of attention” in sharing and updating the knowledge.

Second, from the findings, the “top-down management style” is a barrier, which seems similar to “managerial biases” (Cuervo-Cazurra and Rui, 2017) and internal “power relationships” (Todorova and Durisin, 2007), but unlike managerial bias, which tends to refer to a tendency of the manager to show bias in acquiring certain knowledge sources, the top-down management style provides a broader view as a firm structure that limits lower-level employees’ ability in identifying and sharing new cases to the firm, having similar negative consequences to the internal power relationships argued by Todorova and Durisin (2007). I also highlight the finding that the firm’s existing knowledge source (e.g. guidebook) can itself be a barrier if the inside knowledge cannot be applied by employees. Plus, I assert that “internal control systems” indirectly ruin the service firm’s absorptive capacity since they make employees ignore new knowledge and new case sharing during the meetings.

Third, the findings suggest “differences between domestic and foreign laws” indirectly constrain the service firm’s absorptive capacity since this barrier has led to an inapplicable

guidebook within this subsidiary. Additionally, there are “difficult customers” in terms of non-cooperation with the firm’s policy for providing their information; thus, without the customer cases, the employees are unable to justify how important it is, and ultimately the service firm fails to absorb the outside information.

Managerial implications

This research provides ideas that could be valuable to managers in service firms, particularly reuse-economic PSF. It presents non-static the service firm’s absorptive capacity process point view of barriers; thus, the managers can first visibly realise multiple stages of the service firm’s absorptive capacity rather than they just had visible only the most relevant stages to their position, and secondly need to be aware of and able to overcome the existence of barriers to the service firm’s absorptive capacity in order to maximise this capacity.

With regard to my findings, they can assist the managers to address the problems that the service firm is facing in absorbing new outside knowledge/information, and then the managers can further analyse the cause(s) of such problems and also create appropriate solutions to resolve them. More precisely, the managers can understand that individual-level absorptive capacity and the linking mechanism to the firm level significantly influence the firm-level absorptive capacity. If there is

a problem within the “*evaluating important cases*” stage, the managers can look back and find out the cause from prior processes such as “*case communicating/sharing*” and/or “*identify new scenario/cases*”, so the managers are able to identify the barrier(s) in relations to that stage(s). For example, the managers might observe that the cause of an inability to evaluate important cases is rooted in a lack of case communicating/sharing, so then they can explore in more detail whether the barrier(s) is occurring at the individual level (e.g. “*lack of relevant knowledge*” or “*lack of attention*”) or at the internal level (e.g. “*top-down management style*” and “*internal control systems*”). My findings can also facilitate the managers to notice the cause-effect relationships among the barriers. A good illustration is the finding that internal control systems lead to a lack of attention among employees in sharing new cases; thus, the managers can design the most appropriate solutions to resolve the problems.

Limitations and recommendations for future research

1. The research has studied the PSF, which primarily collect data through the interviews only in a subsidiary. The future research thus can collect the interview data from the service firm across subsidiaries and also headquarter to explore additional barriers in different countries’ environment.

2. The inductive qualitative design are unable to test and validate relationship among the stages of service firm’s absorptive capacity and also between the process and the barriers in my findings. The future research may operationalize this by conducting a quantitative research approach instead. The statistical test could strengthen and validate the relationships among the components of the findings.

3. The single qualitative case study design employed by this research, which specifically concentrated on one type of service firm (reuse-economic PSF). My empirical findings, therefore, may not be able to generalise into other types of the service firm. The future research may work on a single-case or multi-case study approach in other types of service firm such as “expert-economic PSF”, which purely rely on experience-based knowledge, so the absorptive capacity process and barriers may appear differently from my finding.

References

- Alvesson, M. (1993). Organizations as rhetoric: Knowledge-intensive firms and the struggle with ambiguity. *Journal of Management Studies*, 30(6), 997-1015. doi: 10.1111/j.1467-6486.1993.tb00476.x
- Anand, N., Gardner, H., & Morris, T. (2007). Knowledge-based innovation: Emergence and embedding of new practice areas in management consulting firms. *Academy of Management Journal*, 50(2), 406-428. doi: 10.5465/amj.2007.24634457

- Bettencourt, L., Ostrom, A., Brown, S., & Roundtree, R. (2002). Client co-production in knowledge-intensive business services. *California Management Review*, 44(4), 100-128. doi: 10.2307/41166145
- Caligiuri, P. (2014). Many moving parts: Factors influencing the effectiveness of HRM practices designed to improve knowledge transfer within MNCs. *Journal of International Business Studies*, 45(1), 63-72. doi: 10.1057/jibs.2013.52
- Camisón, C., & Forés, B. (2010). Knowledge absorptive capacity: New insights for its conceptualization and measurement. *Journal of Business Research*, 63(7), 707-715. doi: 10.1016/j.jbusres.2009.04.022
- Cohen, W., & Levinthal, D. (1989). Innovation and learning: The two faces of R & D. *The Economic Journal*, 99(397), 569. doi: 10.2307/2233763
- Cohen, W., & Levinthal, D. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 110-129. doi: 10.2307/2393553
- Cuervo-Cazurra, A., & Rui, H. (2017). Barriers to absorptive capacity in emerging market firms. *Journal of World Business*, 6(52), 727-742. doi: 10.1016/j.jwb.2017.06.004
- Ebers, M., & Maurer, I. (2014). Connections count: How relational embeddedness and relational empowerment foster absorptive capacity. *Research Policy*, 43(2), 318-332. doi: 10.1016/j.respol.2013.10.017
- Edmondson, A., & Mcmanus, S. (2007). Methodological fit in management field research. *Academy Of Management Review*, 32(4), 1155-1179. doi: 10.5465/amr.2007.26586086
- Eggers, J., & Kaplan, S. (2009). Cognition and renewal: Comparing CEO and organizational effects on incumbent adaptation to technical change. *Organization Science*, 20(2), 461-477. doi: 10.1287/orsc.1080.0401
- Empson, L. (2001). Fear of exploitation and fear of contamination: Impediments to knowledge transfer in mergers between professional service firms. *Human Relations*, 54(7), 839-862. doi: 10.1177/0018726701547003
- Ganguly A., Talukdar, A., & Chatterjee D. (2019). Social capital, knowledge sharing, and innovation capability: An empirical study of Indian pharmaceutical sector. *Knowledge and Process Management, the Journal of Corporate Transformation*, 27(1), 25-42. doi: 10.1002/kpm.1614
- Gioia, D., Corley, K., & Hamilton, A. (2012). Seeking qualitative rigor in inductive research. *Organizational Research Methods*, 16(1), 15-31. doi: 10.1177/1094428112452151
- Gioia, D., Thomas, J., Clark, S., & Chittipeddi, K. (1994). Symbolism and strategic change in academia: The dynamics of sensemaking and influence. *Organization Science*, 5(3), 363-383. doi: 10.1287/orsc.5.3.363

- Grant, R., & Baden-Fuller, C. (2004). A knowledge accessing theory of strategic alliances. *Journal of Management Studies*, 41(1), 61-84. doi: 10.1111/j.1467-6486.2004.00421.x
- Greenwood, R., & Suddaby, R. (2006). Institutional entrepreneurship in mature fields: The big five accounting firms. *Academy of Management Journal*, 49(1), 27-48. doi: 10.2307/20159744
- Greenwood, R., Hinings, C., & Brown, J. (1990). P2-form strategic management: Corporate practices in professional partnerships. *Academy of Management Journal*, 33(4), 725-755. doi: 10.5465/256288
- Greenwood, R., Li, S., Prakash, R., & Deephouse, D. (2005). Reputation, diversification, and organizational explanations of performance in professional service firms. *Organization Science*, 16(6), 661-673. doi: 10.1287/orsc.1050.0159
- Hansen, M., Nohria, N., & Tierney, T. (1999). What's your strategy for managing knowledge?. *Harvard Business Review*, 77(2), 106-116.
- Jansen, J., Van Den Bosch, F., & Volberda, H. (2005). Managing potential and realized absorptive capacity: How do organizational antecedents matter?. *Academy of Management Journal*, 48(6), 999-1015. doi: 10.5465/AMJ.2005.19573106
- Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, 3(3), 383-397. doi: 10.1287/orsc.3.3.383
- Lane, P., & Lubatkin, M. (1998). Relative absorptive capacity and interorganizational learning. *Strategic Management Journal*, 19(5), 461-477. doi: 10.1002/(SICI)1097-0266(199805)19:5<461::AID-SMJ953>3.0.CO;2-L
- PDFPDFLane, P., Koka, B., & Pathak, S. (2006). The reification of absorptive capacity: A critical review and rejuvenation of the construct. *Academy of Management Review*, 31(4), 833-863. doi: 10.2307/20159255
- Lane, P., Salk, J., & Lyles, M. (2001). Absorptive capacity, learning, and performance in international joint ventures. *Strategic Management Journal*, 22(12), 1139-1161. doi: 10.1002/smj.206
- Lenox, M., & King, A. (2004). Prospects for developing absorptive capacity through internal information provision. *Strategic Management Journal*, 25(4), 331-345. doi: 10.1002/smj.379
- Lewin, A., Massini, S., & Peeters, C. (2011). Microfoundations of internal and external absorptive capacity routines. *Organization Science*, 22(1), 81-98. doi: 10.1287/orsc.1100.0525

- Lichtenthaler, U. (2009). Absorptive capacity, environmental turbulence, and the complementary organizational learning processes. *Academy Of Management Journal*, 52(4), 822-846. doi: 10.5465/amj.2013.3001
- Løwendahl, B. (2005). *Strategic Management of Professional Service Firms* (3rd ed.). Copenhagen: Copenhagen Business School Press.
- Løwendahl, B., Revang, Ø., & Fosstenløyken, S. (2001). Knowledge and value creation in professional service firms: A framework for analysis. *Human Relations*, 54(7), 911-931. doi: 10.1177/0018726701547006
- Matthyssens, P., Pauwels, P., & Vandenbempt, K. (2005). Strategic flexibility, rigidity and barriers to the development of absorptive capacity in business markets: Themes and research perspectives. *Industrial Marketing Management*, 34(6), 547-554. doi: 10.1016/j.indmarman.2005.03.004
- Miles, M., & Huberman, A. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2nd ed.). California: SAGE Publications.
- Mills, P., Chase, R., & Margulies, N. (1983). Motivating the Client/Employee System. *The Academy of Management Review*, 8(2), 301-310. doi: 10.5465/amr.1983.4284740
- Morris, T. (2001). Asserting property rights: knowledge codification in the professional service firm. *Human Relations*, 54(7), 819-838. doi: 10.1177/0018726701547002
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14-37. doi: 10.1287/orsc.5.1.14
- Nonaka, I., & von Krogh, G. (2009). Perspective—tacit knowledge and knowledge conversion: Controversy and advancement in organizational knowledge creation theory. *Organization Science*, 20(3), 635-652. doi: 10.1287/orsc.1080.0412
- Patterson, W., & Ambrosini, V. (2015). Configuring absorptive capacity as a key process for research intensive firms. *Technovation*, (36-37), 77-89. doi: 10.1016/j.technovation.2014.10.003
- Salter, A., Ter Wal, A., Criscuolo, P., & Alexy, O. (2014). Open for ideation: Individual-level openness and idea generation in R&D. *Journal of Product Innovation Management*, 32(4), 488-504. doi: 10.1111/jpim.12214
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students* (5th ed.). Essex: Pearson Education Limited.
- Starbuck, W. (1992). Learning by knowledge-intensive firms*. *Journal of Management Studies*, 29(6), 713-740. doi: 10.1111/j.1467-6486.1992.tb00686.x
- Strauss, A., & Corbin, J. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (2nd ed.). California: SAGE Publications.

- Teece, D. (2003). Expert talent and the design of (professional services) firms. *Industrial and Corporate Change*, 12(4), 895-916. doi: 10.1093/icc/12.4.895
- Teece, D. (2007). Explicating dynamic capabilities: The nature and micro-foundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319-1350. doi: 10.1002/smj.640
- Thompson, J. (1967). *Organizations in Action*, New York: McGraw-Hill.
- Todorova, G., & Durisin, B. (2007). Absorptive capacity: Valuing a reconceptualization. *Academy Of Management Review*, 32(3), 774-786. doi: 10.2307/20159334
- Van den Bosch, F., Volberda, H., & de Boer, M. (1999). Coevolution of firm absorptive capacity and knowledge environment: Organizational forms and combinative capabilities. *Organization Science*, 10(5), 551-568. doi: 10.1287/orsc.10.5.551
- Volberda, H., Foss, N., & Lyles, M. (2010). Perspective-absorbing the concept of absorptive capacity: How to realize its potential in the organization field. *Organization Science*, 21(4), 931-951. doi: 10.1287/orsc.1090.0503
- von Hippel, E. (1998). Economics of product development by users: The impact of "sticky" local information. *Management Science*, 44(5), 629-644. doi: 10.1287/mnsc.44.5.629
- von Nordenflycht, A. (2010). What is a professional service firm? toward a theory and taxonomy of knowledge-intensive firms. *Academy of Management Review*, 35(1), 155-174. doi: 10.5465/amr.35.1.zok155
- Yin, R. K. (2003). *Case Study Research: Design and Methods*. California: SAGE Publications.
- Yin, R. K. (2009). *Case Study Research: Design and Methods* (4th ed.). California: SAGE Publications.
- Zahra, S., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review*, 27(2), 185-200. doi: 10.2307/4134351
- Zapata, R., G., J., & Hernández A., A. (2018). Absorptive capacity: A literature review and a model of its determinants. *Retos Revista de Ciencias de la Administración y Economía*, 8(16), 119-137. doi: 10.17163/ret.n16.2018.09
- Zobel, A. (2016). Benefiting from open Innovation: A multidimensional model of absorptive capacity. *Journal of Product Innovation Management*, 34(3), 269-288. doi: 10.1111/jpim.12361