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# Applying Absorptive Capacity Construct to Customer-related Knowledge Processing

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#### Abstract

The importance of customer-related knowledge as a source of competitive advantage has been addressed by several researchers during the last decade. However, only a little is known about the processes through which firms learn to know their customers organization-wide. In this article we propose that one possibility to study how firms process customer-related knowledge, and thus learn about and from their customers organization-wide, is to apply absorptive capacity construct originally developed in the context of innovation activities. By building on previous literature on absorptive capacity, customer knowledge management and relationship marketing, we introduce a conceptual framework of customer-related absorptive capacity, and discuss the external and internal antecedents to the We propose that customer relationship construct. performance could at least partly be explained by the capability of the supplier firm to acquire, assimilate, transform and exploit customer-related knowledge.

#### Keywords

Absorptive capacity, customer knowledge, customer relationships.

#### 1. INTRODUCTION

The absorptive capacity concept suggests that the ability of an organizational unit to link its knowledge to innovativeness and learn from the external knowledge source depends on the degree of its absorptive capacity [1]-[3]. Although the absorptive capacity construct has been applied in several streams of research, for example in organizational learning, knowledge management, strategic alliances and innovation management [4], it has been less popular among marketing academics. In the marketing literature academics have studied market-based organizational learning [5], but the marketing literature still remains rather silent on the organization-wide learning about specific customers [6]. An increased understanding from this perspective would however be of great managerial interest for example to practitioners struggling with the high number of unsuccessful customer relationship management (CRM) implementations [7]. Moreover, it is suggested by several researchers that customer- specific

learning can create competitive advantage for firms as it helps firms not only to understand their customers better, but also to learn what their customers know [8]-[9]. By improving the level of customer-related knowledge, firms are able to provide and develop products that include added value to the customer. The development of customerrelated knowledge also enhances the ability of the firm to gain competitive advantage, as customer-related knowledge is invisible, and thus, hard for competitors to imitate [10].

This paper is conceptual in nature and examines the applicability of the absorptive capacity construct in the context of customer-related knowledge processing. The paper investigates how the four dimensions of a firm's absorptive capacity: acquisition, assimilation, transformation and exploitation conceptualized by Zahra and George [11] can be applied to examine organization-wide learning about specific customers from the perspective of a supplier firm.

Based on the previous research on absorptive capacity, customer relationships, and customer knowledge management, the paper introduces a framework depicting the elements of customer-related absorptive capacity. We propose that firms can gain great synergies if they have capabilities for acquiring, assimilating and transforming customer-related knowledge organization-wide and also capabilities for exploiting the knowledge in their customer value creation processes. Thus, the better the firm is able to leverage its customer-related knowledge assets; that is the knowledge about and from their customers, the better it is able to provide added value to the customer, and thus, more likely to achieve competitive advantage. We propose therefore that customer-related absorptive capacity may at least partly explain customer relationship performance. However, in accordance to the conceptualization by Zahra and George [11] we recognize that the capabilities of firms to leverage their knowledge bases differ, and thus also the ratio between potential and realized absorptive capacity differs.

#### 2. ABSORPTIVE CAPACITY - LITERATURE REVIEW

The concept of absorptive capacity was introduced by Cohen and Levinthal [1] in the context of innovation activities and R & D. They defined it as the "*ability to*  recognize the value of new information, assimilate it, and apply it to commercial ends". The absorptive capacity of the firm is a path-dependent construct, which builds on its prior knowledge base and the intensity of effort, thus determining the ability of the firm to acquire new knowledge [1,12-13]. Absorptive capacity has been proposed as a critical factor in innovation process of the firm [1,3], and therefore as a potential source of competitive advantage in the dynamic markets [14]. Since the seminal work by Cohen and Levinthal [1] also other definitions for absorptive capacity have been provided. Kim [15] has referred to absorptive capacity as the capacity to learn and solve problems. Zahra and George [11] on the other hand have proposed that absorptive capacity is a fourdimensional construct consisting of acquisition, assimilation, transformation and exploitation of knowledge. They also distinguish between potential and realized absorptive capacities, and state that realized absorptive capacity is the primary source of performance improvements. Another categorization of the construct by Lane, Salk and Lyles [12] divides it into the ability to understand, assimilate and apply external knowledge. Compared to Zahra and George [11] above, this categorization does not open the processes inside the organization in as much detail, and does not accentuate the active role of the organization in acquiring the knowledge.

Originally in the absorptive capacity stream of research, the unit of analysis has been the 'innovating unit', be it the firm or a subsidiary. For example, Cohen and Levinthal [1] have focused on the firm level but yet, acknowledged that there is also a need to focus on the communication among the sub-units in order to fully understand the absorptive capacity construct. The original operationalization of the concept was in the form of R & D intensity (also used by e.g. Stock, Greis and Fischer [16]), but since the birth of the concept, it has also been operationalized and used as a dyad-level construct, *relative absorptive capacity*, in the context of interorganizational learning [17].

During the last decade absorptive capacity has become a widely used concept among academicians. It has been applied for example in studies related to technology transfer [18-19], international expansion of a firm [20], new product development [16], and customer relationship management (CRM) [21]. For the purposes of this paper, the studies done in the context of acquisition, transfer and exploitation of knowledge are especially interesting. Absorptive capacity has become a widely used construct for example in studies related to knowledge transfer within multinational corporations [2-3, 22-24]. In these studies the positive linkage between absorptive capacity and knowledge transfer has become well established [2, 25], but it has however been found that the organizational units may also differ in their ability to manage potential and realized absorptive capacity [26, 11]. Although it has been generally acknowledged that the competitive advantage of a multinational firm derives from its ability to create and transfer knowledge internally [27], these studies indicate that the transfer of best-practices or knowledge does not

happen automatically, as the different units within multinational corporations have different kind of abilities for learning from other units. Moreover, knowledge has also been characterized as "sticky" meaning that it is difficult to transfer across organizational units [25].

Absorptive capacity has also been studied in interorganizational interface focusing on international joint ventures [17, 12, 28]. In this stream of research Lyles and Salk [28] found that the more the company learns knowledge from the foreign partner, the better the performance of the joint venture. Moreover, it is proposed by Lane, Salk and Lyles [12] that inter-organizational trust has an important role in the absorptive capacity because it drives the 'teacher firm' to help the 'student firm' to understand the knowledge that it is offering to the student. In studies from inter-organizational perspectives it is thus recognized that the counter-part in the dyad may either inhibit or impede the absorptive capacity of the knowledge absorbing party.

#### 3. A CONCEPTUAL FRAMEWORK OF CUSTOMER-RELATED ABSORPTIVE CAPACITY

Based on the previous literature on customer knowledge management [6, 8-9] we assume that there is a positive relationship between customer-related knowledge processing and customer relationship performance. However, in order to examine more deeply how firms process customer-related knowledge, and how they learn to know their customers organization-wide, a systematic description of the intra-organizational learning processes is needed. By building on the absorptive capacity conceptualization by Zahra and George [11] we propose a conceptual framework (figure 1) where customer-related absorptive capacity consists of a capability of the firm to acquire knowledge from and about the customer via multiple channels (acquisition), a capability to interpret the knowledge based on the previous customer-related knowledge structures (assimilation), a capability to integrate the knowledge within the firm so that new value creating offerings to the customer can be developed (transformation), and finally, a capability to develop own internal competencies based on the new customer-related knowledge and capability to provide added value to the In accordance to Zahra and customer (exploitation). George [11] it is also suggested that the customer-related absorptive capacity can be characterized either as potential' or 'realized'. In the context of customer relationship management this could imply that many firms are good at generating customer-related knowledge but few have competence to make use of it as argued by Campbell [6]. Customer relationship performance in our study refers to customer profitability, customer satisfaction and increase in customer-specific sales. Before proceeding to the main dimensions of customer-related absorptive capacity, we firstly discuss the antecedents to the customer-related absorptive capacity in the following section.

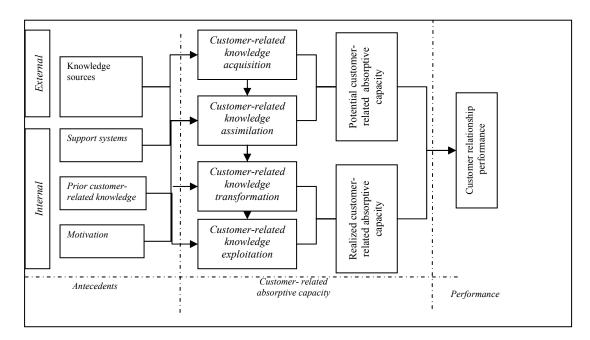


Figure 1. A framework of customer-related absorptive capacity

## 3.1. Antecedents to customer-related absorptive capacity

Despite the vast amount of literature on absorptive capacity in different streams of academic research, the focus in research has only recently started to shift from studying the impact of absorptive capacity on knowledge transfer to the factors that drive the development of the absorptive capacity in the first place. Based on a recent literature we propose that the antecedents to customerrelated absorptive capacity are either internal or external to the focal firm. The external antecedents refer to the sources of knowledge. The internal antecedents refer firstly, to the past experience as proposed by Zahra and George [11], secondly, to the motivation of employees to absorb new knowledge as proposed by Minbaeva et al. [24], and thirdly, to the support systems implemented to improve customer-related knowledge processing. In the following, the relevancy of each antecedent for the customer-related absorptive capacity is each separately discussed.

#### 3.1.1. External antecedents

#### Knowledge sources

The external knowledge sources reflect the degree to which the firm is exposed to new knowledge. It is suggested by Zahra and George [11] that the diversity of knowledge the exposure, and the degree of complementarity between the firm's existing knowledge and knowledge from the external source, both have a positive effect on the development of the absorptive capacity. Moreover, as 'customer-related' means that we are discussing specific customers, the customer itself has an effect on the absorptive capacity of the supplying unit. Therefore, in accordance to the findings by Lane, Salk and

Lyles [12], it is suggested that the counter-party, in this case the customer, can either impede or enhance the absorptive capacity of the supplier firm. Moreover, Gupta and Govindarajan [2] argue that the similarity of personal characteristics, social characteristics and language between the knowledge source and the receiver has a positive impact on the development of absorptive capacity. These propositions imply that a pure exposure to diverse external knowledge may not yet guarantee a development of absorptive capacity. The knowledge from the external source must be related to the existing knowledge base of the firm.

Firms can become exposed to customer-related knowledge through several sources. These sources can be either indirect, such as competitors and other interest groups other than the customer itself, or direct, the customer. Furthermore, direct customer knowledge can be acquired from transactions or from interactions with the customer [8]. It is argued by García-Murillo and Annabi [8] that interactions produce knowledge that is richer in content compared to transactional knowledge, which concerns for example customer preferences and purchasing activity of the customer. Customer interactions provide much higher quality knowledge because through these interactions it is possible for the firm to gain knowledge on what the customer knows [9]. The more complex the customer relationships, and thus the more contact points between the buyer and the seller, the more knowledge sources there are through which the customer-related knowledge can be absorbed.

#### 3.1.2. Internal antecedents

#### Prior knowledge structures

As new knowledge builds on the existing knowledge structures, it would not be possible to identify relevant new knowledge without prior related knowledge [29]. If the prior knowledge base is limited, the firm may end up at distributing widely every little piece of new information [5], thus easily leading to an information over-load. Moreover, the path-dependent nature of the absorptive capacity [1] implies how firms end up in following different paths and developing their competencies into a certain direction, possibly ending up in a competency trap.

In general however, prior customer-related knowledge structures, and previous experience of the relationship help firms to recognize the relevant new customer-related knowledge. Prior customer-related knowledge thus provides the basis for future value creation opportunities for the customer.

#### Motivation of the employees

As the absorptive capacity of an organization or organizational unit consists of the absorptive capacities of its individual members [1], the absorptive capacity can be developed by enhancing the absorptive capacities of each individual employees. According to Minbaeva et al. [24], employees can be motivated to absorb knowledge more effectively. This could happen by investing in human resource management (HRM) practices, such as employee training or performance-bound incentives, that support the ability and motivation of the employees to absorb knowledge, and by creating an environment that enhances frequent communication and knowledge sharing [26, 23]. In this sense traditional functional organization structures have been found inefficient because they tend to increase specialization, and thus, create barriers for internal communication [14].

Following the arguments by Minbaeva [24], we suggest that the development of customer-related absorptive capacity depends on the motivation of each individual involved in the management of the relationship to absorb customer-related knowledge. The motivation to absorb customer-related knowledge is closely related to the organisational culture and top-management support that further affect the way employees regard customer relationships [10], and the way they desire to learn about specific customers [30]. Front-line salespersons have an important role in the absorbtion of customer-related knowledge because they have the access to customer interactions. They have thus an access to the knowledge that the customer holds, and thus their motivation should be the number one interest for the managers.

#### Support systems

Capabilities of a firm to absorb customer-related knowledge are also driven by the organizational support systems such as (CRM) -software. CRM software enhances the development of the customer-related absorptive capacity because it extends the amount of customer -related knowledge sources the firm is able to handle. The software also functions as a knowledge repository or "memory" where the customer-related knowledge can easily be stored for further analysis. CRM-software can be used to analyze, process and integrate customer-related knowledge from various sources, either secondary or primary. Although many firms have failed in implementing CRM effectively, recent research findings by Mithas, Krishnan and Fornell [31] show that CRM software can also have positive effect on performance if the customer is willing to share information.

#### 3.2. Dimensions of customer-related absorptive capacity

In the following section we discuss the main dimensions of customer-related absorptive capacity and illustrate the difference between realized customer-related absorptive capacity and potential customer-related absorptive capacity.

#### Acquisition of customer-related knowledge

For the marketing academics, the externally generated knowledge critical to operations may refer either to the knowledge about the markets (that is customer, competitors, industry), or knowledge about the specific customers, when the aim is to develop and enhance specific customer relationships. In the marketing literature, the acquisition of knowledge has been traditionally referred to as an important function in a market-oriented company [32-33], and a positive relation between the intelligence generation and customer value has been proposed [33]. It has also been identified as an essential input in new product development [34]. Along with the shift from transactional orientation of marketing to relational orientation, the emphasis has shifted towards knowledge generation for the purposes of enhancing specific customer relationships [10, 35]. The acquisition of customer knowledge for purposes of relationship marketing differs from the traditional market information processes conceptualized by Kohli and Jaworski [32] as the purpose of relationship marketing is to develop specific customer relationships and "create loyal customer so that a stable mutually profitable and long-term relationship is enhanced" [36]. Thus, instead of gathering information of a "faceless market", relationship marketing aims at learning about specific customers [37].

Customer-related knowledge is typically acquired through multiple channels, be it IT solutions or personal contacts between the sales persons and representatives of the customer [35]. When operating in an international environment, customer-related knowledge must also be acquired in a number of different geographical locations, thus adding a contextual nature to the customer-related knowledge. The quicker the company is able to acquire customer-related knowledge through the multiple channels and multiple markets, the quicker the firm is able to answer to customer-specific needs.

#### Assimilation of customer-related knowledge

Zahra and George [11] define assimilation as "firm's routines and processes that allow it to analyze, process, interpret, and understand the information obtained from external sources". Information technologies such as CRM systems are effective tools in analyzing and processing customer-related knowledge. Interpretation and understanding are however always human activities that can be improved for example by increasing the number of informal meetings and communication between the personnel involved in the management of customer relationships. This implies that true customer knowledge competence cannot be achieved by relying completely on information processing technologies as suggested by Campbell [6].

Assimilation of the new knowledge is important because without it, the knowledge cannot be disseminated to other parts in the organization and existing knowledge bases cannot be renewed. Thus, assimilation capabilities are required to make sense of the externally acquired customerrelated knowledge and to integrate this knowledge so that consistent value-adding strategies can be developed for the customer [6]. Assimilation capabilities are extremely important when customer relationships are geographically extensive and involve multiple contact points between the customer and the supplier. In such case, assimilation capabilities are needed to avoid contradictory service offerings to the same customer. As there is an increasing tendency of customers to demand coordinated service from their suppliers [38], we propose that the better the capabilities of the firm to analyze, process, interpret and understand the customer-related knowledge, the better the customer relationship performance.

#### Transformation of customer-related knowledge

Transformation dimension of absorptive capacity refers to the capabilities that facilitate the renewing of existing knowledge bases based on the new acquired and assimilated knowledge. Thus, as a result of transformation, firms may be able to see important matters in a different light, and they may have to change their dominant perceptions. As Zahra and George [11] put it: "it yields new insights, facilitates the recognition of opportunities, and, at the same time, alters the way the firm sees itself and its competitive landscape". Transformation capabilities allow organizational renewal, and are thus closely connected to strategy development processes. At the customer level this means that transformation capabilities help firms for example to recognize new value creation opportunities to the customer, and to develop value-adding customer relationship strategies, to define new possibilities for increasing customer integration, and to discover improvement areas in own day-to-day customer service processes.

#### Exploitation of customer-related knowledge

According to Jayachandran et al. [35] the major impetus for companies to generate customer knowledge is to learn about customer needs and behaviors and as a consequence,

to develop customer specific products and services. The ability to create value to the customer may lead to the competitive advantage of the firm [39], and reduction in costs [40] as the customer will most likely to continue buying from the supplier that is capable for providing highest degree of added value. Thus, the last dimension of the customer-related absorptive capacity, exploitation, is perhaps the most important one as it describes the capability of the firm to exploit the customer-related knowledge in the customer value creation for example in terms of new products and services. This is also the dimension that allows the firm to leverage the existing competencies or to develop new competencies. As such, it is also the most challenging stage as many firms have been found to be better at acquiring knowledge than actually utilizing it [6].

### Potential and realized customer-related absorptive capacity

Zahra and George [11] suggest that absorptive capacity can be either potential or realized. Potential absorptive capacity consists of acquisition and assimilation capabilities, and realized absorptive capacity consist of transformation and exploitation capabilities. They also suggest that both components of absorptive capacity "fulfill a necessary but insufficient condition to improve firm performance". This means that firms are not able to exploit knowledge unless they firstly acquire and assimilate it. On the contrary, acquisition and assimilation of knowledge does not yet guarantee improvement in performance, whereas realized absorptive capacity has been proposed as a primary source of performance improvement [11]. In addition to the path-dependent nature of absorptive capacity emphasized by Cohen and Levinthal [1], the distinction between potential and realized absorptive capacity provides an additional explanation for why some firms are so much better in leveraging their customer-related knowledge bases. It is therefore important for firms to recognize whether their capabilities to absorb customer-related knowledge differ from the competitors, and whether the firm is better at developing potential than realized customer-related absorptive capacity. The degree to which managerial activities should be directed to nurturing the development of potential versus realized absorptive capacity depends also on the competitive environment. For example Jansen, van den Bosch and Volderba [26] have suggested that firms should pay special attention on the nurturing of potential absorptive capacity when the markets are dynamic. This implies that when the markets and customer base is under constant change, firms should remain more receptive to diversity of customer-related knowledge sources.

#### 4. DISCUSSION AND LIMITATIONS

This study depicts a framework which can be applied to studying organization-wide learning about specific customers. It thus increases our understanding on the capabilities of firms to learn about and from their customers organization-wide. In general, the paper concentrates on the intra-organizational determinants of effective customer knowledge processing, which is a very highly neglected area in marketing research [6]. It is proposed in this study that the performance of customer relationships could be at least partly explained by the capabilities of supplier firms to acquire, assimilate, transform and exploit customer-related knowledge.

In this study absorptive capacity construct has been studied from the perspective of a supplier firm serving specific customers. This means that in our framework the target of knowledge exploitation is a specific customer relationship. It should however be noted that firms may exploit customer-related knowledge for other purposes as well, for example to develop relationships with new potential customers. On the contrary, by acquiring knowledge about and from new customers, firms may be able to sense new opportunities and to apply this knowledge in the development of the existing customer relationships. This means that firms must hold on to knowledge diversity and aim at holistic understanding of the competitive environment. Diversity of knowledge is especially important in the rapidly changing market environment because it increases the probability that new knowledge is related to the prior knowledge the firm has [1]. Moreover, in the rapidly changing markets, the responsibility of customer-related knowledge acquisition should be a decentralized responsibility because one person alone does not have the capacity to keep track on continuous changes. In this sense, an increase in the level of cross-functional cooperation could provide significant advantages.

Although absorptive capacity construct has been developed for studying phenomena in R&D management context, we propose that the construct is applicable also in the context of customer-related knowledge processing. Customer knowledge is after all an external knowledge source the same way than any other knowledge. However, it should be noted that as firms organize their processes and activities for serving customers in a specific manner, depending for example on the size of the customer, the routines and activities through which customer knowledge is processed in the organizations are different from the routines and activities used to process other type of knowledge. This should be taken into consideration when operationalizing the capabilities that constitute customerrelated absorptive capacity.

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