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Organizational Forgetting/Unlearning: The Dark Side of the Absorptive Capacity

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1. Introduction

During the past twenty years, absorptive capacity has become one of the constructs most widely used in diverse lines of work on the subject of organisational research. Initially, Cohen & Levinthal (1998,1990) defined absorptive capacity as the ability of a company to recognise the value of knowledge from the environment, assimilate it and exploit it for commercial purposes, with its development being a critical factor in obtaining a competitive advantage.

The enormous potential for explanation of the construct (Lane et al., 2002) has led to its use in more than one thousand publications indexed in research lines as organisational learning (Simonin, 1999; Barkema & Vermeulen, 1998), knowledge management (Szulanski, 1996; Ahuja & Katila, 2001), strategic alliances (Lane & Lubatkin, 1998; Lane et al., 2001) and innovation management (Kim & Kogut, 1996; Van den Bosch et al., 1999).

The application of the absorptive capacity in different, important, complex organisational phenomena has given rise to the use of diverse measures which are not clearly seen to converge in the same construct (Zahra & George, 2002). This has led some investigators to try and reconceptualise the construct absorptive capacity (Zahra & George, 2002; Lane et al.; 2002; Van den Bosch et al., 2003; Fernández, 2005; Lane et al., 2006), obtaining similar results which offer a new starting point for conducting research into the construct. These publications propose various lines of research about how to study the construction of a sustainable competitive advantage through possessing absorptive capacity. However, in our opinion, investigating the absorptive capacity of a company is merely a part of this research, for which reason, we postulate that research into the development and maintenance of absorptive capacity is equally important as investigating the causes and circumstances involved in the loss of this capacity.

Based on the above publications, this study establishes a working framework for including organisational forgetting or loss in the study of absorptive capacity and the creation of competitive advantages. Specific reference has been made to the concept of organisational forgetting, loss or unlearning by a small group of academics (Prahalad & Bettis, 1986; Nystrom & Starbuck, 1984; Martin de Holan & Phillips, 2003), in most cases, without it being the main subject of the research. This investigation also uses as a starting point the studies conducted by Martin de Holan & Phillips (2003, 2004) and Fernandez & Sune (2009) investigating how and why organisational forgetting occurs.

The theoretical contribution made by this document is to establish a set of guidelines for research into organisational forgetting/unlearning, in order to lay down a path for creating a solid, consistent basis of knowledge about absorptive capacity.

2. Review of literature

The review of literature is divided into two parts: a compilation of the main advances made in the absorptive capacity construct over the past twenty years and an introduction to organisational unlearning and forgetting processes.

2.1 Absorptive capacity

Acknowledgement of the importance of external flows of knowledge to companies has been a constant phenomenon in innovation processes during the past twenty years (Rigby & Zook, 2002). According to Cohen & Levinthal (1990) "external sources of knowledge are often critical in the innovation process on all organisational levels in which the unity of innovation is defined". With a view to studying the importance of that knowledge, Cohen & Levinthal (1989, 1990) introduced the absorptive capacity construct, which refers to the ability of a company to identify, assimilate and exploit knowledge from external sources for commercial purposes. One of the most important contributions made by Cohen & Levinthal was the integration into a single construct of diverse internal company processes in the creation of sustainable competitive advantages, through knowledge obtained from the environment (Zahra & George, 2002).

The widespread use of absorptive capacity has been studied and investigated on several occasions, as shown in the works of Zahra & George (2002), Lane et al. (2002) and Van den Bosch et al. (2003). These publications describe the importance of absorptive capacity in many different fields, including investment in R&D (Cohen & Levinthal, 1998), basic research activities in companies (Rosenberg, 1990; Dyer & Singh, 1998), strategic management (Lane & Lubatkin, 1998; Nahapiet & Ghosghal, 1998), technological management (Schilling, 1998; Mowery et al., 1996; Prager & Omenn, 1980), international business (Kedia & Bhagat, 1988), cooperation with scientists from outside the company (Cockburn & Henderson, 1998; Zucker et al., 1994, 1998, 2002; Gambardella, 1992), organisational economies (Glass & Saggi, 1998), trust and compatibility between acquired companies (Lane et al., 2001), employee skills (Vinding, 2006) and innovation (Fabrizio, 2009). Nonetheless, the ambiguity and diversity of the definitions used to describe absorptive capacity has given rise to different results and an unstable scientific basis for the construct (Zahra & George, 2002).

Lane et al. (2002) carried out a thematic study on research into the absorptive capacity construct. This study identified three publications that would have reviewed and expanded the original definition of the construct established by Cohen & Levinthal (1990). According to this research, the first academics to do this were Lane & Lubatkin, in 1998. The first noticeable difference in reconstructing the construct was a change in the analysis unit from the organisation to the relationship between two organisations. In the study by Lane & Lubatkin (1998), the notion of relative absorptive capacity is developed and it is proposed that the absorptive capacity of a company (receiver) in relation to another (emitter) depends on three factors: the type of new knowledge offered by the emitting company, the similarity between the compensation practices and organisational structures of the emitting and receiving companies and to what extent the receiving company is familiar with the organisational problems of the emitting company.

Another enlargement to the definition of absorptive capacity was introduced by Van den Bosch et al. (1999), with new aspects related to the company environment being introduced which allowed for the construct to be better understood. According to these authors, the absorptive capacity of a company generates an internal learning process which is later transformed into a new absorptive capacity. This way, feedback is established between the internal learning and the development of the absorptive capacity, which is conditioned by the type of environment in which the company competes.

The following reconceptualisation of the construct results from the research conducted by Zahra & George (2002). It defines absorptive capacity as a set of organisational routines and strategic processes through which companies acquire, assimilate, transform and use knowledge with the aim of creating value. In this case, the definition attempts to give more emphasis to dynamic capacities (Teece et al., 1997) which are oriented at strategic changes and flexibility. The redefinition of the construct by Zahra & George (2002) involves a change in the classic absorptive model formed by the acquisition, assimilation and exploitation dimensions (Cohen & Levinthal; 1990) towards a model to which the knowledge transformation dimension is added. According to the authors, these dimensions can be grouped into two components, depending on the extent to which they contribute to creating a competitive advantage (Zahra & George, 2002): potential absorptive capacity (acquisition and assimilation of knowledge from external sources) and realized absorptive capacity (transformation and exploitation of knowledge from external sources). Adopting a similar approach, Lane et al. (2006) discerned the learning process of exploration, transformation and exploitation, meaning that the classic focus on knowledge exploration processes (Lichtenthaler, 2009) was unable to guarantee the successful marketing of that knowledge without the appropriate knowledge exploitation processes.

	Potential absorptive capacity		Realized absorptive capacity
Phase 1	Acquisition	Phase 3	Transformation
Phase 2	Assimilation	Phase 4	Exploitation

Table 1. Dimensions of absorptive capacity, according to Zahra and George (2002)

In 2005, Fernandez conducted a study in which he analysed a selection of thirty publications on studied absorptive capacity that had caused an important impact on the scientific community. The result of the study was that Fernández was able to identify two limitations in the scientific studies published to date, which should be taken into account in future research into the construct. Firstly, the lack of a consistent, common basis between studies conducted into the construct, despite the fact that abundant literature exists about absorptive capacity (Zahra & George, 2002). This led to the final results of several studies being contradictory (Example: Tsai (2001) and Mowery et al. (1996)). Secondly, most studies are focused on studying absorptive capacity in R+D-intensive environments. Furthermore, very few investigators had studied the construct in relation to types of knowledge other than technological, as was the case of Lyles & Salk (1996). Although some studies emphasise the difficulties of separating the innovation process from absorptive capacity, the study by

Escribano et al. (2009) reveals the moderating effect of absorptive capacity on innovation processes in organisations.

2.2 Forgetting and unlearning of organisational knowledge

The knowledge-based approach (Barney, 1996) proposes that organisational knowledge represents the most critical intangible course in modern organisations (Nissen, 2005) since it is the principal source of sustainable differentiation capable of providing a competitive advantage (Dierickx & Cool, 1989; Lippman & Rumelt, 1982). This type of knowledge may be conceptualised through stocks of knowledge and knowledge or information flows (Dierick & Cool, 1989; DeCarolis & Deeds, 1999) and arises, in part, from some previous studies into the processing of information and organisational design. Since that time, both elements (stocks and flows of knowledge) have been the main topic in a large number of research lines such as the approach based on resources (Barney, 2001), capacities (Eisenhardt & Martin, 2000; Kogut & Zander, 1996), information view of NPD (Ancona & Caldwell, 1992) and organisational learning (Bontis et al., 2002; Huber, 1991).

Stocks of knowledge are described as the accumulation of knowledge assets existing within a company, while knowledge flows represent the streams of knowledge produced between different parts of the company or between external agents and the company which can be assimilated and transformed into stocks of knowledge (DeCarolis & Deeds, 1999). Knowledge flows have been classified based on three criteria:

- horizontal and vertical, i.e., knowledge that flows between units on the same level or between units on different levels within the company (Gupta & Govindarajan, 2000 ; Schulz, 2001),
- internal and external, i.e., knowledge that flows between units from the same company or between different companies (Kyriakopoulos & Ruyter, 2004), and
- incoming and outgoing, i.e., knowledge that flows towards a particular unit or from a particular unit (Gupta & Govindarajan, 2000).

Dierickx & Cool (1989) introduce a different classification of knowledge flows through the "bath-tub" metaphor. Based on this example, the stock of water is indicated by the level of water in the tub, and its level depends on the extra flows of water into the tub (through the tap) and the water lost from it (through a leak). Using this metaphor, Dierickx & Cool (1989) propose that a company's stock of knowledge may be increased through extra flows of knowledge or decreased or be reduced or lost through reduced flows of knowledge or organisational forgetting flows.

As commented above, stocks and flows of knowledge have been considered the main topic of organisational learning during recent decades. In this case, academics have focused their research on how, when and why organisational knowledge is created, acquired and managed. However, the organisational learning process is just part of a whole. According to Martin de Holan & Phillips (2004), the organisational forgetting process is just as important as the organisational learning process in achieving a sustainable competitive advantage. Research into organisational learning must be completed with information about how and under what circumstances companies forget, unlearn or lose organisational knowledge.

Organisational forgetting can be defined as the voluntary or non-voluntary loss of organisational knowledge on any level (Martin de Holan & Phillips, 2003). Although the study of organisational forgetting is a topic of little interest, some investigators have studied it in recent years (including Nystrom & Starbuck (198) and Starbuck (1996)). Nonetheless,

most of these studies have dealt with organisational forgetting as a complement to the main subject of the research, or as an important aspect to be considered, but without analysing in any depth the circumstances in which it arises or how it arises. Recently, new research has been published which have attempted to treat organisational forgetting as the main subject (Lei et al., 1999; Martin de Holan & Phillips, 2004), but very few of them do so in an empirical way.

A review of literature shows that organisational forgetting has mainly been investigated from two standpoints (Martin de Holan & Phillips, 2004). Some studies consider organisational forgetting as the previous step to organisational learning. This standpoint proposes that certain routines, rules, tasks, roles, policies, values or strategies must be forgotten in order to acquire and assimilate new organisational knowledge through new routines, rules, tasks, roles, policies, values or strategies. Bateson (2000) postulates that organisational learning may be acquired on three different levels. For each one, Bateson implicitly proposes the need to implement a different organisational forgetting process. According to his research, level-one learning means "forgetting" actions or routines that were executed up to that time, in order to begin learning new actions or routines. Level-two learning involves "forgetting" certain rules, policies or strategies in order to implement a new learning process. Lastly, level-three learning refers to a change in the way of generating interpretations, i.e., a change in the mental model. Similarly, Argyris & Schöen (1974) propose a model comprised of two types of learning, in which an organisational forgetting process implicitly takes place. The first type is single loop learning and coincides with the level one learning of Bateson (2000). The second is known as double loop learning and is equivalent to the type two and three learning processes proposed by Bateson (2000). Regarding organisational forgetting in mental models, Prahalad & Bettis (1986) explain that the dominant logic of an organisation may act like a learning filter or barrier and so certain types of high-level learning require a change (and forgetting) in the organisation's dominant logic.

As opposed to the controlled and voluntary forgetting processes described in the preceding section, other researchers have studies accidental or undesired organisational forgetting (Argote et al., 1990; Dar et al., 1995; Epple et al., 1991). These studies are focused on the deterioration of knowledge in the organisational memory (Olivera, 2000) and in the existing control mechanisms for preventing this. According to Argote (1999), this type of organisational forgetting leads to extremely negative consequences on productivity and competitiveness, for which reason it must be prevented. This is shown explicitly in publications about organisational learning (Martin de Holan & Phillips, 2003), but no detailed studies have been conducted into the causes of accidental organisational forgetting processes.

	New knowledge	Established knowledge
Accidental	Dissipation	Degradation
Intentional	Suspension	Elimination

Table 2. Organisational forgetting modes, according to Martin de Holan & Phillips (2004)

Based on the two standpoints on forgetting set out above, Martin de Holan & Phillips (2004) have developed a theory about organisational forgetting, discussing its role in the dynamics of organisational knowledge within organisations and presenting a general classification of types of organisational forgetting processes. Based on this study, the authors propose a change in the approach of the scientific community to organisational forgetting, converting the classic approach which assumes that forgetting is a simple function, dependent on time and on use, into a much more complex process. Table 2 shows the types of organisational forgetting proposed by Martin de Holan & Phillips (2004), which are based on the two approaches mentioned above.

	Intentional	Unintentional
Codified	Internal innovation Obsolescence of knowledge	External innovation Loss of a knowledge repository
Non-codified	Internal innovation	External innovation Persons who embody the knowledge leave the organisation Low frequency of use

Table 3. Causes of organisational forgetting, according to Fernandez & Sune (2009)

The latest significant contribution to the subject of organisational forgetting and unlearning was made by Fernandez & Sune (2009) who presented a new classification of these processes (see table 3) that is totally compatible with the one proposed by Martin de Holan & Phillips (2004). According to their results, they concluded that forgetting is closely related to innovation. When innovation is internal, the type of forgetting generated will be intentional, since the specific purpose of innovation is to abandon the use of prior knowledge. When innovation is external, the type of forgetting generated will be unintentional. This is the case with a type of innovation that is not managed internally by the unit of analysis, but instead imposed from outside. With respect to unintentional forgetting, it should be highlighted that this involves the unwanted loss of a stock of knowledge by the unit of analysis; in such instances, the aim is to minimise its impact. In addition to innovation, the loss of the knowledge repository and the infrequent use of knowledge are identified as other causes of unintentional forgetting. The nature of the knowledge repository will differ, depending on whether the stock of knowledge is codified (e.g. computer file, written document, etc.) or non-codified (e.g. employees, organisational routines, etc.). The third cause of the unintentional forgetting of non-codified knowledge is its infrequent use.

3. Development of a working framework on organisational forgetting/unlearning

For the purpose of developing a working framework for conducting research into organisational forgetting or loss in studying absorptive capacity, an attempt is made to identify and describe the different organisational elements that could become deteriorated or unlearned which are linked to the absorptive capacity construct, in order to subsequently highlight them and analyse them within their own context.

Convington (1981) classifies the content of organisational memory in terms of the semantic value of the knowledge itself. Among the different classification methods proposed by Convington (1981), the one based on regulatory orientation (descriptive and prescriptive) has been widely accepted and used by the scientific community, as shown by the large number of researchers who have used it during the past decades (Stein, 1995). The content of descriptive organisational memory represents the actual classes that provide frameworks of action with which persons must work, such as technical and scientific knowledge, job descriptions within a company, inputs and outputs and events occurring in organisations (Stein, 1989). Descriptive knowledge is an approximation to the formal knowledge of a discipline as it describes things in the form of rules, abstract concepts and general principles. Descriptive knowledge is usually expressed in formal terms and stored in the organisational memory in the form of physical documents, such as databases and written documents.
The content of prescriptive organisational memory represents the actions that must be carried out to achieve the results expected by the organisation. This type of knowledge is the result of an internal evolution within the organisation, with a view to achieving greater efficiency in its procedures. Prescriptive knowledge is usually much more difficult to codify than descriptive knowledge, and is also not very susceptible to generalisations, unlike what occurs with descriptive knowledge. This type of organisational knowledge (prescriptive) is targeted as more operative issues, and is therefore expressed in the form of policies, strategies, rules, guidelines, etc.

3.1 Descriptive organisational knowledge

Descriptive knowledge is characterised in that it describes objects, situations, theories, technologies and other elements used within an organisation. It is also commonly expressed in formal terms (Stein, 1995). A study on literature written about absorptive capacity (Fernandez, 2005) says that most researchers consider absorptive capacity to be a skill related mainly to the acquisition of technical and scientific knowledge (descriptive knowledge), leaving out other types of descriptive knowledge and prescriptive knowledge.
Continuing with the classification proposed by Martin de Holan & Phillips (2004), descriptive knowledge and more specifically, technical and scientific knowledge, may be subject to organisational forgetting through four channels. Based on the three-dimension absorptive capacity model, the organisational forgetting dissipation mode is related to knowledge acquisition and assimilation processes. Little is known about the causes and conditions in which such losses occur, as they have only been studied indirectly in research into knowledge acquisition and transfer (Martin de Holan & Phillips, 1998). Due to the lack of difficulty in their codification and storage in the form of database or written documents (Nonaka & Takeuchi, 1995; Stein, 1995), the organisational forgetting suspension and elimination modes are processes of little practical interest, since these organisational forgetting modes are characterised in that they are mechanical and easy to put into practice. For similar reasons to the above, descriptive knowledge and more specifically, scientific and technical knowledge that has been correctly assimilated undergoes a very low degree of degradation in organisational memory.
In sum, the organisational forgetting of descriptive knowledge during the processes forming the absorptive capacity construct is of major interest in the acquisition and assimilation phases, due to the dissipation of knowledge. The study of how, why and under what circumstances dissipation takes place in both these processes can be considered as the

natural evolution in the study of absorptive capacity carried out up to the present time. This type of research could enable the identification of inefficiencies in the processes integrating the absorptive capacity, thereby improving it.

3.2 Prescriptive organisational knowledge

On the other hand, prescriptive knowledge shows the actions and direction to be followed in order to achieve the results expected by the organisation. Although it maintains formal aspects, prescriptive knowledge is directed more at operating issues.

"When competition is mainly based on knowledge, companies must evolve using the comprehension of their own knowledge and the processes through which knowledge is converted into organisational capacities and the capacity of those organisational capacities is converted into a response to the demands of its environment" (Lane & Lubatkin, 1998). Winter (2000) describes organisational capacity as a high-level routine (or a collection of routines) which, along with their incoming flows, provides company management with a set of potential options or decisions to achieve significant results for a specific type of problem.

3.2.1 Zero-level organisational capacities

From the global perspective of absorptive capacity, the acquisition, assimilation and exploitation of knowledge coming from the environment not only refers to technical and scientific knowledge, but to other types of knowledge which in most cases, are usually more difficult to assimilate and exploit, such as knowledge related to marketing and knowledge about management or leadership techniques (Lane et al., 2001). Unlike technical and scientific knowledge, this type of knowledge is assimilated by the organisation through rules, tasks and guidelines, which, when combined, form zero-level organisational capacities. According to Winter (2003), zero-level organisational capacities are those which enable a company to carry out everyday work on a short-term basis. Collis (1994) proposed that infinite capacity levels may exist in organisations, from the lowest level (level zero) which allows everyday work to be carried out in the company, to capacities of any level that enable the creation, modification or elimination of lower-level capacities. Winter (2003) suggests that in practice, it is only necessary to study the zero and first-level capacities, as the rest are only of interest in the mathematical sense.

Focusing on zero-level organisational capacities, and based on the absorptive capacity approach, prescriptive knowledge is assimilated through organisational rules, guidelines and routines instead of databases or written documents, as in the case of technical and scientific knowledge. The form in which this type of prescriptive knowledge is stored involves new implications in the organisational forgetting process. Prescriptive knowledge, as occurs with descriptive knowledge, may suffer dissipation (organisational forgetting or loss) through the absorptive capacity acquisition and assimilation processes. However, the causes and consequences of that organisational forgetting are usually different, and so the control mechanisms for one type of knowledge and another must be studied using different approaches. A second difference between descriptive and prescriptive knowledge in organisational forgetting emerges with the degradation of knowledge. Given that prescriptive knowledge is assimilated through rules, guidelines and routines, this type of organisational knowledge usually undergoes greater degradation if the adequate control mechanisms are not applied. Prescriptive knowledge is more easily affected by degradation

than descriptive knowledge, as it contains a large portion of tacit knowledge (unlike descriptive knowledge).

Organisational forgetting by elimination, i.e., based on the decision of the company, usually involves many complications, since that knowledge is not in a physical site but in the routines, tasks and guidelines used on a daily basis by employees. Authors such as Greenwood & Hinings (1996), Piderit (2000) and Cox (1997) have indirectly investigated this type of organisational forgetting, through studying organisational change. However, the reasons why the elimination of routines or organisational capacities is more effective in certain situations than in others have not yet been studied in sufficient depth. Regarding the elimination of zero-level capacities, Winter (2003) proposes the existence of first-level capacities, or dynamic capacities that allow a change to be made in lower level capacities, through the creation, modification, adaptation or elimination of zero-level capacities.

3.2.2 First-level or dynamic organisational capacities

According to Teece et al. (1997), a dynamic capacity is the ability of a company to integrate, build and reconfigure internal and external competencies that will allow it to rapidly react to changes taking place in its environment. In other words, dynamic capacities reveal organisational skill in achieving new and innovative forms of obtaining a competitive advantage (Leonard-Barton, 1992). The redefinition of Zahra & George (2002) about absorptive capacity suggests that it is a dynamic capacity which enables the acquisition, assimilation, transformation and exploitation of knowledge in the environment in order to obtain a sustainable competitive advantage. Based on that standpoint, absorptive capacity is a first-level organisational capacity, as it allows certain changes to be made in zero-level capacities, with the objective of achieving an advantage over competitors.

The study conducted by Van den Bosch et al. (1999) shows that a company's absorptive capacity makes it possible to generate internal learning (creation, adaptation, modification or elimination of knowledge and capacities) which subsequently leads to an increase in that company's absorptive capacity. Indirectly, the study postulated that absorptive capacity, a first-level organisational capacity, was able to change zero-level or descriptive knowledge capacities. Based on that perspective, absorptive capacity can also undergo an organisational forgetting process, through the four modes proposed by Martin de Holan & Phillips (2004), but the form and conditions with which this occurs are widely different from those studied to date.

Cohen & Levinthal (1990) and other authors say that absorptive capacity is a sub-product of organisational learning, which gives rise to more efficient learning in the future. According to those authors, and based on the similarity with cognitive structures, the accumulation of absorptive capacity over a specific period permits a more efficient accumulation in the following period, and thus, improved internal learning of descriptive knowledge and of zero-level organisational capacities. Continuing with the explanation given by Cohen & Levinthal (1990) and Van den Bosch et al. (1998), absorptive capacity can be considered a sub-product of learning, for which reason research into the dissipation or suspension of absorptive capacity is difficult to consider. This fact coincides with the small number of empirical studies performed on dynamic capacities, as opposed to the large number of theoretical publications that exists on dynamic capacities. Before initiating organisational forgetting due to dissipation and suspension, the scientific community should study the mechanisms and conditions necessary for the development of absorptive capacity in greater depth.

Despite the fact that the dissipation and suspension of absorptive capacity have not yet been studied, the degradation and elimination of absorptive capacity have been dealt with in various publications (Bettis & Prahalad, 1995; Lei et al., 1999; Nystrom & Starbuck, 1984). According to these studies, the capacity to forget (eliminate, according to the terminology used to date) higher-level organisational capacities is a key factor in the success of an organisation. Enlarging on the simile proposed by Bettis & Prahalad (1986), organisational capacities function like elements that funnel lower-level capacities. For this reason, to adapt to the changes taking place in the environment, companies must be able to eliminate the organisational capacities that prevent them from adapting to the new situation. Depending on how significant the change is, and its extension, it will be necessary to eliminate organisational capacities from one level to another, and it may even be necessary to eliminate or change the deeply-rooted aspects of an organisation, such as its organisational culture or the dominant logic proposed by Prahalad & Bettis (1986). Although the elimination of high-level or dynamic capacities has been discussed in several studies, the manner in which they must be eliminated and under what circumstances it is more convenient to eliminate them has not yet been studied in sufficient depth and with an empirical focus. Another gap exists in this respect in studying organisational forgetting in relation to dynamic capacities and more specifically, absorptive capacity.

Lastly, the degradation of dynamic or first-level capacities has been studied in depth (Prahalad & Hamel, 1990; Hamel & Prahalad, 1994) as the cause of degradation in competitive advantages. The type of environment (Slater, 1996), competitive level (Lei & Slocum, 2005), changes in market needs (Srivastava et al., 2001; Woodruff, 1997), new technologies (Mata et al., 1995), characteristics of the organisation (Lei & Slocum, 2002) and other decisive factors have been studied as causes of degradation of competitive advantages and consequently, of some first-level organisational capacities. For this reason, research into the degradation of dynamic capacities is less attractive than the previous types of organisational forgetting when considering the study of absorptive capacity. Nevertheless, a compilation of those studies and their inclusion within the context of organisational forgetting could permit a better comprehension of the importance of creating control mechanisms to prevent the loss of this type of organisational knowledge.

4. Conclusions

This chapter has attempted to explore organisational forgetting or unlearning through different levels of organisational knowledge related to absorptive capacity, with a view to establishing a working framework on the subject. With this purpose, the type of organisational forgetting proposed by Martin de Holan & Phillips (2004) has been used, comprised of four forgetting modes: dissipation, suspension, degradation and elimination. Similarly, due to the great diversity of organisational knowledge linked to absorptive capacity that exists in any organisation, the classification proposed by Covington (1981) has been used, using categorisation that is based on the regulatory orientation of organisational knowledge. With respect to the type of organisational knowledge, part of the prescriptive knowledge has been segmented into two levels (zero and first level) based on the classification proposed and used by Collis (1994) and Winter (2003) for organisational capacities. From this point on, the existence of research on the type of organisation forgetting for each level of organisational knowledge has been

explained, also showing the gaps that the scientific community has not yet discussed, or which have been discussed in insufficient depth. Table 4 shows a summary of the working framework developed.

	Descriptive knowledge	Prescriptive knowledge	
		Zero-level capacities	First-level capacities
Dissipation	XXXX	XX	X
Suspension	XXXX	XX	X
Degradation	X	XXXX	XXXX
Elimination	X	XXXX	XXXX
X: of little academic interest XX: of some academic interest XXXX: of considerable academic interest			

Table 4. Type of organisational forgetting or unlearning process depending on the organisational knowledge related to absorptive capacity

This chapter shows the existence of studies which have dealt with different types of organisational forgetting over the past twenty years, but in most cases, indirectly or without analysing the subject in sufficient depth. Furthermore, the research carried out to date on organisational forgetting has been planned without considering the different types of organisational knowledge existing in an organisation. We consider that this distinction is of supreme importance, since the forms and conditions in which organisational forgetting takes place for each type of knowledge are different, therefore leading to a different approach in each study.

This new working framework aims to clarify the existence of different types of organisational forgetting on different organisational knowledge levels. This framework aims to show the complex nature of organisational forgetting in research and the need to conduct studies in greater depth on the subject, in order to understand how, why and in what conditions organisational forgetting takes place and to investigate the existing mechanisms for controlling it.

4.1 Future research

The purpose of this chapter is not to ensure that research compiles and studies all the existing types of organisational forgetting or unlearning, as each one has its own peculiarities and therefore such research would be well nigh impossible to conduct. However, each organisational forgetting mode on each organisational level may lead to research with very interesting findings in an academic and practical sense. As Martin de Holan & Phillips (2004) suggest, on some occasions, the most important activity in knowledge management is to channel an organisational forgetting process while on others, the main activity is to try and avoid that process, in order to respectively reach or maintain a competitive advantage.

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Due to the development of mobile and Web 2.0 technology, knowledge transfer, storage and retrieval have become much more rapid. In recent years, there have been more and more new and interesting findings in the research field of knowledge management. This book aims to introduce readers to the recent research topics, it is titled "New Research on Knowledge Management Applications and Lesson Learned" and includes 14 chapters. This book focuses on introducing the applications of KM technologies and methods to various fields. It shares the practical experiences and limitations of those applications. It is expected that this book provides relevant information about new research trends in comprehensive and novel knowledge management studies, and that it serves as an important resource for researchers, teachers and students, and for the development of practices in the knowledge management field.

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