

**ORGANIZATIONAL UNLEARNING CONTEXT FOSTERING
LEARNING FOR CUSTOMER CAPITAL THROUGH TIME:
LESSONS FROM SMES IN THE TELECOMMUNICATIONS
INDUSTRY**

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Organizational unlearning context fostering learning for customer capital through time: lessons from SMEs in the telecommunications industry

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Abstract

In situations where organizations and their members face changing environments it is necessary that old knowledge represented in processes and routines be challenged prior to the addition of new knowledge. It could be claimed that for learning to occur on an organizational level it must be possible for unlearning to take place. However, there have been few, if any, studies providing direct empirical evidence for this relationship. In the analysis presented in this paper we explicitly include time as a variable in order to model a situation where unlearning at time (t_0) in order to learn more efficiently at a moment after occurs prior to time (t_1). In addition, we also examine the relationship between organizational learning and customer capital. These relationships are examined through an empirical investigation of 107 Spanish small and medium sized enterprises (SMEs) from the Telecommunications industry. The results indicate that the effect of the unlearning at a moment (t_0) on customer capital at a moment (t_1) is depends on whether the learning taking place at (t_1) can be characterized as either exploration or exploitation.

Keywords: Unlearning context, learning, customer capital, unlearning through time, and SMEs.

JEL classification: M10, M15, M19.

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1. Introduction

The concept of customer capital concerns the relationships that an organization develops with its customers. Further, the value of an organization's customer capital may be considered to be the value of these relationships. These relationships enable organizations to gain knowledge of customers enabling them to develop new products, services or processes which may significantly increase the customers derive from the organization's products, processes or services. In some cases the changes in the knowledge an organization has of its customers constitute "changes that are sometimes so fundamental that before long they cannot imagine living any other way" (Pilzer, 1990: 53-54). However, it has been contended that there are prior conditions that must be in place in order for the development of customer relations and the creation of innovative products and services. For example, as Tushman and O'Reilly point out, although learning has the potential to engage peoples' minds and imaginations (Tushman and O'Reilly, 1997), an organization cannot change its knowledge-based behaviours if it has not initially revised and updated its previous routines, procedures, and processes. It is appropriate to note that, in most cases, this updating involves forgetting the original implementations. (De Holan and Phillips, 2004)

Hence, organizational learning and unlearning has emerged and proliferated as a key focus on the management research literature in general and the knowledge management research literature in particular. Researchers, such as Hedberg (1981), state that there is a profound linkage between learning and unlearning in organizations. Thus, we argue that in changing environments it is not only necessary to identify and learn new knowledge but also to identify cases where knowledge has become obsolete. Therefore, firms must both learn new knowledge and discard (unlearn) obsolete knowledge. We further postulate that unlearning should take place prior to new learning. This postulate arises from the observation that learning takes time and also from our proposal that the context necessary for unlearning to take place in an organization is a necessary precondition for new knowledge to be learned by the organization. Thus we propose that what we refer to as an 'unlearning context' needs to be present in an organization accompanied by sufficient time for the enhancement of customer capital and learning to take place (e.g. Lyles and Schwenk, 1992; Bettis and Prahalad, 1995; Prahalad and Bettis, 1996).

The contribution of this paper is to offer an empirically tested model to explain the enhancement of customer capital and organizational learning and its relation to what we have termed organizational unlearning and the context that fosters such organizational unlearning. As a result we expand a variety of prior studies (e.g. Hedberg, 1981; Nystrom and Starbuck, 1984; Bettis and Prahalad, 1995; De Holan and Phillips, 2004). Specifically, we provide answers to the questions: Does the existence of an unlearning context affect current levels of learning? How do unlearning and learning influence the creation of knowledge about customers? While answering the first question, we consider that the establishment of an unlearning context needs to precede

learning involving new knowledge. We further elaborate on the impact of learning on customer capital in the second question.

Following March (1991), Nootboom (1999), and Volberda and Lewin (2003), we further suggest that the learning process encompasses two different sub-processes namely explorative learning vs. exploitative learning. These sub-processes are discussed in detail in the following section. Section 3 describes the telecommunications SMEs analyzed in this paper and the method of data collection and analysis used. The methodology used involves a survey study to explore the unlearning context and to analyze its influence in organizational learning through time. We build on our study of the SMEs telecommunications industry, and on the limited discussions in the literature to date, to extend research on the topic. Our findings are then presented, focusing on a classical typology of types of learning and how the concept of an unlearning context fits into existing models of organizational learning. The paper ends with some concluding remarks.

2. Conceptual framework

2.1. Learning terms

Organizational learning constitutes an idiosyncratic and complex capability which is difficult to imitate, replicate and transfer (Argyris and Schön, 1978; Day, 1994; Slater, 1997). This capacity allows organizations to solve new problems or to solve old problems in new ways (Miner and Mezas, 1996, Argote, 1999, Miner and Anderson, 1999). We can define organizational learning as relating to activities involving the addition, distribution, interpretation and storage of knowledge, which are essential for organizational success (Huber, 1991; Hall and Andriani, 2003; Bong et al., 2004).

In the extant research literature no overarching consistency is observable with respect to either the sub-processes that constitute organizational learning or their nomenclature (e.g. Argyris and Schön, 1978; Huber, 1991; Crossan et al., 1999). Huber (1991), for instance, describes four activities that relate to organizational learning; namely, knowledge acquisition, information distribution, information interpretation and (encoding in) organizational memory. We may further infer that Huber intends to imply that these activities occur in temporal sequence. Argyris and Schön (1978) in contrast distinguish three learning levels namely single-loop, double-loop, and triple-loop learning. We note that their use of the term 'level' suggests that single loop learning precedes double loop which itself precedes triple loop. Additionally an hierarchy of sophistication and comprehensiveness is implied with single loop learning at the bottom and triple loop at the top. Crossan et al. (1999, pp. 532) suggest that knowledge is created through the implementation of feed-forward and feed-back sub-processes. Through the 'feed-forward' process, new ideas and actions flow from the individual to groups and the organization at

different levels. At the same time, what has already been learned 'feeds back' from the organization and groups at different levels affecting the way people act and think.

All the research referred to above appears to recognize the importance of internal and external knowledge sourcing and firm performance (Espedal, 2005). We further suggest that these two kinds of knowledge (external and internal) are the products of two learning sub-processes (i.e. exploration and exploitation) occurring simultaneously and recursively and that further they constitute what we are referring to as the organizational learning context (Tushman and O'Reilly, 1996). The existence of these sub-processes and the extent to which they are implemented testify to the intensity of efforts made toward the development of firms' internal capabilities and for accessing knowledge from external sources. Thus, in our analysis we focus on internal efforts directed towards the discovering and developing of new solutions and the acquisition of knowledge through training and the extent to which firms seek to develop customer capital as one of a number of sources of external knowledge (eg. other companies, universities and technical colleges).

A number of researchers have made a distinction between processes that primarily support the exploration of knowledge and those that support the exploitation of knowledge. Knowledge exploration starts with activities involving searching, variation, risk-taking, experimentation and innovation. These activities lead to the introduction of novel practices by small and medium enterprises (SMEs). SMEs can encourage the exploration of knowledge by implementing formal or informal meetings, or creating external communities of practice where customer and sellers interact and work together for the achievement of a particular objective (Dewhurst and Cegarra, 2004). Knowledge obtained as a result of these activities can be internalized by sellers and customers who materialize it in the form of relational trust, common language and confidence (Selnes and Sallis, 2003). The process of knowledge exploitation refers to the process involving the effective and efficient allocation of resources into valuable and competitive business platforms based on existing knowledge (Holmqvist, 2004; March, 1991). While knowledge exploration retains the knowledge within the organization, knowledge exploitation may well release the knowledge into the external environment. Sub-activities involved in an instance of knowledge exploitation include targeting the output, producing the output by interpreting and transferring the output by packaging and delivering projections that have been produced for customers in the environment (Holsapple and Singh, 2001). Bierly and Daly (2007) further propose that the main role for knowledge exploitation, which aims to increase the capacity of an SME to create enhanced or new outputs, is to foster commitment, training programs and focus on the use of what has already been learned within the company (Cegarra, et al., 2007; Ruiz et al, 2006).

2.2. Unlearning context

We contend, we hope not contentiously, that some of the knowledge generated as a result of activities that constitute organizational learning is of transient value. While the focus of organizational learning literature has tended to be on learning itself, the importance of aspects of organizational context, and in particular those relating to unlearning, that enable learning to take place of an unlearning context to learn has not been ignored (Stein, 1995). For instance, the literature notes that without a context facilitating the unlearning of existing knowledge, core-competencies become core-rigidities or competency traps (Leonard-Barton, 1995; Hamel and Prahalad, 1994). Despite the existence of a research literature emphasizing the importance of unlearning, it is unclear how it can be conceptualized and operationalized. Although there are several approaches to understanding the role of the unlearning context that have been presented in the research literature, this study adopts an approach that proposes that such an unlearning context must facilitate forgetting “old knowledge”, habits, routines, processes and so on, as a prior step to learning something new, and as a requirement to avoid the negative consequences of yielding to inertial forces and organizational rigidities (De Holan and Phillips, 2004: 1605). Adopting this approach, unlearning is viewed as the elimination of obsolete knowledge from memory (Akgün et al., 2007) and the discarding of old routines and understandings that are no longer useful and which are likely to block new learning (Hedberg, 1981; Weber and Croker, 1983; Nystrom and Starbuck, 1984; Walsh and Charalambides, 1990).

What we refer to as an ‘unlearning context’ in an organization, at its heart, attempts to reorientate organizational values, norms and/or behaviours by changing cognitive structures (Nystrom and Starbuck, 1984), mental models (Day and Nedungandi, 1994), dominant logics (Bettis and Prahalad, 1995), and core assumptions which guide behaviour (Shaw and Perkins, 1991). Given this approach, the existence of an ‘unlearning context within an organization could be considered to be the genesis of a competitive advantage (Sinkula, 2002). According to Bogenrieder, (2002), managers need to foster an unlearning context in order to open the way for new habits, patterns, ways of doing and interpreting things to take place (e.g., Huber, 1991; Bogenrieder, 2002). With this in mind, Sinkula et al. (1997) propose that open-mindedness (i.e., a willingness to consider ideas and opinions that are new or different) is an essential component of an unlearning context, through which the management supports the proactive questioning of existing organizational routines, assumptions and beliefs potentially leading to their being ignored, modified, deleted or replaced. In the following section of this paper we present a model wherein the existence of an unlearning context necessarily precedes organizational learning and introduce our hypotheses.

2.3. Building customer capital through learning and unlearning

Customer capital arises as a result of interaction between an organization and its customers (Chang and Tseng, 2005). In our study we include the concept of customer capital to represent

the value – in terms of contributions to current and future revenues – that results from an organization's relationship with its customers (St-Onge, 1996; Duffy, 2000; Johannensen et al., 2005). As pointed out by Kohli et al. (1993), an organization can generate intelligence and disseminate it internally; however, unless it responds to customer needs, very little is accomplished. We contend with others that an organization's customer capital - its competence in satisfying customer needs through effective and quick responses - is critical for sustained success (Jayachandran, 2004). Since organizational learning has been recognized as a management tool for managing customer capital (Cegarra and Rodrigo, 2003); a firm can needs to engage in organizational learning both to explore new possibilities to ensure profits for tomorrow and to exploit old certainties for profits for today. The achievement of two learning objectives is critical in gaining competitive advantage and improving customer relations (Ahuja and Lampert, 2000). While one pursues new knowledge and develops new products and services for new customers (Nahapiet and Ghoshal, 1998), the other builds upon current knowledge to meet the needs of existing customers (Benner and Tushman, 2003).

However, there is a problem with previous arguments in that the learning of novel tasks requires unlearning (De Holan and Phillips, 2004). In other words, for a learning process to be able to succeed it is necessary that an unlearning context already exists within the organization (Hedberd, 1981; Weber and Croker, 1983; Nystrom and Starbuck, 1984; Walsh and Charalambides, 1990).

It is also appropriate to note that organizations that possess an unlearning context are likely to be more flexible than ones that do not. For instance, in the case of expert salespeople, Cegarra and Rodrigo (2003) have found that sellers are capable of interpreting the body language and facial expressions of clients based on their prior experience of the client. However, over time employees' interpretations may become inappropriate resulting in their making inappropriate inferences thus, potentially, weakening the relationship with customers and reducing the value of customer capital. Thus, an unlearning context potentially allows individuals to learn how customer perceptions of the company's products and services change through direct observation. This means that an unlearning context encourages individuals to question not only the their knowledge but also whether their particular approach to innovation is applicable or not (Baker and Sinkula, 1999). As a result of an organization possessing an unlearning context individuals will create valuable models of customers, buying processes, product usage and focus their learning efforts on problems that are more important for the organization and its customers.

The findings above can be clarified by recognizing the importance of time in the learning process. Time has been identified as an important element in understanding organizational behaviour (e.g., Ancona et al., 2001; Bluedorn and Denhardt, 1988; Harrison et al., 1998). For Gist and Mitchell, (1992) an individual's level of self-efficacy can be expected to change over time as new information and experience is acquired though direct experience with the task,

performance feedback, and other factors. Crossan et al (2005) focus on three aspects of time: a) time as a trigger for change, b) time as a co-ordination mechanism for change, and c) time as a resource for change. With respect to considering time as a trigger for change Gersick's (1991) work shows that groups change their behaviour when approaching the middle of the span of time they have to perform a task. With respect to considering time as a co-ordination mechanism it can be noted that time creates a shared calendar for change and, thus, serves to schedule activities and to maximize their synchronization (Hedberg et al., 1976). Finally, when activities have to be undertaken they require time and hence time can be considered as a resource to manage. Time may be seen to be present in all these aspects when organizational learning is concerned. Thus the re-orientation of an organizational learning process may be triggered by events at a specific time, may comprise of a variety of different activities that require coordination and requires time to carry out.

The creation of an unlearning context within an organization is complicated because of the fact that many of the behaviours and habits designed to foster a learning culture are performed automatically and often do not require the conscious apprehension of time (Lei et al., 1999; De Holan and Phillips, 2004). Thus it takes time to habituate these behaviors. It is also clear that it will take time and often conscious reflection to unlearn existing habits. Thus, we would suggest that time provides organizational members with the temporal space they need to reflect on and conceive necessary change in the learning process (Tyre et al., 1996). Time is implicated in the change process not as a result of the establishment of deadlines on a case-by-case basis but as a result of the pace with which the organization evolves through its major change cycles (Eisenhardt and Brown, 1998). Time is consumed not only by activities that are readily observable and measurable, such as specific actions and tasks which occur in the world, but also by those mental activities that are not readily seen, such as thinking and reflecting on problems (Goddard, 2001). This suggests that the creation of an unlearning context is likely to have an impact on organizational learning at a later stage by changing the ways individuals interact or come to interpret things. Thus, the creation of an unlearning context at time (t_0) will result in the absorption of new knowledge through the organizational learning process at a later time (t_1). Thus, we would suggest the following hypothesis:

Hypothesis 1: the existence (or non-existence) of an unlearning context at time (t_0) affects the nature of organizational learning at a later time (t_1)

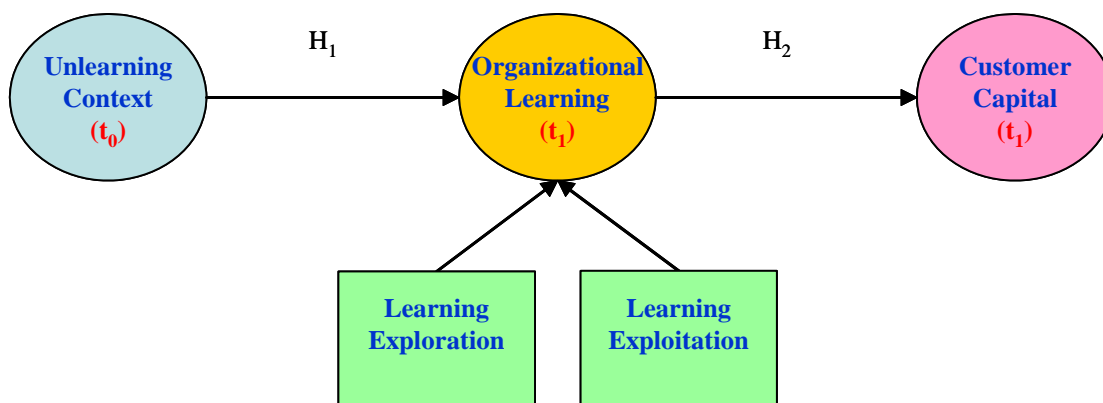
The possession of 'customer capital' by an organization implies that it understands its customers' business, market and problems, as well as having developed a strategy which will meet customers' needs, and has implemented that strategy by being responsive to customers (St-Onge, 1996; Duffy, 2000). However, the implementation of any strategy requires a 'learning process' (Argyris and Schön., 1978), which will only take place if it is actively fostered and advanced by management (Sundstrom et al., 1990). Once supported organizational learning

fuels the organization's innovative activities by providing the external and internal knowledge necessary to generate new ideas (Imai et al., 1988). Organizational learning can also potentially enhance the effectiveness and efficiency of the unlearning process. For example, an environment that provides support to learning activities is also likely to support, among other things, adjustments in systems, processes, or structures and the support of communication and dialogue between customers and the staff (Cegarra and Rodrigo, 2003). This enhanced communication and sharing of knowledge is likely to lead to a greater understanding of customers and hence the development of more effective customer relationships as a result of the unlearning of obsolete knowledge and its replacement by more relevant and valuable knowledge (Selnes and Sallis, 2003). This would imply that the existence of organizational learning in a firm will have a positive influence on the value of customer capital leading to our postulating the following hypothesis:

Hypothesis 2: Organizational Learning will positively influence customer capital.

We group our hypotheses in the next model represented in Figure 1

Figure 1: Organizational learning versus organizational unlearning



Note: Squares are representing learning dimensions (first-order factor)

3. Research Methodology

The Spanish Telecommunications industry was the subject of our data collection. We have further focused on SMEs within the industry since they have been recognized as being fundamental players within the Spanish Telecommunications industry (OECD, 2005). The total market in Spain for 'telecommunications' (including wire line, mobile and data communications with broadband internet access as a key means of transmission), represents 18 percent of the total European telecommunications market and nearly have gross revenues of 4.7 percent of the Spanish gross domestic product (OECD, 2005). We would note that SMEs that comprise the Spanish Telecommunications industry are highly motivated to introduce processes for learning and unlearning as they have to compete in a highly dynamic environment, face strong

competition and have to respond to rapid advances in technology. It is further interesting to observe that in Spain, overall SMEs represent more than 99.8% of all registered businesses, account for about 70% of those participating in the workforce and generate approximately 65% of the gross domestic product.

Data collection and measures

In order to test the above hypotheses, we employed key informant methodology to collect survey data from the telecommunication industry in Spain during 2004 and 2005. The first phase of data collection lasted over a month, from early May to June 2004. In total, 665 companies were telephoned and invited to participate in the study. 195 agreed to participate. All the companies which were approached were listed in CNAE-642 (The Spanish National Classification of Economic Activities 642) and were classified according to the European Union classification as SMEs. The second phase of data collection lasted for about two months, from early May to July 2005. In total, 130 companies (representing a subset of the 195 companies that had completed the survey one-year earlier) were contacted and 107 surveys were conducted, which gives a response rate of 16.09% of the total sample of companies (54.87% response rate from the companies who had initially agreed to participate). A comparison between companies which participated and those companies which did not yielded no significant differences relevant to turnover, total assets or number of employees, which suggests that non-response bias is not a problem (Armstrong and Overton, 1977). A profile of the participating companies is provided in Table 1.

Table 1: Profile of respondents

	N	Percentage
Less than 50 employees	87	81%
Companies have 50-249 employees	20	19%
Turnover of not more than 7 million euros	87	81%
Turnover of not more than 40 million euros	20	19%
Balance sheet total of not more than 5 million euros	80	75%
Balance sheet total of not more than 27 million euros	27	25%

Based on a detailed examination of the literature which has been discussed in Section 2 above, a questionnaire that was made up of 24 items (6 measuring the range of learning exploration; 6 measuring the range of learning exploitation; 6 measuring the extent to which the unlearning context was present in the organization; and 6 relating to the strength and depth of customer capital) was designed. We modeled organizational learning as a formative second-order construct measured by two first-order factors or dimensions: learning exploration and learning exploitation.

A typical question that arises when taking a multidimensional approach (i.e. second-order) to developing a model is whether organizational learning should be modeled as consisting of

reflective or formative indicators. Indeed, understanding the underlying essence of the construct, whether it is reflective (i.e., changes in the underlying construct cause changes in the indicators) or formative (i.e., indicators impact or cause the underlying construct), is an essential first step in modeling the concept's structure (Mckenzie Jarvis and Podsakoff, 2005). Therefore, the choice depends primarily on whether the first-order factors or dimensions are viewed as indicators or causes of the second-order factors (Chin, 1998). We adopt consider that the two dimensions of organizational learning are formative indicators. Thus, an increase in the level of learning exploration does not imply an increase in the level of learning exploitation. As a result the two dimensions of organizational learning that we propose are not necessarily correlated, and consequently, it can be argued that traditional reliability and validity assessments are inappropriate and illogical when considering the dimensions of a formative second-order factor (Bollen, 1989).

The questionnaire has been utilized in other research (Cegarra and Dewhurst, 2006), and was distributed with covering letters or emails to the manager or general director of the SMEs. The questionnaire constructs comprised:

- (a) The initial measures relating to the existence of learning exploration (ER). This included 6 items adapted from a scale designed by Kohli et al. (1993) to measure the '*intelligence generation*' construct. Ultimately, after refinement we ended up with 5 measures relating to the existence of learning.
- (b) The existence of conditions necessary to support the learning exploitation (ET) was measured using an adapted version of a scale designed by Kohli et al. (1993) to measure the '*response design*' construct. After refinement we ended up with 4 measures relating to the existence of learning exploitation.
- (c) The initial measures relating to the existence of an unlearning context scale consisted of 6 items adapted from a scale designed by Baker and Sinkula (1999) to measure the construct of open-mindedness (i.e., a willingness to consider ideas and opinions that are new or different). After refinement we ended up with 4 measures relating to the existence of an unlearning context.
- (d) The strength of customer capital (CC) was measured using measures proposed by Bueno (1998). (See Appendix for a list of items)

Data analysis and results

The hypotheses were tested simultaneously using partial least squares (PLS), a structural equation modeling technique employing a principal component-based estimation approach (Chin, 1998). PLS was selected due to the characteristics of our model and sample. Our model uses formative indicators, the sample size is relatively small (107 cases), and the data is non-normal. It is not possible to make use of other structural equation models (e.g. the covariance based model performed by LISREL or AMOS) in this (c.f., Diamantopoulos and Winklhofer,

2001). For hypothesis testing, we used the bootstrapping procedure recommended by Chin (1998).

This study uses PLS-Graph software version 03.00 Build 1058 (Chin, 2003). Using PLS involves following a two-stage approach (Barclay et al., 1995). The first step requires the assessment of the measurement model. This allows the relationships between the observable variables and theoretical concepts to be specified. This analysis is performed in relation to the attributes of individual item reliability, construct reliability, average variance extracted (AVE), and discriminant validity of the indicators of latent variables. For the second step, the structural model is evaluated. The objective of this step is to confirm to what extent the causal relationships specified by the proposed model are consistent with the available data.

In order to analyze the relationships between the different constructs and their indicators we have adopted the latent model perspective, in which the latent variable is understood to be the cause of the indicators and, therefore, we speak of reflective indicators. All four constructs in the model are operationalized as reflective, with the exception of “organizational learning”, which is modeled as a second-order formative construct.

With regard to the measurement model, we began by assessing the individual item reliability (Table 2). The indicators exceed the accepted threshold of .707 for each factor loading (Carmines and Zeller, 1979).

Table 2: Factor Loadings of reflective constructs

	Unlearning Context	Learning Exploration	Learning Exploitation	Customer Capital
UL1	0.89	0.29	0.32	0.40
UL2	0.84	0.25	0.38	0.29
UL3	0.76	0.20	0.26	0.32
UL4	0.90	0.28	0.33	0.44
ER1	0.13	0.77	0.10	0.17
ER2	0.12	0.76	0.11	0.10
ER3	0.23	0.73	0.11	0.24
ER4	0.30	0.77	0.14	0.30
ER5	0.24	0.72	0.17	0.16
ET1	0.21	0.12	0.73	0.23
ET2	0.34	0.12	0.75	0.29
ET3	0.34	0.12	0.81	0.33
ET4	0.30	0.20	0.88	0.32
CC1	0.40	0.30	0.27	0.74
CC2	0.43	0.21	0.34	0.87
CC3	0.16	0.25	0.26	0.73
CC4	0.29	0.18	0.31	0.86
CC5	0.41	0.20	0.33	0.87
CC6	0.31	0.22	0.29	0.72

From an examination of the results shown in Table 3, it is apparent that all of the constructs are reliable. They present values for both Cronbach's alpha coefficient and for a composite reliability greater than the value of .7 required in the early stages of research, and the stricter value of .8 for basic research (Nunnally, 1978). The AVE should be greater than .5 meaning that 50% or more variance of the indicators should be accounted for (Fornell & Larcker, 1981). All constructs of our model exceed this condition (Table 3). For discriminant validity, we have compared the square root of the AVE (i.e., the diagonals in Table 3) with the correlations among constructs (i.e., the off-diagonal elements in Table 3). On average, each construct relates more strongly to its own measures than to others.

TABLE 3: Descriptive Statistics and Correlation Matrix

	Mean ^a	SD	CA	CR	AVE	1	2	3	4
1. Unlearning Context	5.51	1.56	0.86	0.91	0.72	0.85			
2. Learning Exploration	5.29	1.39	0.81	0.87	0.56	0.30	0.75		
3. Learning Exploitation	5.47	1.62	0.80	0.87	0.63	0.38	0.18	0.79	
4. Customer Capital	5.45	1.48	0.87	0.91	0.64	0.42	0.29	0.37	0.80

Notes:^a Mean = the average score for all of the items included in this measure; S.D. = Standard Deviation; CA = Cronbach's Alpha; CR = Composite Reliability; AVE = Average Variance Extracted; n.a. = not applicable.

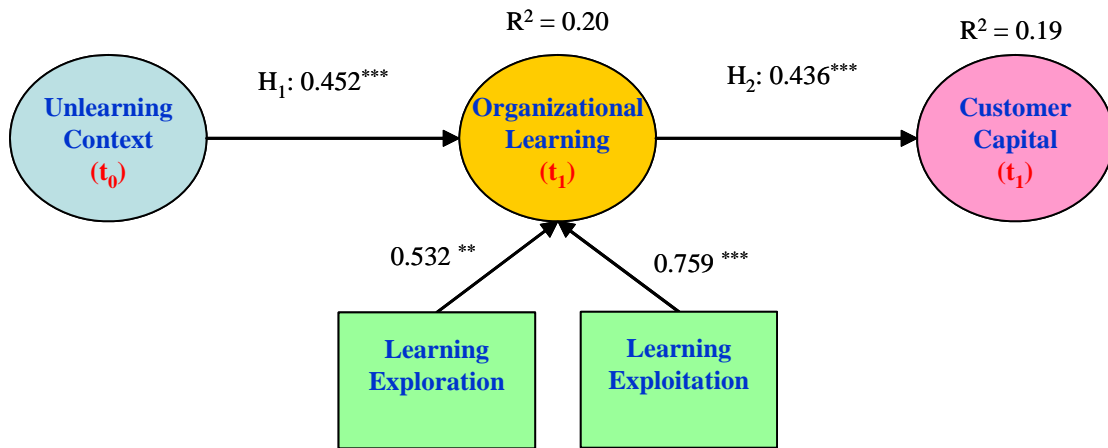
The bold numbers on the diagonal are the square root of the Average Variance Extracted. Off-diagonal elements are correlations among constructs.

The evaluation of formative dimensions of "organizational learning" is different from that of reflective ones. To evaluate formative dimensions one examines the weights (Mathieson, Peacock, and Chin, 2001), which represent a canonical correlation analysis and provide information about how each indicator contributes to the respective construct (see Table 3). Weights do not need to exceed any particular benchmark because a census of indicators is required for a formative specification (Diamantopoulos and Winklhofer, 2001). The concern with formative dimensions is potential multicollinearity with overlapping dimensions, which could produce unstable estimates (Mathieson et al., 2001). Results of a colinearity test show the variance inflation factor (VIF) of two dimensions scores (learning explorative and learning exploitative) far below the common cut-off of 10. In addition, we confirmed the validity of the formative dimensions using the procedures suggested by Fornell and Larcker (1981) and Mckenzie, Podsakoff and Jarvis (2005).

The structural model resulting from the PLS analysis is summarized in Fig. 2, where the explained variance of endogenous variables (R^2) and the standardized path coefficients (β) are shown. All hypotheses presented are significant, and therefore, have been verified. Since PLS makes no distributional assumptions in its parameter estimation, traditional parameter-based techniques for significance testing and model evaluation are considered to be inappropriate (Chin, 1998). One consequence of the comparison between covariance structure analysis

modeling approaches and PLS is that no proper overall goodness-of-fit measures exist for models using the latter (Hulland, 1999). The structural model is evaluated by examining the R^2 values and the size of the structural path coefficients (β s).

Figure 2: Estimated casual relationships in the structural model



* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (based on $t_{(499)}$, two-tailed test)

Note: Squares are representing learning dimensions (first-order factor). The dimensions coefficients represent the regression weights of each learning dimension

Finally, the stability of the estimates is examined by using the t-statistics obtained from a bootstrap test with 500 re-samples. Table 4 sets out the model statistics, the path coefficients and the t values observed with the level of significance achieved from the bootstrap test.

TABLE 4: Model statistics

Hypotheses	Path coefficients	T values
Unlearning Context → Organizational Learning	0.452***	6.02
Learning Exploration → Organizational Learning	0.532** ^a	2.96
Learning Exploitation → Organizational Learning	0.759 ^a ***	5.22
Organizational Learning → Customer Capital	0.436***	6.23

*** $p < .001$, ** $p < .01$, * $p < .05$, ns=not significant (based on a Student t (499) distribution with two tails).

$t_{(.001,499)}=3.310124157$, $t_{(.01,499)}=2.585711627$, $t_{(.05,499)}=1.964726835$.

^a weights of formative dimensions of Organizational Learning

With regard to the relationship expressed by hypothesis H1, which represents the link between the unlearning context at moment (t_0) and organizational learning at moment (t_1), this link has been demonstrated ($\beta=.452$, $p < .001$). With respect to the relationship of organizational learning (t_1) and customer capital (t_1) of the model, in accordance with hypothesis H2, organizational learning has a positive and strong influence on customer capital ($\beta =.436$, $p < .001$). With respect to the dimensions of organizational learning, results indicate that learning exploitation

(weight = .759) is a more important learning technique than learning exploration (weight= .532). According to the variance explained by each construct, the “unlearning context” construct explains 20 percent of the “organizational learning” construct, and organizational learning explains 19 percent of customer capital. We also measure the effect of each dimension of organizational learning on customer capital (indirect effect), thus, learning exploitation (.330) impacts more on customer capital than learning exploration (.231).

4. Discussion

The primary purpose of this study was to examine the potential mechanisms through which the existence of an unlearning context affects learning and how these processes affect customer capital through time. The study has also analyzed how the establishment of conditions that stimulate learning and unlearning contribute to the creation of customer capital. This research attempts to offer a contribution to the current unlearning, learning and customer capital research literature by explicitly including time as an element in our model and subjecting the model to empirical testing. This study offers a framework for researchers to assist them in understanding how learning flows to, changes and impacts on customer capital ‘through’ time as a result of the existence of an unlearning context

Our results support the contention that the existence of an unlearning context at time (t_0) is a significant positive predictor of learning at a later time (t_1). These findings highlight the significance of time, a factor often overlooked in organizational learning research (Crossan et al., 2005). Models in current management theory typically rest on a theoretical understanding of time whose guiding concept is that organizations have a permanent identity. However, the identity concept appears to be problematic in general, and for complex entities such as SMEs, the issue of identity is more complex than for generic nature. The focus on identity leads to a linear conception of temporality. Thus, the effect is to consider the organization existing ‘in’ time, although its identity evolves and changes ‘through’ time (Gioia et al., 2000). The result of this conceptualization is that time is ignored as a variable in management research. In our study, however, we focus on taking into account time as a variable since for the organizational learning processes studied (i.e. knowledge exploration and knowledge exploitation), knowledge is a process that develops over time, and takes time to unlearn (Akgün et al., 2007).

In this study, the time taken to complete the unlearning process is one factor that is important in determining the relative impact of outdated knowledge. As a result managers should not expect instant results and it is likely that unlearning will not have an immediate impact on organizational learning. An “incubation” period is necessary. An explanation for this phenomenon could be that implementing an unlearning context creates some problems:

Firstly, employee motivation may be decreased because the performance appraisal criteria become unclear. For instance, an organization can foster some competencies among its

employees but employees may not be motivated to acquire these competencies if they consider that they may not be relevant or valuable for very long. (McCarthy et al., 1990);

Secondly, the effect of unlearning is slow, because it takes time for individuals to forget outdated knowledge and change habituated behaviours. Furthermore, tension arises because current (obsolete) knowledge impedes the assimilation of new knowledge. Also, there may well be interference between learning through exploitation and learning through exploration. It may well also be the case that the exploration of new knowledge impedes the exploitation of what has already been learned (Birkinshaw and Gibson, 2004);

Finally, not all managers are good instructors. This is especially true in SMEs where learning and unlearning resources are scarce and managers often lack the time, training and expertise to foster appropriate learning and unlearning contexts (Langerak, 2003). In this situation, individuals can become insufficiently motivated and are liable to act spontaneously, without the support of their superiors.

Our findings also provides support for the proposition that, in order to create customer capital, companies need to provide and support organizational learning. It may well be the case that in order to maintain and enhance customer relationships and hence maintain or increase the value of customer capital, people need the necessary transparency, efficiency and effectiveness that result from the learning process. Equally, customer relations are likely to benefit from access to the new knowledge necessary to resolve design and purchase problems (Tsai, 2001). These propositions support the thesis presented in relevant literature that organizational learning allows the acquisition, distribution, interpretation and storage of new knowledge, by enabling the business to develop strong relationships with key customers and insights into opportunities for market development (Slater and Narver, 1995).

The theoretical model we have presented also measures the effect of each dimension of organizational learning on customer capital (including indirect effects) and demonstrates, for the sample used, that both variables have significant effects. Although this result is worthy of further investigation, one conclusion that might be drawn is that for customer capital to exist on an organizational level, both exploration and exploitation processes must take place. While learning exploration provides a strategic reorientation (Greenwood and Hinings, 1996), and takes organizations outside their familiar domains (Starbuck, 1996), learning exploitation can potentially reduce duplication and reworking (March, 1991). In other words, organizational learning helps company members to become more efficient at their current tasks, and allows customer relationships to be developed and utilized in an effective and efficient manner through the free exchange of knowledge (Selnes and Sallis, 2003).

Our results also indicate that the influence of unlearning on customer capital is significant when it is mediated by organizational learning. This addresses the concerns expressed by authors such as Humphreys et al. (2005) when they assert that if employees are going to challenge their deepest-held meaning in a workplace context, the learning context needs to change as well. Organizations may attempt to update information on employee skills, expertise and knowledge through an unlearning process, but employees may be reluctant to forget a complete personal profile for a variety of reasons. In such situations unlearning is either supported or inhibited by organizational learning. For example, some of the employee's outdated knowledge could be missing temporarily if the employee is transferred to another position where the outdated knowledge cannot be applied (Mueller and Dyerson, 1999), alternatively, they may transform this knowledge into new knowledge as a result of the passage of time. Adopting this perspective, the employee forgets the knowledge or decides not to keep this knowledge up-to-date. In this case, we argue that unlearning may be further 'consolidated' through the emergent understandings that are created by group members when they interact, or by exploitative processes (e.g. using organizational memory) that may offer a better way of delivering information.

In sum, our study makes two contributions to unlearning/learning literature and the theory of customer capital.

The first contribution is to question the existing models that operationalize organizational learning. Most studies in the area of organizational learning emphasize the need to shape effective learning processes without much regard for their unlearning processes (e.g. March, 1991; Nooteboom, 1999; Volberda and Lewin, 2003). Our findings challenge these traditional views, as they suggest that an unlearning context is an important antecedent to successful organizational learning. Taking this into account, we argue that because the existence of a well-developed unlearning context, some firms are able to quickly reconfigure their architecture and reallocate their knowledge (learning processes) to focus on emergent opportunities or threats. Consequently, managers should consider incorporating the existence of unlearning context in models of organizational learning as this provides a holistic presentation and adds realism to the learning models. Thus, an unlearning context facilitates a fluid process of learning by adapting procedures and norms to changing environmental learning needs (Akgün et al., 2007). Concretely, it appears that many of the SMEs that participated in our study possessed unlearning contexts. We would further assert that the implementation of organizational learning processes may not of itself result in competitive advantage for an organization. Competitive advantage may be derived from the creation of an unlearning context followed by the implementation of organizational learning. Thus organizational learning is a necessary but not sufficient requirement for the achievement of competitive advantage particularly in rapidly changing or turbulent business environments.

The second contribution of this research derives from the results of the empirical test of the theoretical model. Even though there is research on organizational learning theoretically that indicates that unlearning is a catalyst of organizational learning (Mezias et al., 2001, Klein, 1989), the organizational learning research literature is lacking empirical evidence in support of this assertion. The study found that the effect of an unlearning context at a moment (t_0) on customer capital at a moment (t_1) is mediated through the exploration and exploitation of knowledge at a moment (t_1). We further suggest that all unlearning efforts should be centered around people in the organization who are actually dealing with customers to fulfill their requirements. Since the employees are dealing with customers to fulfill their requirements, it is important for the employees to be given a substantial amount of autonomy to enable them to identify and implement solutions for their clients. This will definitely prevent the problem relating to the wastage of time and effort when the employees discuss, explore and identify the clients' needs. We think that this is an important finding, as many overworked managers are limiting their use of information and search for solutions, not building active unlearning contexts for their organizations. In this regard, we hope this paper opens interesting avenues for further research.

Managerial implications and limitations

The important managerial implications of this paper are that the creation of an unlearning context within an organization is a necessary precursor to successful organizational learning, which in turn may have the effect of adequately improving customer capital. This is because without the existence of an unlearning context organizational learning may result in the creation of rules that may potentially become inflexible thus undermining the strength and value of relationships with customers. In this regard, not many managers encourage their employees to test the validity of their beliefs about the cause and effect relationships that guide their behavior or other knowledge which similarly underpins their behavior, decision making, and customer requirements determination. In many cases learned routines are so inculcated within the organization and its employees that only at a time of crisis will managers begin to question them. Thus, we have shown that unlearning can be operationalised through an open-mindedness context where employees can change their habits and routines and forget old knowledge, and substitute new habits and knowledge, as part of a major process or which might be described as relearning.

We further argue that managers should consider the creation of an unlearning context to implement models of organizational learning as this involves adaptation to new opportunities aligned with the overall strategy of the business. Managers should also consider that time is a key factor to be taken into account in organizational learning models both with respect to the sequence in which actions should occur and because unlearning and learning take time to be consummated.

Another possible implication for managers could be a reflection of the significance of their own hard-earned nuggets of knowledge. Many managers tend to overlook relevant events just outside their domain that threatens their reputation and careers (Starbuck, 1992). This is, in part, due to the liability of success. "The presumed correctness of past actions and interpretations is reinforced by repeated success, and the ensuing complacency breeds rejection of information that conflicts with conventional wisdom" (Day, 1994: 24). Managers will thus consider that what they consider to be their own unique knowledge, the nuggets of knowledge they have so studiously extracted from prior knowledge and experience are the basis of their success and, to some extent represent eternal truths. Expanding on this issue, Slater and Narver (1995) express the view that unlearning is critical in these chaotic times because so many of our hard-earned nuggets of knowledge, intuition, and just plain opinion depends on assumptions about the world that are simply no longer true. As Sinkula asserts "marketing managers cling to routines and dominant logics that are out of date, which drives organizations to be lulled into complacency because individuals do not like change" (2002:258). To deal with these problems, managers should be able to update their knowledge in order to grow and adapt with the company, re-applying lessons from earlier stages to new situations. In doing so, today's managers should be constantly exposing themselves to an unlearning context in order to be alert to opportunities beyond the confines of their own jobs (e.g. taking action in the broader interest of the organization or thinking about work processes).

With respect to the telecommunications industry in particular, a possible explanation for our findings is that they partially arise as a result of the liberalization process in the Spanish telecommunication sector which began in 1997 with the approval of a raft of parliamentary laws (i.e. laws 12/97 and 20/97). This means that Spanish telecommunication SMEs are still under a transitional period from regulation and state intervention to deregulation and liberalization (Cabeza and Gómez, 2007), which has led to an increase in the speed, magnitude and quantity of changes that they must respond to (e.g. fall in prices, interconnection agreements between network owners and services providers). As a result, the updating of knowledge is particularly critical to the telecommunication sector and hence, to facilitate this updating telecommunications companies have been in the vanguard of those companies seeking to create an unlearning context. Another possible explanation may relate to the change of government after the March 11, 2004 terrorist attacks in Madrid. Once the new government had settled down, new laws and regulations were actively directed towards the telecommunications industry (Cabeza and Gómez, 2007). Given the new legal and regulatory environment the creation of an appropriate unlearning context accompanied by the implementation of organizational learning processes were critical to the maintenance if not improvement customer relations in SMEs (Chen and Huan, 2007). Thus, as our data suggests, Spanish managers in the telecommunications industry have already implemented some of the managerial recommendations we have presented in this paper.

The study is not without limitations. Firstly, we are able to provide only a snapshot of ongoing processes and not measures of the same process over time. Secondly, although the constructs have been defined as precisely as possible by drawing on relevant literature and validated by practitioners, they can realistically only be thought of as proxies for an underlying latent phenomena that are not fully measurable. Thirdly, the model presented in this study was general and did not capture the possible moderating effects of environmental turbulence and uncertainty. Prior research has shown that the effect of cognitive factors on individual, group and organizational performance can vary substantially with environmental conditions. For instance, under turbulent environmental conditions, the unlearning context might produce more desirable results in the levels of organizational learning in the firm than would be the case under more stable environmental conditions. Moreover, other factors which have not been included in this study are also likely to affect the various constructs we have referred to in our research.

Taking into account its limitations, this study points to the need for new avenues of research. Firstly, we consider that the use of additional items might help capture the richness of constructs to a greater extent. Secondly, another possible research direction could examine the life-cycle effects on the ambidexterity context wherein activities relating to exploration and exploitation co-exist as implied by our model development. Thirdly, this paper suggests that a cross-national research may be needed to examine the relationships between the ambidexterity context and customer capital. Finally, the companies must also understand that unlearning is not about a one-time investment but it requires constant attention and investment over a substantial period of time even after it begins to deliver results. From an academic standpoint, more research is needed to identify the average time necessary for unlearning to be effective.

Conclusions

It is clear from relevant literature that knowledge is a critical source of innovation and progress. However, in situations where organizations and their members face changing environments, it is necessary that the old 'knowledge' represented in processes, routines and organizational memory be challenged prior to the addition of new knowledge. In such situations, it will be necessary to modify or even delete some components of information in order to ensure that employees have access to the up-to-date information necessary to maintain or enhance customer relationships. Such changes may often require time and an unlearning context to take place.

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Appendix 1. Questionnaire items

Knowledge exploration: indicate the degree of agreement or disagreement (1= high disagreement and 7= high agreement) with respect to your organization.

ER1: Co-operation agreements with other companies, universities, technical colleges, etc. are fomented

ER2: The company is in touch with professionals and expert technicians

ER3: The organization encourages its employees to join formal or informal nets made up by people from outside the organization

ER4: The employees attend fairs and exhibitions regularly

ER5: Your employees frequently maintain work meetings with customers

Knowledge exploitation: indicate the degree of agreement or disagreement (1= high disagreement and 7= high agreement) with respect to your organization.

ET1: All the members of the organization share the same aim to which they feel committed

ET2: Employees share knowledge and experience by talking to each other

ET3: The company develops internal rotation programmes so as to facilitate the shift of the employees from one department or function to another

ET4: The company offers other opportunities to learn (visits to other parts of the organization, internal training programmes, etc.) so as to make individuals aware of other people's or departments' duties

Organizational Unlearning: indicate the degree of agreement or disagreement (1= high disagreement and 7= high agreement) with respect to your employees.

UL1: The company is prepared to change working practices

UL2: New and novel approaches are considered

UL3: Employees are prone to collaborate with members of the organization and to solve problems together

UL4: Employees take risks

Customer Capital: with respect to their competitors indicate the degree in which your company reached the following objectives (1= strong down and 7= strong up).

CC1: Increase of market quota

CC2: Improvement of the quality

CC3: Knowing the changes in your clients' necessities and habits

CC4: Repetition of purchases

CC5: Satisfaction of the clients

CC6: Good reputation and prestige

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