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**The CEO's view of Knowledge Management and Organizational
Learning: Technology- or Persons-centered?**
Results from an empirical study in Spain

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ABSTRACT

In today's competitive landscape organizational learning and knowledge management initiatives are emerging of powerful sources of competitive advantage. In this paper, we report on the design and expected result of a survey on knowledge management, which has been designed putting special emphasis on the interplay between the technical and non-technical aspects of learning and knowledge management initiatives. Questionnaires have been sent to 1100 firms from 11 industries in Spain, in order to be able to conduct both intra- and inter-industry analysis. In addition, in order to enrich the results, in-depth interviews are going to be held with selected companies. This will allow us to report on (1) what knowledge management initiatives are planned and carried out, (2) the role of technology in these initiatives, (3) the role of non-technical aspects like career planning and human resource policies, (4) the perceived effectiveness of the initiatives, and (5) the main underlying causal dynamics at work.

INTRODUCTION

Today it is widely accepted that the creation and deployment of knowledge is key for firms' competitiveness. Trends in the environment such as markets' globalization, technical evolution, and deregulation are changing the competitive structure of markets in such a way that the effectiveness of traditional sources of advantage is blurred. The main reason is that they tend to be insufficient because more and more any firm can have access to physical or financial assets, and even to technology, in the same open market conditions.

Consequently, firms need to concentrate more and more in the development of distinctive capabilities, own "ways of doing things" which are difficult to imitate by competitors. Such capabilities are always, eventually, related to persons in the firms –who at the end of the day develop and apply their capabilities based on "what they know". This is why developing idiosyncratic knowledge, which gives meaning to the firm's distinctive ways of doing, is increasingly important (Bell, 1973; Drucker, 1993). This, in turn, implies learning, both individual and collective. It is precisely because of the involved learning that the idiosyncratic ways of doing in a firm are difficult to imitate –because they cannot be bought in open markets, they have to be *learned*, which requires time, effort, and almost always a specific *context* (organizational, social, etc.) that is difficult to reproduce in a firm different from that in which it originated (Brown and Duguid, 2000).

Thus, the good management of the processes that lead to the development of distinctive knowledge is becoming an imperative in many firms. Many organizations are implementing initiatives aimed at facilitating the creation, sharing, and integration of knowledge. These

initiatives are referred to as Knowledge Management. However, a wide variety of such initiatives have been observed. This is, among others, one of the reasons for today's omnipresence of the KM concept. It's not that everybody understands the same under the name of KM: To some it is not new –man has always managed knowledge, in a sense, they argue. To others, managing knowledge is impossible –only the processes leading to its development can be managed. Still to others the term is mainly linked to the recent dramatic progression of the Information and Telecommunications Technologies (ICT). Independently of so many points of view, KM makes sense as a response to the competitive challenges faced by today's firms, as advanced above.

THEORETICAL FOUNDATIONS

In the past few years, the theoretical evolution in the field of KM has been notorious. A first stream of research (Conner and Prahalad, 1996; Grant, 1996; Spender, 1996), rooted on the resource based view of the firm, has pointed out that knowledge is a resource that accomplishes the characteristics of inimitability, scarcity, path dependency, causal ambiguity, etc., which have led them to establish the knowledge-based theory of the firm. A second stream of research has pointed out the importance of linking knowledge and strategy (Cohen, 1998; Andreu and Sieber, 1999; Zack, 1999). From a more technological point of view, the IS literature has studied the consequences of encoding knowledge into information and sharing it among the organization's participants (Davenport, De Long and Beers, 1998; Alavi and Leidner, 1999; Robey, Bourdeau, and Rose, 2000). The intellectual capital school (Edvinsson and Malone, 1997; Stewart, 1997) has worked on the development of measures for the impact of knowledge on the organization's performance, trying to quantify the value of an organization's intangibles. Some more epistemological studies (Nonaka, 1994, Spender, 1994; von Krogh, Roos and Slocum, 1994; Cook and Brown, 1999) have deepened our comprehension about the distinctive characteristics of different types of knowledge. Finally, studies of organizational learning have contributed significant insights into the embedded, context-dependent and motivational nature of learning (Argyris and Schön, 1978; Brown and Duguid, 1991; Kim, 1993; Tyre and von Hippel, 1997).

However, as Teece (1998) points out, an integrative framework is still missing, and so he proposes some relevant research topics that could help in achieving a more integrated view. In particular, following the so-called knowledge-based view of the firm (Conner and Prahalad, 1996; Kogut and Zander, 1996; and Grant, 1996), he claims that only scanty empirical evidence exists of “firm-level competitive advantage in open economies flowing fundamentally from difficult to replicate knowledge assets”.

In addition, little empirical evidence exists about the state of knowledge management initiatives in organizations. Some case studies have been carried out (Fries and Kruse, 1995; Davenport and Prusak, 1997; Sieber, 2000). One notorious exception is the study of Alavi and Leidner (1999) about knowledge management systems, in which chief information officers (CIOs), information systems (IS) managers, and general and functional areas executives participated, representing companies with considerable IT investments from twelve countries. The focus was the stages of consideration or development of knowledge management systems in these companies. Although the respondents were not drawn from a random sample of organizations or industries and the size of the sample was relatively small, Alavi and Leidner consider that, as they were chosen purposefully,

“(t)heir views do represent a range of industries, organizational levels, and nationalities. [Hence, the study] does offer some insights into needed and relevant research in the area of KMS.” (p. 23)

As a contribution in closing the gap toward an integrative framework sustained by empirical evidence, we conducted a cross-industry study of knowledge management and organizational learning in Spanish firms, addressed to their CEOs in order to investigate to what extent a strategic vision of KM and OL existed. In addition, this permits also to study the extent to which KM is considered to be a source of sustainable competitive advantage. We have also gotten empirical evidence on how top executives view KM in broad terms, including the distinction among different knowledge types, learning –both individual and organizational– and KM implementation issues.

OBJECTIVES AND RESEARCH QUESTIONS

As the different literature streams suggest, knowledge management and learning initiatives have a broad variety of initiators in organizations. While information coding and technological initiatives are typically situated within the responsibilities of an IS department, the development of learning cultures, improved communication structures and change initiatives are mostly carried out by the human resource department. And still other initiatives, in which knowledge was considered to be at the root of the firm’s competitive advantage, knowledge management initiatives were sponsored directly by general management. Following the insights gained by Alavi and Leidner that the 60% of the initiators of KMS in organizations with or developing KMS are Senior General Managers, we address our questionnaire to General Managers. In this way, we pretend to gain additional insight into one of the main conclusions of Alavi and Leidner’s report:

“KMS are multi-faceted. Effective KMS involve far more than just technology, encompassing broad cultural and organizational issues. In fact, effective resolution of cultural and organizational issues were identified as major concerns in the deployment of KMS”

For this reason, as pointed out above, we put special emphasis on the non-technical aspects of learning and knowledge management initiatives. Our a priori framework includes the belief that different forms of knowledge should be managed in different manners, so that the role of technology is also bound to be different; that different learning and knowledge development approaches vary across different knowledge types and strategies; and that at least in part, employees’ professional careers should be designed keeping knowledge aspects explicitly in mind.

In addition, we have a deeper look at another concern raised by Alavi and Leidner in their study’s conclusions. As they say, “it is important to try to develop metrics to assess benefits of KMS.” We have explicitly asked what types of metrics managers use in organizations to measure the outcomes of the implementation of KMS.

Finally, from a technological perspective, we look at the evolution the importance of technological solutions. Alavi and Leidner found that

“An integrated and integrative technology architecture is a key driver for KMS. (They) seem to require a variety of technological tools in three areas: database and database management, communication and messaging, and browsing and retrieval”

We studied whether this assertion holds across industries.

RESEARCH METHODOLOGY

We decided to include a broad range of industries in the study, as this would allow us to calibrate differences among industries, and relate them to their knowledge “intensity”. The firms included in the sample belong to 11 industries (Chemicals; Consumer Products, Retail & Distribution; Energy & Utilities; Financial Services & Insurance; Health; High Growth; High-Tech; Life Sciences; Manufacturing; Telecom, Media & Networks; Travel & Transports). In addition, the study was designed to include not only the obvious and relatively better documented technological aspects of KM, but also its linkage to competitiveness and strategy, its dependency upon the types of knowledge being considered and, significantly, the associated learning processes. As Alavi and Leidner point out as one of the conclusions of their study

“KMS is not just for consulting and professional firms. A broad range of industries are looking into this area, feeling that they can potentially benefit from KMS”.

Selecting a broad range of industries allows the establishment of degrees of importance of KM initiatives, studying the existing differences among industries, and relating them to their knowledge intensity. Establishing selection criteria for the sample of turnover (>120 million Euro) and number of employees (>50), an overall sample of 1100 firms was obtained, which probably will allow for a study of intra-industry differences. It was presumed that small companies with few employees have less need for a formalized knowledge management initiative, as in these companies informal structures and communications operate with high levels of effectiveness.

From the issues raised in the preceding section, we set up a questionnaire with 7 differentiated sections in addition to the obvious one relating to company and industry demographics: (1) How is the KM concept understood in organizations, (2) types and sources of knowledge, (3) learning, (4) culture and organizational context, (5) technological platform and support, (6) investments, measures and results of KM, (7) competitive constraints.

The questionnaire consisted of 37 questions, of which 27 were closed (using seven-point Likert scales), and 10 were open-ended asking for perceptions and contextual explanations about the research questions. The questionnaire was designed in cooperation with a number of experienced firms in the knowledge management arena, and special care was put in making sure that the non-technological aspects were well understood and explicitly included. It was pre-tested by eight general managers before distribution. In order to improve the response rate, an introductory personalized letter to the survey recipient and a self-addressed, stamped envelope was included. Follow-up phone calls were carried out to increase the overall response rate, which led to a final count of 130 valid questionnaires, representing a response rate of about 15%.

PRELIMINARY RESULTS

Although we still have not carried out a detailed analysis of the results, a preliminary inspection of the answers obtained permit to identify a number of interesting dimensions which seem to be relevant to understand both the CEOs' perception of KM initiatives and the corresponding expected results, as well as what are considered good contextual conditions to foster learning in organizations and who tends to be seen as responsible for such conditions to develop.

1. KM: three emerging perspectives

The study reveals that CEOs tend to perceive KM from three different perspectives: one centered on technology-based solutions for KM (36%), another on the human aspects of KM (34%), and a third emphasizing issues of “intellectual capital” measurement (7%). Finally, a few companies have integrated views (15%), or still do not have a clear idea on KM (8%).

The dominance of the two first of these perspectives deserves to be underlined. Although the questions leading to this finding were open and thus no hard, numeric analysis is possible, it is nevertheless revealing that these two perspectives appear very clearly for example in the question which asked for a definition of KM. Two very clear-cut paths can be identified where either CEOs link the concept to the functional capabilities of technology, to the point of making KM appear to be an oxymoron without them, or they conceive KM as something that needs to be thought of in the absence of technology, because it relates to genuinely human activities which should not be “forced” by technological considerations. It is interesting to observe that very few of the conceptions make an explicit effort to actually integrate those two dominant perspectives, although it can be said that many of the non-technological views are ready to accept that technology could play a supporting role in the implementation of KM systems. Finally, it should be pointed out that the minority that center their conception of KM on issues related to intellectual capital, put their emphasis on the measurement aspect of it. This could be due either to a genuine concern about the problems associated with the determination of the “quantity of assets” that the knowledge pool amounts to in an organization, or simply to the fact that in certain contexts (e.g., the auditing and accounting environments), this has been, by and large, the dominant aspect considered in the intangible asset arena.

As we point out below, those two dominant perspectives give way to the main distinctions that can be made in the types of answers that were obtained in the study.

2. Knowledge types and learning in the different perspectives

Not surprisingly, when we turn to what types of knowledge are more explicitly considered, and to what kind of learning CEOs link to the KM concept and initiatives, the ones emphasizing the human-centered perspective put more weight on tacit and collective knowledge than the one centered on technology. This comes as an explicit recognition of the fact that technology-based “solutions” for KM are in principle more appropriate for explicit and individual knowledge (although a series of technology-based ideas for example in CSCW have been proposed and developed). Interestingly enough, however, when it comes to learning CEOs put strong emphasis on team learning almost regardless of the perspective from which they understand KM. It seems like “team learning” is conceived as almost the “one and only” learning in an

organizational context (“individual” learning takes place in the classroom at school). This is interesting when seen in combination with the preceding result, as it points to complex issues regarding how technology can support collective learning and thus make KM truly effective for firms under CEOs who see it under the first perspective.

It also interesting to note that when confronted with the concept of *internal* knowledge, understood as that which is necessary to compete but that cannot be found in the open market (and so it has to be developed internally) (Andreu & Sieber , 2001), more than 50% of the CEOs said that at least 25% of the knowledge used in their organizations was internal in that sense. In this context, it is nevertheless surprising to realize that more than the 90% of the answers considered that KM was a potential source of competitive advantage. Although deserving further investigation, one is tempted to conclude that either that “potential” is difficult to materialize (because without internal knowledge is hard to actually develop an advantage), or that the internal knowledge concept and its implications are not fully understood. This second alternative would tend to be supported by the fact that almost 30% of the responses left the internal knowledge section of the questionnaire unanswered. The internal knowledge “components” identified, however, reveal that in some cases the concept is well understood, as more than 20% linked it to “internal procedures known only to the specific organization”, almost 15% to technical processes having to do with specific production / operations practices, and more than 5% to organizational culture in general.

Finally, although also deserving further analysis, the study also points in the direction that organizations are not ready to accept outsourcing as a good source of learning for their members, which would come as an explicit recognition of the importance of the internal knowledge content when it comes to choose the best way to actually develop it. As the next section also points out, an organizational context that fosters knowledge sharing is seen as instrumental in order to achieve learning, although making explicit efforts to create such a context is not seen as needed.

3. Organizational context, culture and roadblocks to effective KM in organizations

When it comes to consider the importance of corporate culture and organizational context, again not surprisingly, CEOs under the second (human-centered) perspective tend to see them as relatively more significant. Regardless of the perspective, however, the role of culture and organizational context tends to be conceived from a negative angle, with a perception that often they impede KM development. And, interestingly, when this occurs, the blame goes practically always to the organization’s employees, who are said not to be “motivated enough”.. Furthermore (or consequently), CEOs don’t seem to be ready to undertake any action (for

example in the incentive systems area, or in the organizational structure field) in order to improve the situation when perceived as not satisfactory. Nevertheless, more than 60% of the respondents stated that their organizations “had done” something in the KM arena, be it in the form of completed projects in the area or in the form of on-going projects. The majority of these projects had a clear technological component, an issue that we take in the next section.

4. Technological platforms and supports

Very often, the KM projects which the respondents referred to had a technological component. For example, almost a 20% included an intranet or an extranet, and more than 10% comprised databases and data warehousing technologies. As for the technological characteristics considered important, a lot of emphasis seem to be put on tools that facilitate communication (more asynchronous than synchronous), database integration, content searching and classification, expert systems of different sorts, and accessing information *about* knowledge, be it about its “quality”, or appropriateness to a certain situation at hand, and the like. Technology that facilitates personalization and integration of different content was also considered useful. Other more technical characteristics mentioned were response time, and simple and intuitive interfaces. A first analysis regarding how the technical characteristics related to the different perceptions of the KM concept reveals that the human-based perspective puts more emphasis on skills and knowledge directories (pointing to *the persons* that have them), and on community building and maintaining infrastructures. In contrast, the technology-driven view emphasizes information classification facilities and all sorts of databases, underlying the so-called “best-practices databases”, which, of course, assume that best practices can be conveniently codified and made explicit.

5. Investments

It is very clear from the study that investments in KM are relatively small in general. Relative to total headcount, the proportion of people devoted to KM rarely goes over 3%, while relative to revenues, KM budgets are rarely above 1%.

There are probably at least two reasons why this is the case. On the one hand, KM efforts are still very new, and although the “espoused theory” (Argyris and Schön, 1978) seems to be that there is competitive potential behind KM initiatives, materializing them doesn’t appear to be easy in general. On the other hand, CEOs tend to view this area as something that could “happen spontaneously” for the most part, because it is in best interest of employees, for whom its usefulness should be clearer than it is –making some investment in a well conceived supporting technology would be enough. Of course, this is in open contradiction with a view

where knowledge and learning are important in order to be competitive, which would call for a thorough reflection on strategic objectives, capabilities needed, implied development, and the corresponding knowledge structuring and learning fostering initiatives, which would eventually guide the appropriate selection of technological supports and systems. The fact that numerous consultants seem to put the technological aspect of their solutions in the first row of their KM offerings to clients may be part of the cause for this situation, which is in clear need of improvement.

SOME CONCLUSIONS

Our study has permitted us to take a first glance at some relevant aspects of KM as seen by CEOs of large companies across different industries and competitive circumstances. Some of them deserve further analysis and research, and the cross-industry characteristic of our sample has been not exploited as it could yet, but nevertheless some salient issues can be already pointed out. First, there are two clearly dominant perceptions of the KM concept in the CEOs' minds: one centered on human aspects and the other much more technology-based. A less frequent third puts emphasis on intellectual capital measurement aspects. Its potential for competitive advantage is seen as high. Second, as it could be expected, depending of which perception they have, other aspects of KM, in particular the potential benefits of certain technology-based systems and support, are given more or less importance and weight. Third, team learning is considered the most effective form of learning in organizations, pretty much regardless the type of knowledge to be developed. Forth, corporate culture and context are seen as fundamental to motivate employees for learning and effective knowledge deployment. In spite of this, CEOs tend not to be ready to take definite management action (for example in the management systems arena) in order to foster the appropriate culture and context, blaming employees for the lack of motivation. Finally, KM budgets run relatively low both in terms of people and monetary resources.

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