

Knowledge management effectiveness factors: the role of HRM

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Abstract

Purpose – Within the search of the key factors that explain knowledge management (KM) effectiveness, this paper aims to advance a simultaneously conceptual and practical framework that links human resource management (HRM) and KM.

Design/methodology/approach – A literature-based preliminary framework assumes that a number of critical KM characteristics and KM-related human resource (HR) practices impact on KM effectiveness. Qualitative methods are used for data collection and analysis. Three knowledge-intensive Spanish business units of multinational companies are the target case-study settings.

Findings – Systematic patterns are found regarding the impact of critical KM characteristics and KM-related HR practices on KM effectiveness. An induced framework, encompassing a number of specific variables and propositions, is developed.

Research limitations/implications – The lack of a longitudinal study demands caution in the results interpretation. Also, similar studies in cultural contexts other than Spain could produce differing results. Moreover, further qualitative methods would be helpful for explanatory framework refinement, whereas quantitative surveys would test propositions, thus assessing the statistical generalisability of the results.

Practical implications – KM-enhancing recommendations for practitioners are discussed. Special emphasis is placed on the great complexity that social and cultural issues pose on KM, and on senior managers' key actions aimed at involving the HR function more in KM strategy development.

Originality/value – This paper tackles KM-related social and cultural issues through a broad but practical HRM perspective. It helps to advance a better understanding of the causes of KM success or failure, useful both to academics seeking theory building and to practitioners interested in insightful advice.

Keywords Knowledge management, Human resource management, Case studies, Spain

Paper type Research paper

Conceptual framework and research questions

The recognition of knowledge as a key strategic asset (e.g. Grant, 1996; Spender, 1995; Stewart, 1997; Teece, 1998; Tissen *et al.*, 2000; Von Krogh, 1998) is very popular today. Hence, the topic of knowledge management (KM) has benefited from countless and highly varied contributions (e.g. Brown and Duguid, 1998; Davenport and Prusak, 1998; Grant, 2001; Leonard, 1995; Nonaka and Takeuchi, 1995; Quintas *et al.*, 1997; Scarbrough and Swan, 1999; Sveiby, 1997; Swan and Scarbrough, 2001; Wiig, 1997).

More specifically, consistent with the well-known limitations of those KM approaches too narrowly focused on information technology (IT), the key importance of cultural and human aspects as potential levers or inhibitors of the processes of knowledge creation and transfer is widely acknowledged (e.g. Fahey and Prusak, 1998; Lank, 1997; Martiny, 1998; McDermott and O'Dell, 2001; Newell *et al.*, 2001; O'Dell and Grayson, 1998; Ruggles, 1998; Storey and Quintas, 2001). Even so, as descriptive industry studies have shown (e.g. Almansa *et al.*, 2002; KPMG Consulting, 2000; PwC, 2001), many KM initiatives tend to neglect human issues. Similarly, several academics have commented on the relatively little consideration of cultural and people issues in the KM literature (e.g. Scarbrough and Swan,

1999; Soliman and Spooner, 2000; Swan *et al.*, 1999). Despite that, the key obstacles being reported as knowledge-leveraging inhibitors – beyond IT tools – are invariably those related to the “softer”, non-technical side of KM.

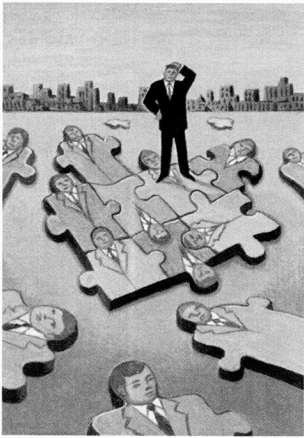
Moreover, (strategic) human resource management (HRM) deserves an explicit consideration in the people-centred KM debate. In leading organisations and industries, people management is assumed to be one of the top strategic priorities (e.g. Baron and Kreps, 1999; Mabey and Salomon, 1995; Mueller, 1996; Storey, 2001). It is worth mentioning the increase of research dealing with the relationship between human resource (HR) practices and organisational performance (e.g., Arthur, 1992, 1994; Becker and Gerhart, 1996; Delaney and Huselid, 1996; Delery and Doty, 1996; Huselid, 1995; MacDuffie, 1995; Pfeffer, 1994). Although from different perspectives and with noticeable differences as to specific practices, empirical support for the positive impact of HRM on organisational performance can be assumed.

Certainly, both knowledge and human resources (HR) are being increasingly regarded as key levers of competitive advantage in today's global, dynamic and complex business environment. Importantly, in the context of knowledge work (e.g. Alvesson, 1993; Davenport *et al.*, 1996; Davis and Botkin, 1994; Edvinsson and Sullivan, 1996; Starbuck, 1992; Tampoe, 1993; Ulrich, 1998; Winch and Schneider, 1993), people and knowledge are two concepts inextricably joined. Individual human beings are the ultimate knowledge creators and bearers (organisations do not think by themselves, although they may have “knowledge enabling” contexts and “memory” systems). Accordingly, great care has to be taken so as to increase their capability as organisational knowledge enhancers and, as a result, the rigorous and strategic management of people can act as a trigger toward effective knowledge-leveraging processes. In fact, both people and knowledge are to be regarded as having special potential as scarce and idiosyncratic resources, consistent with the premises of the resource-based approach to strategic management (e.g. Grant, 1991; Peteraf, 1993; Rumelt, 1991; Wernerfelt, 1984). Indeed, a number of rigorous works exist that, while (more loosely or closely) related to a resource-based view, also deal with KM (e.g. Grant, 1996; Kogut and Zander, 1992; Spender, 1996; Tsoukas, 1996; Zander and Kogut, 1995) or HRM (e.g. Kamoche, 1996; Lado and Wilson, 1994; Mueller, 1996).

Despite the above arguments, and the fact that practitioners are – with the lead of global companies – increasingly aware of the importance of the fit between KM initiatives and cultural and people-related issues, such an integration is not always as successful in business practice as it would be desirable. In other words, although managers are usually keen to recognise the relevance of human and social issues for KM initiatives to succeed, a number of structural, organisation-embedded elements (e.g. rigid structures, “old-fashioned” cultural traditions, KM-unfriendly policies and routines, communication pitfalls) create obstacles to the KM efforts which are quite difficult to overcome – even despite initial managerial commitment to do so. Certainly, there is need for studies that help to advance toward shedding light on how to turn managerial concern into effective managerial ability to change the way of doing things.

Moreover, academics are not rigorously taking systematic steps toward comprehensive theory building linking KM and HRM. Certainly, sound academic studies do exist, both empirical (e.g. Arthur and Aiman-Smith, 2001; Bontis *et al.*, 2002; Edmondson, 1999; Inkpen, 1996; Inkpen and Crossan, 1995; Kusunoki *et al.*, 1998; Lynn, 1998; Scarborough, 2003; Tampoe, 1993) and theoretical (e.g. Brown and Duguid, 1998; Hedlund, 1994; Hislop, 2003; Kamoche and Mueller, 1998; Nerdrum and Erikson, 2001; Ryan, 1995; Starbuck, 1992;

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Storey and Quintas, 2001). Even so, most of them are mainly linked to (specific aspects of) one of the two main areas of discussion (i.e. KM and HRM).

In fact, human and cultural issues in the context of KM are often mentioned in rather generic and sometimes too abstract terms (e.g. cultural change, values of cooperation and trust, employee commitment, appropriate climate for knowledge sharing), fact that does not help much toward comprehensive either theory building or practitioner-oriented advice.

Specifically, the research questions that propel this investigation are:

- Why are KM initiatives often not as effective as expected?
- How do HR practices affect the effectiveness of KM initiatives?

Methodology

Qualitative methods were selected because they fitted well with both the nature (complex processes) and the theory-development maturity stage (relatively emergent) of the phenomenon under study. Accordingly, a case-study strategy (e.g. Stake, 1995; Yin, 1994) was chosen. In a research process, case studies are especially appropriate to get rich insight about specific issues which need a careful attention to detail, especially when the phenomenon under study consists basically of processes – with research questions starting with “why” and “how” (Yin, 1994), as this investigation puts forward.

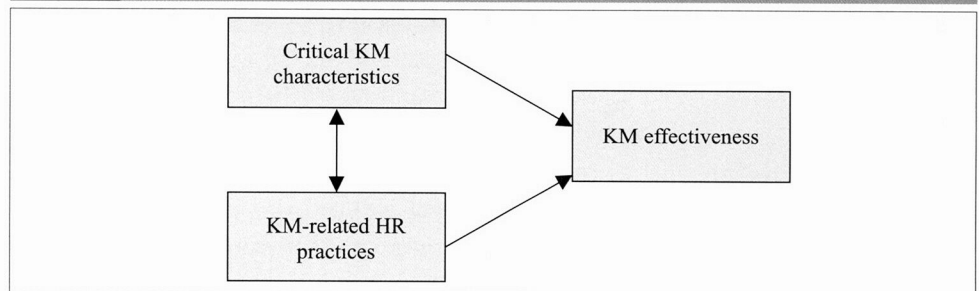
Taking into account the particular methodological choice made, a preliminary framework is proposed as the basis for the subsequent field study (see Figure 1). Although the main focus of this study is on HR practices, other KM issues must be considered in order to obtain a more accurate picture of the processes involved in determining KM effectiveness. So, a category labelled critical KM characteristics also appears in the preliminary framework, along with the KM-related HR practices and KM effectiveness ones. Critical KM characteristics and KM-related HR practices are assumed to have an impact on KM effectiveness. Besides, it is necessary to consider the mutual influence that may intervene between KM-related HR practices and the critical KM characteristics.

Consistent with the above discussion, the theoretical framework resulting from the literature review is necessarily broad and open-ended (Maxwell, 1996). In this sense, it was considered unwise – in this particular investigation – to formulate any hypotheses or propositions to be tested in the field study (Eisenhardt, 1989; Maxwell, 1996).

Taking the pre-empirical preliminary framework depicted in Figure 1 as a guideline, three organisations were selected taking into account their potential to shed light over the phenomenon researched (Stake, 1998), since they provided examples of different types of KM approaches in knowledge-work contexts. Each of the three cases is a Spanish subsidiary of a multinational knowledge-intensive company belonging to a different industry:

- business consultancy;
- railway maintenance services; and
- electric equipment design, manufacturing and maintenance.

Figure 1 KM effectiveness factors and the role of HRM: preliminary framework



In order to tackle the different elements of the preliminary framework, an agenda of interviews with a selection of members of the studied organisations was developed, complemented with the analysis of relevant corporate documentation. In each of the organisations people responsible of HRM and also of KM were interviewed. Where the latter position did not exist (i.e. in the railway services firm), the appropriate person in charge of KM issues was interviewed. Also, other people with managerial responsibilities at lower levels were interviewed, along with non-managerial employees. By talking to people from different hierarchical levels and linked to a number of departments, a high accuracy and comprehensiveness of data was sought by means of triangulation. Besides interview triangulation, further cross interview-document triangulation helped to increase the validity and overall quality of the empirical materials.

Case study overview

The field study was developed by means of a process of theoretical replication throughout the three cases under analysis. The preliminary framework was taken as a basis for data collection and analysis, from which relevant evidence was to be grasped and therefore a post-empirical framework could be analytically induced (Johnson, 1998). According to the indications by qualitative methodologists (e.g. Maxwell, 1996; Miles and Huberman, 1984), collection and analysis of empirical materials followed a flexible pattern. The outcomes of this research process are posited through two sections: first, the highlights of each of the cases are presented in the subsections below; second, the main elements of the induced framework are introduced in the next first-order section ("Discussion").

Case 1 – consultancy firm

The business setting studied in this first case is a consultancy division of the Spanish subsidiary of one of the largest global professional services organisations. In the late 1990s, a KM project was launched worldwide as a way to optimise the utilisation of a large number of databases that, at the moment, were dispersed throughout different subsidiaries, associate companies and departments, resulting not only in many inefficiencies, but also in not so evident opportunity costs. This KM project was one of the first attempts in Spain to tackle KM issues seriously. A KM corporate unit was created and a chief knowledge officer (CKO) appointed. The project had a strong initial technology-driven impulse, with the creation of a sophisticated and comprehensive corporate intranet as its cornerstone.

The KM department was aware of the importance of considering people and culture issues in order to guarantee the success of the KM programme. However, despite the technical soundness of the intranet developments, the obstacles to effective knowledge transfer were overwhelmingly dominated by cultural issues, such as low mutual trust and high fear to share – in the context of a fiercely competitive "up or out" career system – or the chronic employee turnover, which often impeded the transfer of individual knowledge into the organisational memory. Nevertheless, despite the drawbacks, the great effort invested in the KM project paid off and it can be assessed as highly successful, since the initial goals of database integration and widespread and versatile intranet-based information management were achieved.

Case 2 – railway maintenance services firm

The case analysed is a business unit that belongs to the Spanish subsidiary of a huge energy and transport multinational enterprise. Regarding KM, and prior to anything else, emphasis must be put on the fact that the firm did not have any formal KM policy (while researching about KM, it was interesting and intellectually challenging to hear the head of HR saying "we do not believe in KM"). Still, since the evidence shows the existence of highly effective knowledge creation and transfer processes, it can be assumed that knowledge was indeed managed – although not explicitly recognised as any "KM policy". Top management consciously rejected the KM "fashion" – so often introduced without a deep reflection about the current organisational situation and real needs.

However, since the firm had experienced a profound restructuring process during the last decade (an old-fashioned state-owned subsidised industrial setting was transformed into a competitive and flexible service supplier), a number of strategic programmes were implemented (a comprehensive total quality management (TQM) programme, a leadership project, an employee suggestion system, an integrated computer-based information management system, etc.) – some of them still active and linked to their own departments (e.g. TQM), and others evolving toward different initiatives due to changing business needs. Besides, organisational trust and commitment were effectively enhanced throughout the organisation, along with a careful management of an organisational culture which emphasised values of creativity and innovation, coupled by a firm spirit of team work, openness and transparency. The somehow crude conclusion in this case is that the firm did not need a formal KM project. Otherwise, KM was already embedded in the existing activities and policies, especially taking into account the effectiveness of a carefully followed philosophy of cross-functional communication, policy design and policy implementation – with a strong emphasis on integration and interdisciplinarity across the organisation.

Case 3 – electrical equipment design, manufacturing and maintenance firm

The business setting analysed is the Spanish subsidiary of a large multinational company specialised in the design, manufacturing and maintenance of a vast array of electricity-related products and industrial systems. The company is a truly global organisation; production centres, dispersed worldwide, specialise in specific products, which are then distributed to many countries. Nonetheless, KM in the Spanish subsidiary was launched in the late 1990s as a strictly national project, developed thanks to the services of a KM-specialised consultancy. From the beginning, the KM project was identified as the implementation of a KM tool based on intranet technology. The corporate HR department was responsible for the initiative, and defined it (following the consultancy software-package definition) as “a system to foster the sharing of critical knowledge by any employee across the organisation”. In other words, the KM software (rather than a comprehensive KM project) aimed at incorporating into an intranet-supported database any kind of work-related relevant ideas and suggestions of employees that could be later retrieved by others to help them do their jobs better. After a pilot project limited to certain departments and hierarchical levels, the KM tool was progressively extended to other parts of the organisation.

The HR department, in charge of the KM initiative, assessed it as a moderate success with a high potential of improvement. However, the views from other parts of the organisation were mixed, and in some cases contradicted the official position. In a way, the KM tool was, technically speaking, a success. A different story would be the assessment of the extent to which it helped to improve day-to-day work. Certainly, many people were eager users of the KM tool (although with extreme differences among departments), but too often the “critical knowledge” introduced into the database were irrelevant data, seldom retrieved – let alone applied – by anyone else than the initial creator of that “knowledge unit” – apart from the hierarchical supervisor of the KM tool evolution. Knowledge creation and transfer processes did exist within the firm, but paradoxically they were rather independent from the dynamics of the “official” KM policy. A number of reasons help to explain this odd (but quite probably not uncommon) situation. On the one hand, KM was narrowly identified as a “KM tool”, and business fashion appeared to have much to do with the decision to develop it. On the other hand, the responsibility for the process of KM design and implementation was given to a department (HR) that, in this particular case, had traditionally played a role (and had been viewed by the rest of the organisation in such a way) that did not enhance trust toward the new

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project. In fact, most departments continued sharing knowledge through the old ways, such as the previously existing and quite successful corporate intranet (of which the KM tool was just an appendix, by no means an integration device), or simply by the relatively effective dynamics of informal communication existing within many departments and small teams.

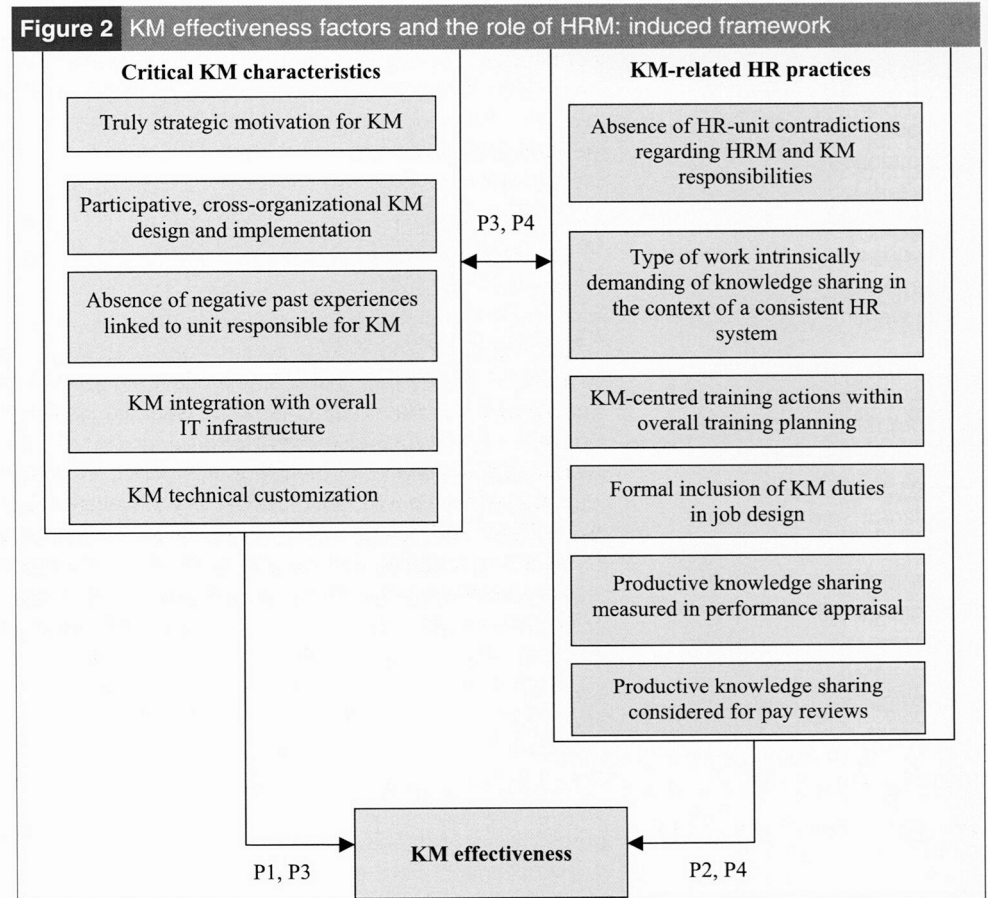
Discussion

As a result of studying and interpreting the evidence collected through the analytical lens provided by the preliminary framework, its components can be re-shaped toward a more elaborate framework. Each of the two broad categories impacting on KM effectiveness can be developed into a series of specific variables (see Figure 2). The connections between the evidence and the induced theoretical developments are explained below.

Critical KM characteristics

A first relevant aspect is about the reasons for the introduction of KM. While the consultancy firm tried to address a well-defined cross-organisational strategic challenge (the global integration of thousands of databases), the electric equipment manufacturer was mainly dragged by a superficial, fashion-lit enthusiasm, which resulted in a narrow and suboptimised approach to KM. As a result, a first variable is named truly strategic motivation for KM.

Moreover, the way in which a KM initiative is designed and implemented can also make a big difference in its success. As regards the electric equipment manufacturer, a strictly pre-planned, *ex-post* and top-down approach jeopardised the acceptance of the project by many units and people. Conversely, although not having adopted KM officially, the railway maintenance services firm showed a higher interdisciplinary, cross-functional and participative approach to dealing with the different policies which, consciously considered as interrelated factors, would contribute to the management of knowledge



(e.g. IT systems, culture management, HR issues, aspects of TQM, overall climate definition, etc.). Therefore, for a KM tool that is supposed to be aimed at fostering cross-organisational integration and synergy, its very design should involve representation from different organisational groups. The variable posited here is participative and cross-organisational KM design and implementation.

Also, the consideration of the organisational history of the unit responsible for implementing change programmes is often neglected in business practice. For instance, sometimes management are surprised that KM is not successful, despite vast resources, technical expertise and keen effort being devoted to it. One fundamental aspect has been forgotten: who is responsible for KM and how they are perceived by the people supposed to accept (and enact) KM. Imagine an HR department that had been previously in charge of a reengineering effort, which provoked a strong negative response by employees. Unsurprisingly, anything else coming from these HR people would be sceptically received, no matter how attractively it was presented. Details reported as to the consultancy firm customers' experiences, some of the reasons for the creation of the new KM unit, and also the electric equipment manufacturer's (suboptimal) experience, support the introduction of the relevant variable here: absence of negative past experiences linked to the organisational unit responsible for KM.

On the other hand, both in the consultancy and the railway maintenance firms KM was highly integrated with the rest of the IT infrastructure. In the first case, through a deliberate KM project functionally operational within the corporate intranet. In the second case, as part of the "unofficial" KM efforts, the different components of the firm's IT infrastructure were highly integrated and interdependent, playing a relevant role in knowledge creation and sharing efforts. Conversely, although the electric equipment manufacturer did have a formal KM tool, this was basically independent from the rest of the IT infrastructure of the firm. KM was developed in a way that ignored potential synergies stemming from an integration with corporate IT systems and, particularly, with the intranet. A variable that encompasses this issue is labelled KM integration with overall IT infrastructure.

Finally, the extent to which KM was customised in the three companies studied was highly diverse. From a complete internal development of the KM project in the consultancy company, totally adapted and idiosyncratic to the firm's own processes and context, to a rather standard software package developed by external consultants regarding the electric equipment manufacturer. Therefore, the evidence observed suggests a positive relationship between customisation and success of the KM initiative. The relevant variable here is KM technical customisation.

KM-related HR practices

In the consultancy firm, with a highly idiosyncratic and strategically integrated HR system, but in some aspects not especially KM friendly, the choice was to establish a "brand new" KM corporate unit. Thus, the HR department would not interfere with KM developments, but cooperate with the CKO in order to optimise the HR-KM synergy and, if appropriate, cautiously introduce some changes in HR practices (e.g. appraisal and reward systems more oriented at embracing knowledge sharing considerations). Regarding the electric equipment manufacturer, the corporate HR department had a place at the top management board, and so did the specific factory HR departments regarding their respective factory boards. Although corporate HR directions were generally strong and consistent, factory HR departments were mostly devoted to administrative personnel management and technical support to (more strategic) HR processes – the responsibility for the latter ones highly assumed by line management. As a result, an atmosphere of inconsistency as to the role played by HR specialists regarding KM was (unconsciously) propelled. In other words, factory HR departments were leading the persuasion process for the KM tool to be accepted and utilised by as many people as possible; however, these HR units had been rarely perceived as "strategic leaders", so scepticism toward the KM initiative was reinforced. The relevant variable here is named absence of HR-unit contradictions regarding HRM and KM responsibilities.

On the other hand, the specific features of the HR systems of the three firms under study were analysed. Although none of the companies had undergone specific changes in their HR systems in order to make them more suitable for optimising the creation and sharing of knowledge, systematic patterns were found in the relationship between HR systems and KM developments in each firm. For instance, the consultancy firm had a typical professional services industry “up or out” system, which encouraged and rewarded individual merit and promoted fierce internal competition. Although these characteristics are assumed, in principle, to act as obstacles for knowledge sharing, they were effectively integrated into a coherent HR system, highly accepted by employees. In fact, the direct impact from HR practices themselves on organisational performance, under the specific circumstances of this company, can be regarded as highly positive. Moreover, intrinsic requirements of the type of (knowledge) work developed by consultancy employees are:

- Intensive information exchange (with heavy use of IT), what incorporates a collective dimension in the apparently heavy individualistic atmosphere.
- Interpersonal dynamics, both within (e.g. collective desks where junior consultants work physically close to each other with their laptops) and externally to the company (e.g. high proportion of work at the clients' premises), thanks to which tacit knowledge is often shared and eventually optimised to the firm's advantage.

As a result, HRM relatively positive impact on KM effectiveness, rather than due to any “ideal” individual HR practices, was strongly driven by complex processes involving the way people used information and related to each other, within an HR system highly consistent with the industry requirements, business strategy (Miles and Snow, 1984) and (knowledge) worker characteristics (Lepak and Snell, 1999). Another relevant variable is then labelled as: type of work intrinsically demanding of knowledge sharing in the context of a consistent HR system.

However, serious training efforts related to KM diffusion throughout the organisation do deserve mention as a practice that in the consultancy firm has been indispensable for KM success. In any case, this specific HR practice ought to be understood as:

- a core and intrinsic part of the overall corporate training strategy; and
- part of a consistent and smooth HR system – conditions accomplished in the consultancy firm.

Conversely, the electric equipment manufacturer, although did engage in training activities related to KM, narrowly focused them on technical skills related to the utilisation of the KM tool, rather isolatedly from the whole of training planning. Consequently, a new variable is proposed: KM-centred training actions within overall training planning.

In this context, the consultancy firm management were aware that, although the broad targets of the KM project were being achieved quite satisfactorily, there was still a long way to go in order to synergise the HR system with KM requirements. Specifically, KM tasks beyond intranet information retrieval for daily work and, particularly, KM involvement in knowledge feed forward (e.g. Crossan *et al.*, 1999), were not considered as part of the formal job descriptions. Therefore, employees did not have a sense of responsibility in the development of the KM initiative. Besides, personal devotion to KM (e.g. by inputting project results with specification of obstacles, drawbacks, solutions to contingencies, etc.) demanded time and effort that were not considered as part of the appraisable individual performance. In other words, employees were not keen on investing time and effort (and therefore subtracting it from other more “productive” activities) in tasks seen neither as part of their jobs nor as having any impact on their individual performance. Top management acknowledged this situation and, at the moment of this research, were making preliminary plans for – leaving intact the HR philosophy and making only minor changes in the HR practices – extending some HR system elements to take into account KM needs. As to the electric equipment manufacturer, the above mentioned inconsistencies between the roles played by the HR units as to HR and KM responsibilities, along with the firm's situation regarding the critical KM characteristics depicted in the induced framework (see Figure 2),

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would jeopardise the credibility of any initiative of changing HR practices to make them more KM-focused. In fact, there were contradictory explanations by interviewees: from those (especially in the HR function) who believed in an early introduction of a financial incentive scheme related to knowledge sharing (measured by “knowledge unit” inputting into the KM database), to those plainly sceptical about the appropriateness of paying for “typing anything” into a database which, although formally regarded as a KM tool, had not proved to have any bottom-line positive effect. This discussion leads to the assumption that three other variables may have a relevant impact on KM effectiveness:

1. formal inclusion of KM duties in job design;
2. productive knowledge sharing measured in performance appraisal; and
3. productive knowledge sharing considered for pay reviews.

The case of the railway maintenance services firm showed evidence consistent with the whole of the above discussion regarding KM-related HR practices. Despite the inexistence of an “official” KM policy, the HR function at this company played a highly strategic and consistent role, both as part of top management and also as a close partner of line management. Moreover, all the processes and systems which contribute toward an effective management of knowledge (e.g. productive team-work philosophy, conscious maintenance of a climate of trust, IT-based information management) received relevant support by the HR function; that is, HR practices were formulated and implemented taking into account the organisational needs to optimise knowledge creation and sharing. Indeed, despite not having a formal KM policy, not only does not the railway maintenance firm situation contradict the above assumptions about the KM-related HR practices, but also perhaps that very fact helps the HR function to be aware of the real meaning and needs of KM – beyond the often narrow conceptions of many project/tool-based approaches.

Propositions

Four basic propositions synthesise the induced framework. Although each of them could be split into a number of more detailed propositions (taking into account the individual variables involved), only the basic ones are formulated – since this investigation has an exploratory aim and the propositions may need further refinement and testing. The first two introduce the impact of each of the independent variable constructs (i.e. critical KM characteristics and KM-related HR practices) on KM effectiveness:

- P1.* A set of five critical KM characteristics (truly strategic motivation for KM, participative and cross-organisational KM design and implementation, absence of negative past experiences linked to unit responsible for KM, KM integration with overall IT infrastructure, and KM technical customisation) has a positive impact on KM effectiveness.
- P2.* A set of six KM-related HR practices (absence of HR-unit contradictions regarding HRM and KM responsibilities, type of work intrinsically demanding of knowledge sharing in the context of a consistent HR system, KM-centred training actions within overall training planning, formal inclusion of KM duties in job design, productive knowledge sharing measured in performance appraisal, and productive knowledge sharing considered for pay reviews) has a positive impact on KM effectiveness.

P3 and *P4* emphasise the fact that, according to the case-study evidence, both independent-variable constructs are believed to be strongly linked to each other, regarding their impact on KM effectiveness. In other words, KM-related HR practices need the existence of the critical KM characteristics in order to be fully effective, and the other way round:

- P3.* The strength of the impact of any of the critical KM characteristics on KM effectiveness is positively related to the existence of KM-related HR practices.
- P4.* The strength of the impact of any of the KM-related HR practices on KM effectiveness is positively related to the existence of critical KM characteristics.

Implications for managers

Regarding the role of HR issues in KM initiatives, the basic conclusion is that there are extremely complex dynamics involved, so “quick-fix” solutions cannot be found. Instead, careful reflection by management on the specific, actual needs of one’s organisation concerning KM is essential, along with a deep awareness of the underlying motivations for such an initiative and, last but not least, a sensible assessment of the roles played by different people, groups and department across the organisation – not forgetting possibly differing perceptions among them – who might be given some responsibility on the KM strategy.

In this sense, there are many initial obstacles to be identified and avoided – or at least dealt with to some extent – if any KM strategy is to have any chances of success. In particular, managerial enthusiasm for developing a KM project may even blind them from seeing that different people and groups across the organisation may have different views on the real causes, goals or even need of such a project. In extreme cases, such differing assumptions may even jeopardise the project entirely. For instance, different groups with their own interests may use the “new” project to find long-expected excuses for accusing top management – or any other group or department in charge of the KM initiative – of having “hidden” goals (e.g. making certain knowledgeable people less indispensable) or rewarding the loyalty of a “favourite” department (e.g. the one that gets the responsibility to lead the KM project). True or untrue, founded or unfounded, these kinds of situations harm the company as a whole, and certainly may imply unbreakable negative loops as regards KM project development. Therefore, top management must take an utmost care for, not only not incurring into any gross contradictions or straightforward offences to anyone in the organisation, but also not appearing to be doing anything of such kind. People from the HRM function, provided that people development advanced responsibilities are assigned to them, can play a key role in these efforts: from changes in job descriptions to getting feedback in performance appraisal interviews, from being effective mediators in the diffusion of the corporate culture to fostering open and fluent communication channels.

Also, widely agreed and measurable goals should be established prior to launching the KM project. Too often KM initiatives are introduced by a simplistic pull of fashion, without a rigorous preliminary estimation of the impact of such initiatives on bottom-end (operational, financial, etc.) performance. Sometimes it may be even wiser to promote KM in a subtler manner, without the introduction of a formal KM initiative. In this sense, effective knowledge-leveraging activities can be effectively embedded in existing practices and systems, and this is particularly true when – given an appropriate knowledge-sharing cultural background – a highly empowered and positively perceived HR function leads the effort of entrenching a KM basis in all kinds of people management issues (as happened

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with case 2). Anyway, with or without a formal KM project, the HRM function should play an important role in the very design of the KM goals. Line and HR managers should work together to appropriately (re)define individual and group objectives as the introduction of the KM project may request. In this sense, the goals need to imply measurable bottom-line outcomes. In the case of the implementation of a formal KM (technical) tool, the goals can be related to the successful application of any "ideas inputted" into the KM system or database (recall case 3 as an example of misappraisal of KM tool success, based on simplistic count of "data inputting").

Besides, existing HR systems need not be drastically changed, should they be consistent and well aligned with the organisational strategy and organisational needs. Therefore, a predictably difficult balance must be met between, on the one hand, the existing benefits of current HR practices and potential perils of modifying them and, on the other, the existing limitations of current knowledge-leveraging processes and potential benefits of optimising them by the implementation of a formal KM initiative. If HR systems are well-designed indeed, and the way they work has been paying off in a particular context, there is no sign to rush into making a "revolution" in HR people's roles and responsibilities. In that case, it may well be even wiser that the involvement of the HR people means to cooperate with an independent KM function (as happened in case 1), thus making essential traits of the "traditional" HR system (e.g. a knowledge-sharing unfriendly "up or out" career scheme) as compatible as possible with "newer" KM-related organisational demands (e.g. promoting a knowledge-sharing friendly climate). In this sense, creative measures – such as emphasising the intrinsic knowledge-sharing nature of daily work (e.g. by including specific KM-related duties in the formal job descriptions and task planning) – need to be developed. The very definition of individual performance could also be expanded to include proactive sharing behaviours, measured, for instance, as "number of projects shortened in delivery time, improved in quality or cost-reduced, thanks to the feedback and suggestions voluntarily transmitted by people external to the project affected".

Furthermore, how can senior managers involve the HRM function more in the development and implementation of an enterprise KM strategy? First of all, the HRM function can only lead KM efforts effectively if the people behind that function are perceived positively and highly trusted by the rest of the organisation. Otherwise, it would be wiser to assign the KM leadership to another department or even create a new unit in charge of the KM initiative. Nevertheless, either a principal or a support one, the HR function will necessarily have some role to play in a KM strategy. In this sense, top management must be aware that, more important than any "recipe-like steps" to "motivate" HR managers to get involved with KM, what really counts is that the underlying conditions for such a motivation are subtly and consistently favoured. In that case, "perfect" motivation is not always guaranteed, but at least complete demotivation that otherwise would be likely to appear can be prevented.

Also, HR people need to be information gatherers, in the sense that they should record any suggestions and feedback from any relevant employee – especially from line managers and core knowledge workers – (especially, beyond formal suggestion-collection methods, subtler means such as knowledge-worker appraisal interviews or any kind of meetings with line management) and transmit them to senior management, so they are taken into account for the KM strategy design. This is important to be done prior to any formal announcement about the development of a formal KM project, since key project design issues – and even the assessment of the need of a formal KM project – can be crucially affected by the contents of the above mentioned upwards communication. Beyond the obvious benefits of building a more accepted and bottom-up shaped KM strategy, HR managers and specialists would predictably gain self-confidence and involvement in the KM strategy.

Last, and by not least, senior management needs to truly believe in KM. Beyond any impeccably performed presentation or internal advertising campaigns, a key factor in the way people react to the messages from top management is their perception on the consistency and fit between the espoused rhetoric and the observable behaviour (see Argyris and Schön, 1978). Only in this way can a "virtuous cascade" of "walking the talk" be effectively top-down promoted – from senior management to HR function/line management

to core knowledge workers to other shopfloor employees. This needs a great deal of emotional intelligence and empathy skills; senior management's self-assessment does not count much, what really counts is the assessment made by others, so senior management has to anticipate others' thinking by trying to understand – or at least figure out – alternative mindsets and frameworks of reference. As a result, it is preferable to be modest in formal statements but act consistently with them rather than being very ambitious in rhetoric terms but showing behaviours that do not meet – or even worse contradict – such claims – certainly, in the latter situation, the more ambitious the claims the more disastrous the outcomes.

These concerns, if true for any change strategy, are especially applicable to KM. Hence, a good KM strategy should not simply be another (fad-induced) step-like, recipe-based change process; otherwise, it should establish the very foundations and context for successful ongoing cross-organisational improvement and renewal.

Conclusion

The field study carried out in this investigation strongly supports the widespread claim of human and cultural issues as the key basis for the success or failure of KM initiatives. Specifically, this investigation adds value to previous literature and research by identifying a number of concrete elements which, within an empirically induced theoretical framework, provide a tentative picture of the impact that, on the one hand, a set of critical KM characteristics, and, on the other hand, another set of KM-related HR practices, have on KM effectiveness. This investigation has an exploratory aim, so further empirical studies could improve the outcomes of this line of research, using a variety of methodological approaches: qualitative methods would be helpful for explanatory framework refinement, whereas quantitative surveys would be the way to undertake proposition testing and to assess the statistical generalisability of the results.

Although specific HR practices have been assumed to have a direct impact on KM effectiveness, the broader discussion about the relationship between HRM and KM is highly complex. Accordingly, HRM has to be assessed on the basis of, on the one hand, the HR system internal and external consistency and, on the other hand, the existence of the set of critical KM characteristics regarded as a key requirement for KM success. In other words, the case-study evidence strongly supports the conclusion that there is little to talk about the role of HR practices in KM, unless both HRM and KM have been taken seriously by management.

Also, the KM-related HR practices are believed to optimise the effectiveness of the "strict" KM features, so a mutual reinforcement is assumed between KM-related HR practices and critical KM characteristics regarding their respective impacts on KM effectiveness. However, the critical KM characteristics might even be more important than any specific HR practices for KM effectiveness, as long as the HR system is internally and externally consistent (let us recall the consultancy firm, where a knowledge-sharing hostile but strategically consistent HR "up or out" system coexisted with relatively effective KM). This observation, which goes beyond the induced framework proposed, could be an interesting extension of this investigation. Apart from that, other issues have arisen throughout this paper that deserve further discussion. For instance, the fact that a firm officially refusing KM was indeed quite good at this task, or the situation in which a technically impeccable and carefully implemented KM tool did not lead to any significant improvement in the creation and sharing of knowledge. Academics and practitioners alike are invited to reflect critically on these (and other) issues, which may bring meaningful implications for a serious rethinking of both theory development and business practice.

Moreover, the researcher is aware of some of the limitations of this investigation. First of all, it has focused on KM and HR practices only in Spanish companies. Although it is not clear to what extent the results obtained would hold true in different cultural contexts, some preliminary comments can be put forward. Using Hofstede's (1980, 1984) framework as the basic conceptual background, also taking into account HRM (Gomez-Mejia *et al.*, 2001) and KM (Ford and Chan, 2003) focused adaptations, the way the Spanish cultural dimensions can potentially shape HR practices do not seem, in principle, to be especially positive for a

KM strategy (this argument is explained below). Indeed, although the fact that the three case companies were Spanish divisions of multinational corporations based outside Spain could lead to expect to find more "global" HR practices less influenced by local habits, the way HR practices were actually shaped in the case companies was to a relevant extent influenced by Spanish cultural values. Therefore, it is reasonable to expect that, should this investigation be replicated in different cultural contexts, some of the results could differ, due not only to differences in HR practices – and as a result their different impact on the KM strategy – but also due to the differences in the broader underlying (social and organisational) contexts, more or less favourable to KM. Four dimensions are discussed in the following paragraph: power distance, individualism/collectivism, uncertainty avoidance, and short-/long-term orientation.

First, power distance is higher in Spain than in other (basically Northern) European countries and Northern America, what turns into an obstacle for open communication, true (i.e. not authoritarian or paternalistic) involvement-winning contexts, transparency in the "rules of the game" (e.g. in career or incentive systems), and also inhibits employee perception of positive and exemplary behaviour by management. As for individualism, Spain, with relatively high levels of it, is closer to the rest of Europe and North America, as opposed to the high levels of collectivism present in many Asian societies (and to some extent in some Scandinavian countries). Collectivism, in principle, seems to be favourable to KM, since it promotes shared frameworks of reference and joint action toward common goals. In fact, Asian literature tends to favour community-based KM systems rather than tool-based ones, and there are authors who plainly reject the very KM expression (e.g. Takeuchi, 2001) – since it is the context for knowledge development that can be managed, not knowledge as such. Third, uncertainty avoidance is clearly greater in Spain than in Northern Europe, Northern America and parts of Asia, what clearly prevents creativity, proaction and innovative attitudes, all of them key points for successful KM. Fourth, Spain shares with Northern Europe and Northern America the Western short-term perspective, as opposed to the Asian long-term one. Therefore, Asian companies seem better prepared for implementing "non quick fix", long-term process-based strategies – as sound KM ones are supposed to be. In conclusion: on the one hand, Spain appears in all the "bad guy" groups, so KM seems an especially difficult task there compared with other cultural contexts; on the other hand, taking this paper's study and results as a starting point, a deepening into the analysis of HRM-KM relationships under different cultural contexts seems an interesting challenge.

Finally, other limitations of this study have to be acknowledged. In this sense, a longitudinal study would have been helpful to identify changes in time regarding the overall KM and HRM situation and, specifically, the evolution of KM effectiveness. However, the recent introduction of KM initiatives (or KM-equivalent practices) by the firms studied, along with the middle to long-term effects that such initiatives would have on broader organisational performance, somehow would mitigate this limitation. Besides, the methodology utilised does not tackle the empirical generalisability of the results – a limitation intrinsic to these methods, unavoidable until others (e.g. industry survey) are used. Nevertheless, such a methodology, qualitative and case-study driven, has indeed helped to pay detailed attention to organisational dynamics, leading to a careful formulation of variables and propositions – as well as to other reflections – in a way aimed at helping to advance toward a rigorous understanding of KM issues and, particularly, the role that in this context is played (through an HRM approach) by human and cultural aspects.

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