Fostering knowledge sharing through people management practices

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Abstract This paper focuses on the issue of knowledge sharing, one of the key mechanisms by which knowledge transfer can take place within organizations. The aim of the paper is to identify the people management practices that will be most effective in fostering knowledge sharing. We begin with a theoretical analysis of the socio-psychological aspects of knowledge-sharing behaviour in order to identify the variables that facilitate and encourage sharing. We also include a thorough review of the research to date on knowledge sharing and related behaviours. After identifying the factors expected to influence knowledge-sharing behaviour, we then proceed to detail the key people management practices that, according to theory and research, should be most effective in fostering knowledge sharing in organizations.

Keywords   Knowledge sharing; knowledge management; human resource management; people management practices; social capital theory; social dilemma theory.

Introduction

In today's economy the ability to build human capital and manage knowledge is vital for success in almost any organization. According to Barney (1991), resources that provide a source of sustained competitive advantage for a firm are valuable, unique, inimitable and non-substitutable. Human capital resources meet all of these criteria. Not only does higher quality human capital provide value for a firm, but high quality human resources are rare and they are causally ambiguous and socially complex, making them difficult to imitate or substitute (Wright *et al.*, 1994).

Human capital refers to the skills and abilities of individuals or the stock of knowledge within an organization. While human capital is necessary for achieving a competitive advantage, the knowledge held by individuals must also be passed along to others in order for its value to be appropriated and leveraged. Thus, the effective management of knowledge flows is necessary for increasing the knowledge stocks that will sustain organizational success.

Knowledge flows include the creation, transfer and integration of distributed knowledge. In this paper we focus on knowledge transfer. In particular, we study voluntary knowledge sharing, one of the key mechanisms by which knowledge transfer can take place within organizations. Based on a thorough review of the literature on knowledge sharing and related behaviours, and a theoretical analysis of the socio-psychological aspects of

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knowledge-sharing behaviour, we identify people management practices that should be effective in facilitating and encouraging knowledge sharing.

Whereas knowledge sharing among core employees may be particularly important in terms of achieving a sustainable competitive advantage, in most cases knowledge sharing will be desirable for the majority of an organization's employees. According to Nonaka and Takeuchi (1995) 'everyone has, to some extent, become a knowledge worker.' Davis-Blake and Hui (2003) state that 'all employees have the potential to impact firm's bottom line.' Thus, in addition to the importance of knowledge sharing among core employees, we agree with Kang *et al.*, (2003) that it is vital for non-core employees to share their knowledge with core employees as well. For example, valuable information can be gained from production workers or sales representatives who have special insights into the production process or the client's needs. External partners, such as consultants or partners in joint ventures, can likewise be an excellent source of new knowledge (Matusik and Hill, 1998). Therefore, we propose a set of people management practices to encourage knowledge sharing among a wide range of organizational employees, both core and non-core.

Socio-psychological determinants of knowledge sharing

In order to identify management practices that may encourage and sustain knowledge sharing, we first analyse the socio-psychological nature of this behaviour. On a micro-level, we use the psychological theory of reasoned action to shed light on individual motivation to share knowledge. We then draw on three additional theories from a sociological perspective, social capital theory, social dilemma theory and social exchange theory, to further understand the social dynamics of knowledge sharing (Cabrera, 2003).

Theory of reasoned action

According to Fishbein and Ajzen's (1975) classic theory of reasoned action, the intention to engage in a specific behaviour is determined by attitudes towards that behaviour as well as by perceptions of social norms. Attitudes are determined by beliefs regarding the outcomes of the behaviour and an evaluation of these outcomes. Subjective norms refer to beliefs as to the existence of social expectations regarding behaviour.

Many studies have successfully tested this theory by providing evidence of the link between attitudes and perceived norms, intentions and behaviour (Kim and Hunter, 1993). When applied to knowledge sharing, this theory predicts a link between attitudes and subjective norms about knowledge sharing, intentions to share knowledge and actual sharing of knowledge.

> *Proposition 1:* Positive attitudes towards knowledge sharing will be positively related to intentions to share knowledge and, consequently, to knowledge-sharing behaviours.

> *Proposition 2:* Perceived norms for knowledge sharing will be positively related to intentions to share knowledge and, consequently, to knowledge-sharing behaviours.

Reasoned action theory suggests that, in order to influence intentions to share knowledge, one must first identify the factors that affect people's attitudes towards sharing and their perception of norms for sharing. The following theories suggest a number of factors that may

influence knowledge-sharing attitudes. They also help to identify factors that may facilitate knowledge sharing by creating an environment conducive to sharing.

Social capital theory

Social capital refers to close interpersonal relationships that exist among individuals (Bolino *et al.*, 2002). It is believed to be a valuable organizational resource because it facilitates the interactions among organizational members that are necessary for successful collective action (Leana and Van Buren, 1999). There are three dimensions of social capital: structural, cognitive and relational (Nahapiet and Ghoshal, 1998). The structural dimension refers to the pattern of interactions among individuals. This includes the ties or connections among network members as well as the overall network configuration, which considers factors such as structural holes, centralization and density of the network. The cognitive dimension of social capital is gained through a shared language and shared narratives among network members. Shared language and narratives increase mutual understanding among individuals and this helps them to communicate more effectively. Lastly, the relational dimension is the affective part of social capital. It describes network relationships in terms of interpersonal trust, existence of shared norms and identification with other individuals in the network. The relational dimension, therefore, deals with the nature or quality of network connections.

With regard to knowledge sharing, the first two types of social capital determine whether or not individuals have the opportunity to share their knowledge with others. The opportunity to share is increased when individuals spend more time together, not only because increased interaction leads to more frequent communication, but also because communication is more effective due to the fact that these interactions also result in a shared language and codes. Thus increasing structural and cognitive social capital should help to *facilitate* knowledge sharing.

> *Proposition 3:* Social ties and shared language will help to create an environment conducive for knowledge sharing and will, therefore, be positively related to knowledge-sharing behaviours.

The third dimension of social capital, the relational dimension, influences whether or not individuals have the motivation to share what they know with others. Although the opportunity to share may exist, an individual may not be willing to share. The willingness or motivation to share will be higher when employees trust and identify with one another. So, relational social capital should help to *encourage* knowledge sharing.

> *Proposition 4:* Trust and group identification will encourage positive attitudes toward knowledge sharing and will, therefore, be positively related to knowledge-sharing intentions and behaviours.

Another important part of relational capital, shared norms, is also related to knowledge sharing, although, as predicted by reasoned action theory, the impact of norms on intentions is likely to be direct rather than mediated by attitudes.

Social dilemma theory

Social dilemmas describe situations in which the rational behaviour of an individual – defined in pure and simple economic terms – leads to suboptimal outcomes from the collective standpoint (Dawes, 1980; Kollock, 1998). The voluntary provision of a public

good is a paradigmatic case of a social dilemma in which narrow rationality may incline individuals not to contribute to the provision of the shared resource (public television, for example) and to free-ride on the contributions of others (Hardin, 1968). Of course, if that strategy dominates, there are no contributions and so the public good does not get provided.

Knowledge repositories in organizations can be construed as public goods in which individuals contribute with their ideas and benefit from the collective accumulation of knowledge (Connolly *et al.*, 1992). Contributing to organizational knowledge repositories creates the same type of dilemma found in other public good situations and may, therefore, be subject to the same social dynamics. Based on prior research on social dilemmas, Cabrera and Cabrera (2002) identified three types of interventions that can help to decrease the probability of knowledge hoarding: restructuring the perceived pay-off function, increasing efficacy perceptions and increasing feelings of identification with the group.

The literature on social dilemmas has shown that the likelihood of an individual contributing to a public good increases as they associate a greater value with the public good or a smaller personal cost in contributing (Kollock, 1998; Van Lange *et al.*, 1992). Thus, knowledge sharing should be less likely when costs are associated with sharing, whereas knowledge sharing should be greater when rewards are associated with sharing. The probability of sharing also increases when individuals perceive that their contributions make a difference, that is, their self-efficacy is high. Self-efficacy refers to a person's belief in his or her ability to perform a specific task (Bandura, 1997). In the case of knowledge sharing, efficacy perceptions refer to the belief a person has regarding the value of his or her knowledge. If individuals believe that the information they posses would be helpful for others, they will be more likely to make the effort to share this knowledge with others. Finally, individuals who have a greater sense of group identification are also more likely to contribute to their group. Construing knowledge as a public good within an organization, these factors would be expected to affect the propensity of individuals to share knowledge with others.

> *Proposition 5:* Low perceived cost, perceived rewards, self-efficacy and group identification will encourage positive attitudes toward knowledge sharing and will, therefore, be positively related to knowledge-sharing intentions and behaviours.

Social exchange theory

According to social exchange theory (Blau, 1964), individuals regulate their interactions with other individuals based on a self-interested analysis of costs and benefits. These benefits need not be tangible, as individuals may engage in an interaction under the expectation of reciprocity in the future (Gouldner, 1960), an expectation regulated by trust. Davenport and Prusak (1998) have analysed knowledge sharing from this perspective, outlining some of the perceived expected benefits that may regulate the behaviour: future reciprocity, status, job security or promotional prospects. From this perspective, knowledge sharing will be positively affected when an individual trusts that this behaviour will be reciprocated with some benefit in the future.

> *Proposition 6:* Expectations of reciprocity will encourage positive attitudes towards knowledge sharing and will, therefore, be positively related to knowledge-sharing intentions and behaviours.

Together, these theories suggest a number of factors that may facilitate and encourage knowledge sharing among employees: social ties or patterns and frequency of interactions with other employees, a shared language, trust, norms for sharing, group identification, perceived cost, perceived rewards, self-efficacy and expectations of reciprocity. Based on these factors, the key question that we will try to answer is: what people management practices will increase the likelihood that employees will exchange knowledge? Or: what practices will encourage and facilitate knowledge sharing?

People management practices for knowledge sharing

Because we have found that important knowledge-sharing antecedents include things like culture, procedural justice and perceived support, which go beyond traditional human resource practices, we will use the more encompassing term *people management practices* (Wright *et al.*, 2001) to refer to all of the relevant practices that organizations might adopt in order to facilitate and encourage knowledge sharing. Table 1 summarizes the people management practices that we propose will foster knowledge sharing among organizational employees.

Work design

Work design directly affects the structural dimension of social capital by establishing interdependencies, frequency of interactions and information flow requirements among jobs. Work design is, therefore, an important tool for fostering knowledge flows by leveraging social networks. For instance, rather than designing stable, individualized jobs with concrete tasks, work can be conceptualized as a sequence of assignments where

Table 1 *People management practices proposed to foster knowledge sharing*

Work design	Teams/cross-functional teams
	Interdependency
	Communities of practice
Staffing	Person–organization fit
	Employee referrals
	Communication skills
Training and development	Extensive training
	Team-based/cross-training
	Formalized orientation and socialization programmes
Performance appraisal	Developmental evaluations
	Include knowledge-sharing criterion
Compensation and rewards	Reward knowledge-sharing behaviours
	Intrinsic rewards
	Group and firm-based compensation systems
Culture	Knowledge-sharing norms
	Culture of caring (trust and cooperation)
	High band-width communication
	Egalitarianism
	Fairness
	Perceived support
Technology	User-friendly information technology
	Training to use technology
	Technology chosen to fit culture
	Technology to enhance existing social networks

employees work closely with other employees on a series of projects. Such designs encourage lateral linkages across functions, geographical locations, business units and companies (Mohrman, 2003).

Designing work around *teams* gives employees the opportunity to work closely with others and encourages knowledge sharing, especially when rewards are based on team results. When teams are given real business problems to solve and are held accountable for the results, action learning occurs because achieving positive results requires that team members seek out information and share what they find with others (Noe *et al.*, 2003). Thus, organizing work around teams increases the need for coordination and collaboration. Furthermore, the interactions required facilitate knowledge sharing by creating structural and cognitive social capital, as well as by enhancing the development of close relationships that have a positive effect on willingness to share. *Cross-functional teams* may be especially useful for encouraging the creation of ties with employees from different groups (Kang *et al.*, 2003). In their case study of a knowledge-intensive firm, Robertson and O'Malley (2000) argue that the use of inter-disciplinary project teams is one of the factors contributing to the firm's success.

Given that higher levels of interaction are necessary to accomplish highly interdependent tasks, knowledge sharing among team members should be even greater where high *interdependency* exists among members (Noe *et al.*, 2003). Personal reciprocal interdependence of work tasks creates a strong incentive for employees to work together to achieve common goals (Lengnick-Hall and Lengnick-Hall, 2003), in addition to facilitating strong, cohesive relationships (Kang *et al.*, 2003). Thus, again, interdependency should enhance all three dimensions of social capital. Empirical support for the value of interdependency for knowledge exchange comes from a study of teams of knowledge workers that found a positive relationship between task interdependence and knowledge sharing (Janz *et al.*, 1997).

Communities of practice represent another way of organizing work interactions that can also be very effective for leveraging knowledge flows (Noe *et al.*, 2003). A community of practice is 'an emergent social collective where individuals working on similar problems self-organize to help each other and share perspectives about their work practice, resulting in learning and innovation within the community' (Faraj and Wasko, 2001: 3). They are self-forming groups that cut across business units, geographical dispersion and functional boundaries to connect individuals sharing common disciplinary interests or tasks (Lengnick-Hall and Lengnick-Hall, 2003). Most communities of practice use Internet or intranet discussion groups or other computer-mediated communications to facilitate the exchange of ideas and information.

The interactions that communities of practice encourage should increase all three dimensions of social capital. McDermott and O'Dell (2001) posit that human networks are one of the most important mediums through which knowledge is shared. Based on their study of five companies known for sharing knowledge effectively, the authors suggest that knowledge-sharing networks be built on already existing informal networks that individuals have formed to get help or to find out who knows what. These networks can be legitimized or enabled by giving them tools and resources to share knowledge more effectively. Participation in communities of practice can be encouraged through performance evaluations and promotion decisions as well (Lengnick-Hall and Lengnick-Hall, 2003).

Staffing

The relational dimension of social capital includes shared norms and identification with the group. Thus, in order to increase the probability of having high levels of relational

social capital among employees, recruitment and selection practices should be geared towards identifying individuals who will have a higher probability of agreeing on the same norms and identifying with one another. This will most likely occur among individuals who share similar values. Thus hiring practices should take into account candidates' values. *Person-organization (P-O) fit* is a hiring practice that emphasizes the compatibility between organization and employee characteristics. It is often measured in terms of the congruence between organizational values and beliefs and individual personality, values and needs (Chatman, 1991).

In their case study, Robertson and O'Malley (2000) mentioned the 'overriding importance' that the firm attached to a candidate's potential cultural fit when making hiring decisions. They reported that the HR manager rejected most candidates as 'not one of us'. Selection interviews involved current employees from various disciplines and if only one employee had reservations regarding whether or not the candidate would 'fit in' that candidate was rejected. Schneider's (1987) attraction-selection-attrition model supports the idea that organizational members tend to hire people who are similar to themselves. P-O fit tries to systematize this process by hiring people 'for who they are, not just for what they can do' (Lengnick-Hall and Lengnick-Hall, 2003: 137). This practice may be especially important for knowledge-sharing cultures not only because it creates a community of shared values, but also because the values emphasized can specifically include the importance of learning and developing more knowledge (Kang *et al.*, 2003).

Given the importance of hiring employees who share the organization's values, recruiting based on *employee referrals* is another important practice for organizations that rely on organization-based hiring (Lengnick-Hall and Lengnick-Hall, 2003; Pulakos *et al.*, 2003). Candidates referred by current employees are more likely to share the values that the firm is looking for. Furthermore, their social capital will be greater upon entry because they already have ties with at least one current employee. Most likely the employee who referred them will include them in his or her social network as soon as they start working for the company or even prior to organizational entry.

There are additional skills that should facilitate the building of social capital, such as the ability to work with others and *communication skills*. Thus, candidates may also be assessed for their written and oral communication skills, as well as facilitative team and collaborative behaviours (Pulakos *et al.*, 2003). In the Robertson and O'Malley case study, panel interviews were used to assess candidates' ability to communicate effectively, as well as their willingness and ability to share their knowledge.

Training and development

Training can be used to enhance self-efficacy levels among employees. Bandura (1997) suggested four ways by which self-efficacy can be increased: modelling and vicarious learning, role-playing, mastery or success experiences and coaching or verbal persuasion. All of these elements can be included in training programmes to increase levels of employee self-efficacy. Thus, the use of *extensive training* and development programmes should help to increase general levels of self-efficacy among organizational employees. Consequently, employees will feel more assured of their abilities and will be more likely to exchange their knowledge with others.

Training in team building should increase levels of structural, cognitive and relational social capital that will also help to stimulate knowledge-sharing behaviours. *Team-based training* will help build relationships that are vital for the transfer of knowledge. *Cross-training* will facilitate knowledge sharing among employees from different areas by increasing interactions, creating a common language, building social ties and

increasing employees' awareness of the demands of different jobs. Thus, any training that emphasizes cooperation and builds relationships among employees should increase knowledge-sharing behaviours. Training in *communication skills* should also help employees to exchange information more effectively.

Formalized orientation and socialization programmes are very useful for helping employees to acquire organizational values, norms and shared cognitive schemata (Kang *et al.*, 2003). These programmes will not only increase interactions among employees, but will result in a shared language, closer interpersonal ties, shared norms and identification with others. The trust that results from the relational social capital formed during socialization processes is necessary for the reciprocity beliefs that positively affect knowledge sharing.

Performance appraisal and compensation

Given the predicted impact of the perceived benefits of knowledge sharing, performance appraisal and compensation systems must be designed to encourage knowledge-sharing behaviours. Rewarding and recognizing these behaviours sends a strong signal to the employees that the organization values knowledge sharing. In their study of five 'best practice' knowledge-sharing companies, McDermott and O'Dell (2001) cite a number of examples of acknowledging and *rewarding knowledge sharing*. For instance, at American Management Systems sharing knowledge is directly included in the performance evaluation and knowledge contributions are recognized with an annual 'Knowledge in action' award.

A good way of inducing knowledge sharing is to make this type of behaviour critical for career success. At American Management Systems employees understand that 'leveraging' what they know by educating colleagues or helping others is the only way to build their reputation as a leader. This reputation is essential for those who aspire to a leadership position within the firm. In fact, there is a general belief that it is what you share about what you know and not what you know that gives you power (McDermott and O'Dell, 2001). In a second example, work in the knowledge-intensive firm studied by Robertson and O'Malley (2000) is organized around interdisciplinary project teams. Consultants are paid a percentage of the project revenue for each project on which they work. Any consultant who sells a project becomes the project leader and is responsible for choosing the consultants who will make up their team. This creates an internal market in which consultants sell their skills to each other. Consequently, consultants are motivated to communicate their knowledge base as widely as possible in order to build up their reputation to increase their chances of being chosen for future projects.

Recognizing knowledge-sharing behaviours in performance appraisals may also help to reduce the perceived cost of these behaviours. One of the reasons often cited for not contributing to knowledge repositories is a reluctance to spend time on knowledge sharing. Employees believe that they should spend their limited time on what they perceive to be more productive activities (Husted and Michailova, 2002). When these behaviours are directly evaluated and rewarded, employees are more likely to see them as an integral part of their job responsibilities. When this is the case, the time spent on knowledge sharing will not be considered an opportunity cost or time that could have been spent on more productive activities.

While there is general agreement that knowledge sharing should be recognized and rewarded (Cabrera and Cabrera, 2002; Kamdar *et al.*, 2002a, 2002b; Robertson and O'Malley, 2000), it must be done with great care. There are a number of pitfalls that may make attempts to evaluate and reward knowledge contributions backfire. For example, performance evaluations should have a developmental, rather than a controlling, focus.

Oldham (2003) explains that employees will be more willing to share their ideas in organizational climates that are safe and non-judgemental. He cites research that shows that individuals who anticipate *developmental evaluations* share their creative ideas more than those who expect to receive more critical evaluations.

There may be some danger in using financial rewards to encourage knowledge sharing as well. Financial rewards may be perceived as controlling and, in some cases, have been shown to diminish creativity. It is well known that offering extrinsic rewards for a certain behaviour tends to decrease the perceived intrinsic value of the behaviour (Deci, 1975). Offering rewards low in salience may be a good way to signal that the organization values knowledge sharing, yet not overly control the process. Small rewards or rewards that are offered well after knowledge sharing takes place should decrease their salience. Non-financial rewards may also be perceived as less salient (Oldham, 2003). O'Dell and Grayson (1998) maintain that *intrinsic rewards*, such as recognition, may be more effective than extrinsic rewards for engaging employees in knowledge-sharing activities.

The biggest potential drawback of rewarding knowledge-sharing behaviours is that individual goals and rewards often lead to competition among employees. For example, research in organizational citizenship behaviours (OCBs) has documented what is referred to as 'escalating citizenship', where employees compete to be viewed as better organizational citizens (Bolino and Turnley, 2002). Thus, while knowledge-sharing behaviours should be evaluated and rewarded, evaluation and compensation systems, in general, should be based on group and organization-level outcomes rather than on individual outcomes. Appraisal and incentive systems based on *group or firm performance* and stock ownership programmes will reinforce collective goals and mutual cooperation that should lead to higher levels of trust necessary for knowledge exchanges (Kang *et al.*, 2003).

Culture

Organizational culture can influence knowledge sharing in two distinct ways. First of all, it can influence knowledge sharing by creating an environment in which there are strong social norms regarding the importance of sharing one's knowledge with others. De Long and Fahey (2000) consider that organizational culture plays a fundamental role in the creation, sharing and use of knowledge. They state that one of the major ways in which culture influences knowledge management practices is by establishing norms regarding sharing knowledge. A second way in which organizational culture influences knowledge sharing is by creating an environment of caring and trust that is so important for encouraging individuals to share with others.

Knowledge-sharing *norms* can be transmitted in a number of ways. Organizational cultures are typically created and sustained through socialization processes, storytelling and rituals. Organizations that incorporate knowledge-sharing behaviours into these experiences will demonstrate the importance of knowledge sharing to their employees. Examples set by other employees, especially managers who take the time to share their knowledge, clearly signal that there is a knowledge-sharing norm. At both PricewaterhouseCoopers and Ford Motor Company senior managers strongly and visibly support sharing knowledge as the way business should be done. Direct pressure from peers to participate in knowledge exchange will also create norms for sharing (McDermott and O'Dell, 2001).

In addition to having strong norms regarding the importance of knowledge sharing for the organization, encouragement of knowledge sharing requires the creation of a '*culture of caring*' or of trust and cooperation (Lengnick-Hall and Lengnick-Hall, 2003). Two of the factors that were identified earlier as influencing knowledge sharing were trust and

expectations of reciprocity, which clearly depends on levels of trust. In fact, there seems to be unanimous agreement that individuals will be more willing to share what they know in an open and trusting culture (Davenport and Prusak, 1998; Faraj and Wasko, 2001; Irmer, 2002; Kang *et al.*, 2003; Leana and Van Buren, 1999; Robertson and O'Malley, 2000; Settoon and Mossholder, 2002; Zárraga and Bonache, 2003). So the question then becomes: how can an organization ensure that it has an open and trusting culture?

Among the most often cited people management practices believed to create this type of culture are open communication, egalitarianism, fairness in decision-making processes and perceived support from the organization, co-workers and/or one's supervisor. All of these practices are expected to affect the relational dimension of social capital positively, increasing trust and cooperation among organizational members and, consequently, increasing expectations of reciprocity.

Communication *High band-width communication*, that is two-way, face-to-face discussion, provides a rich medium for information exchange. Lengnick-Hall and Lengnick-Hall (2003) explain how co-location, or bringing employees together under the same roof, increases the frequency of interactions among workers. This not only leads to more chance encounters during which information can be shared, but also increases familiarity, which can result in shared understanding and feelings of community, both of which increase the likelihood of sharing. In other words, co-location increases social capital that results in more effective communication.

The knowledge-intensive firm studied by Robertson and O'Malley (2000) recognized the importance of high band-width communication. The role of information technology in facilitating knowledge exchange in the firm was limited. Consultants preferred project teams to work face-to-face rather than via intranet discussion groups. The firm considered social networking to be far more important than using formalized databases.

So, while technology is extremely useful for facilitating the exchange of information, it should not altogether replace face-to-face interactions. This type of communication is key for establishing trusting relationships. Any socialization effort that brings employees together in an informal setting, such as playing together on athletic teams, eating lunch with colleagues or providing a lounge where employees can take coffee breaks, will provide opportunities for increasing social capital through high band-width communication (Snell *et al.*, 1999).

Egalitarianism Robertson and O'Malley (2000) posit that one of the main factors contributing to the success of the knowledge-intensive firm they studied was the highly egalitarian environment. The organization de-emphasized hierarchy, having only one level of management, and the majority of decision-making involved significant numbers of consultants. Management communicated constantly with employees to keep them abreast of all project developments, again pointing to the importance of open communication. Snell *et al.*, (1999) agree that information is likely to be shared more freely in egalitarian work environments where employees are empowered and status barriers are eliminated.

Supportive HR practices have been proposed to have positive effects on a number of employee behaviours because they signal to the employees that the organization is willing to invest in them and recognizes their contributions (Allen *et al.*, 2003; Wayne, Shore, and Liden, 1997). One of the supportive HR practices is employee participation in decision-making. Involving employees in important decisions clearly signals that the organization trusts them to make these decisions. Thus, in addition to open communication, an egalitarian

environment in which employees actively participate in decision-making should encourage individuals to share what they know with others.

Fairness   For those decisions that management does make, the perceived fairness of these decisions is likely to affect employees' willingness to share. Perceptions of fairness affect levels of trust, a vital component of relational social capital. Fairness of rewards is included among the supportive HR practices because it signals that the organization cares about the well-being of its employees and is willing to invest in them (Allen *et al.*, 2003). Hislop (2003) suggests fair and equitable decision-making practices to be one of the HR policies that should directly influence knowledge-sharing attitudes and behaviours. Obviously there will be higher levels of trust when employees feel that organizational decisions are fair.

Flood and his colleagues state that the 'perceived fairness of an organization's reward and recognition practices plays a very critical role in encouraging employees to part with the value-creating knowledge' (Flood *et al.*, 2001: 1155). Their study of knowledge workers in the high technology and financial services industries provides empirical support for this idea. They found that equity perceptions led to higher perceptions of met expectations at work and that these perceptions were, in turn, positively related to feelings of obligation to contribute to the organization (Flood *et al.*, 2001). Procedural justice has also been proposed to affect willingness to share indirectly through its positive impact on organizational commitment (Oldham, 2003).

According to the OCB literature, justice perceptions play a key role in encouraging citizenship behaviours. One of the dimensions of OCBs is interpersonal helping behaviour, thus, a parallel may be drawn between knowledge sharing and OCBs if one considers knowledge sharing as a kind of interpersonal helping behaviour. In this case, the antecedents of OCBs may also be potential antecedents of knowledge sharing.

In one OCB study employees demonstrated more helping behaviours when they believed that outcomes such as pay and promotions were distributed fairly and when they thought the procedures used to determine these outcomes were just (Moorman, 1991). In another study justice perceptions were found to affect OCBs indirectly through the mediating variable perceived organizational support (Moorman *et al.*, 1998). This leads us to the final variable expected to affect knowledge sharing by helping to build an open and trusting culture: perceived support.

Perceived support   Numerous articles have alluded to the importance of support, from the organization, supervisor or peers, for encouraging knowledge-sharing behaviours (Hislop, 2003; McDermott and O'Dell, 2001; Oldham, 2003; Settoon and Mossholder, 2002; Zárraga and Bonache, 2003). Oldham (2003), for example, includes supervisor and co-worker support as critical work context antecedents of creative idea formulation and sharing. While he postulates that supervisor and co-worker support should contribute to employees' positive mood states and that this should result in more creative ideas, one would also expect that intentions to share would be positively affected.

Drawing again on the parallel between OCBs and knowledge sharing, Podsakoff and colleagues found a significant positive relationship between perceived organizational support and helping behaviours. They also found significant relationships between interpersonal helping and both supportive leadership and leader-member exchange (Podsakoff *et al.*, 2000). Their findings point to the key role that leaders play in influencing OCBs. In fact, they suggest that supportive behaviour on the part of the leader may actually be what causes the positive relationship between organizational support and citizenship behaviours. Employees who feel they have a supportive supervisor or positive

leader-member exchanges are more likely to report perceived organizational support, given that in most cases one's supervisor is perceived to represent the organization (Rousseau, 1995).

Feelings of support contribute to the creation of an organizational culture characterized by trust, respect and caring, all of which contribute to building relational social capital. Employees working in this type of environment, where the organization recognizes and values their contributions and where they can count on fair treatment and reciprocity, should naturally be more willing to share and cooperate.

Information technology

One of the best ways to reduce the perceived cost of sharing knowledge is to have a well-designed, *user-friendly* technological tool that simplifies the task and reduces the time necessary for sharing one's ideas with others. Training in the use of these tools can help people use the systems more efficiently and thus further reduce the perceptions of cost (Cabrera and Cabrera, 2002). However, although information technology plays a vital role in facilitating the flow of knowledge in organizations, in many instances the introduction of new technology has failed because inadequate attention was paid to the non-technical or human factors which are critical determinants of the effectiveness of the new systems (Cabrera *et al.*, 2001).

The most successful information technology is that which is designed to enhance the human networks that already exist. The type of technology chosen should *match* the existing organizational culture (McDermott and O'Dell, 2001). Westinghouse provides a good example of the danger of ignoring the culture of a firm when adopting new information technology. The company had a highly decentralized structure when it decided to implement an integrated information system for resource planning. The new system dramatically altered the decision-making environment, moving it towards a much more centralized structure. Obviously the managers resisted using the new technology and requests for information were responded to even more slowly than before (Lengnick-Hall and Lengnick-Hall, 2003). Human resource managers should play an active role in the selection of information technology to ensure that the technology chosen builds upon or enhances, rather than clashes with, the existing knowledge-sharing networks within the firm.

In this section we have identified numerous people management practices that we expect will foster knowledge sharing by creating an environment conducive for sharing, as well as positive attitudes toward sharing. Each of these practices may simultaneously affect a number of the socio-psychological factors previously identified as facilitating or encouraging knowledge sharing. Below is a brief summary of the key people management practices for fostering knowledge sharing:

- Work designs that encourage collaboration among employees, interdependency and cross-functional interactions.
- Selection of employees driven by person–organization fit and the assessment of communication skills.
- Extensive collaborative training programmes geared towards increasing participant self-efficacy and developing teamwork skills and the capacity to articulate and communicate knowledge.
- Formalized orientation and socialization programmes, as well as more informal communities of practice and social events.
- Developmental performance appraisals that recognize knowledge-sharing behaviours.

- Incentive programmes that reward effective knowledge sharing and emphasize intrinsic rewards.
- Group and firm-based compensation systems.
- An open and trusting culture sustained by high band-width communication, egalitarianism, fairness and support with strong norms for knowledge sharing.
- Carefully chosen, user-friendly information technology designed to match the organizational culture and to enhance existing social networks.

Conclusions

Having entered a knowledge era in which business competitiveness will increasingly rely on the ability to create and leverage organizational knowledge, there is a need to identify the people management practices most likely to foster knowledge flows. In this article we have tried to provide some theoretical indications as to the key variables that may determine knowledge-sharing behaviour. Based on the theory of reasoned action, we suggest that intentions to share knowledge are determined by positive attitudes towards sharing knowledge as well as the perception of norms for sharing. We then use social capital, social dilemma and social exchange theories to identify factors that influence attitudes toward sharing. Social capital theory also suggests some factors that facilitate sharing. After having identified the key factors predicted to encourage and facilitate knowledge sharing, we then reviewed research to pinpoint specific managerial interventions that would influence these factors in order to foster knowledge sharing.

Figure 1 shows how the people management practices we identified are expected to facilitate knowledge sharing by creating an environment conducive to sharing, to
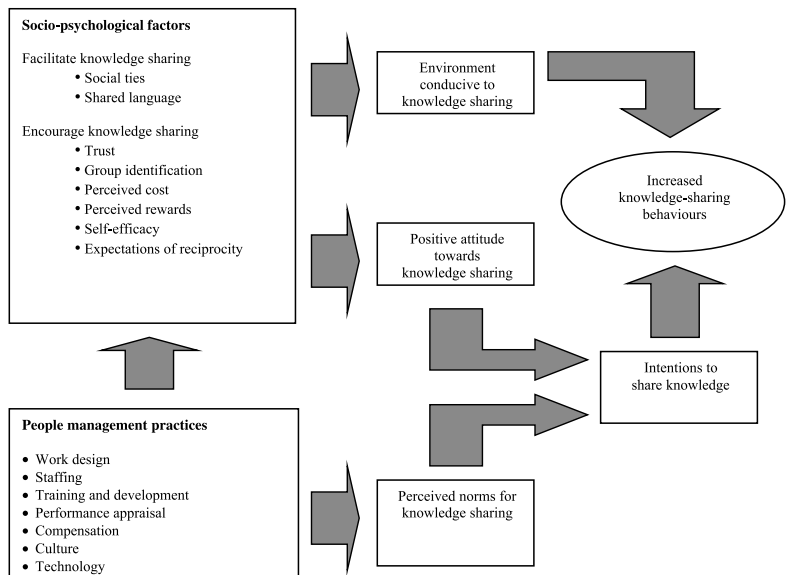

Figure 1 *Knowledge-sharing dynamics*

encourage knowledge sharing by creating positive attitudes toward sharing, as well as to contribute to perceptions of norms for sharing. It further shows that an environment conducive to sharing is expected to affect knowledge-sharing behaviours directly, while positive attitudes and the perception of knowledge-sharing norms will influence knowledge-sharing behaviours indirectly through their impact on intentions to share.

Current views of human resource management argue that it should have a strategic orientation (Wright *et al.*, 1994), one that allows an organization to build the unique human capital it needs to develop a sustainable competitive advantage. This implies that organizations with different strategies will most likely require different types of human capital in order to succeed. However, in the ever-changing competitive environment that organizations face today, one competence will be required for success regardless of a firm's strategy: the ability continuously to renovate its knowledge assets. The field of human resource management should, therefore, dedicate great effort to understanding how to enhance the knowledge flows that will guarantee adaptation to unforeseen competitive forces. Understanding knowledge-sharing dynamics can help to identify the people management practices that will foster the exchange of knowledge in organizations.

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