

Facilitating knowledge management strategies through IT and HRM

Mehrdad Madhoushi, Abdolrahim Sadati, Hamidreza Delavari,

Mohsen Mehdivand, Mozhdeh Hedayatifard

(Faculty of Economic and Administrative Sciences, University of Mazandaran Campus, Babolsar, Iran)

Abstract: In an increasingly competitive environment, where new business practices are regularly introduced, organizations have to be innovative to survive. In the present competitive climate, knowledge is considered as the main distinguishing factor of business success, and it is seen as the foundation of organization's innovation. The emergence of knowledge-intensive society has changed the nature of business competition. Hence knowledge needs to be appropriately managed. Knowledge Management (KM) focuses on managing different knowledge processes such as acquiring, creating, storing, sharing, transferring and applying implicit and explicit knowledge with objective of product and process innovation, performance development and sustainable competitive advantage. This paper tries to demonstrate KM lead to promotion of innovation and performance when it is correctly supported by human resource management (HRM) and information technology (IT). The questions we will try to investigate in this paper are: How knowledge in organizations can be managed? What is the connection between HRM, IT and effective implementation knowledge management strategies and how these relationships affect on organizational goals? For this means, this study first states the importance of knowledge, KM process and introduces two strategies for managing knowledge (exploitative and explorative strategy). Next, it demonstrates each strategy requires to desired facilitator to support them in action. Finally, with presenting of model, this study concludes that each one of strategy can cover some KM process. Hence for the effective implementation of knowledge management process, organizations have to utilize both strategies.

Key words: knowledge management; exploitative strategy; explorative strategy; IT; HRM

1. Introduction

In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge (Nonaka & Takeuchi, 1995). The growing importance of knowledge as a critical resource has encouraged managers to pay greater attention to the firms' KM strategies (Choi, Poon & Davis, 2006). Knowledge management (KM) is about creating, acquiring, storing, sharing, transferring and utilizing knowledge within the firm to gain and sustain a competitive advantage (Petersen & Poulfelt, 2002). Its popularity has increased rapidly in the last decade, and it has become a central topic of management philosophy. Also, KM has been widely used

Mehrdad Madhoushi, associate professor, Faculty of Economic and Administrative Sciences, University of Mazandaran Campus; research fields: knowledge management, MIS.

Abdolrahim Sadati, graduate student, Faculty of Economic and Administrative Sciences, University of Mazandaran Campus; research field: business management.

Hamidreza Delavari, graduate student, Faculty of Economic and Administrative Sciences, University of Mazandaran Campus; research field: business management.

Mohsen Mehdivand, graduate student, Faculty of Economic and Administrative Sciences, University of Mazandaran Campus; research field: business management.

Mozhdeh Hedayatifard, graduate student, Faculty of Economic and Administrative Sciences, University of Mazandaran Campus; research field: business management.

recently by firms and organizations in order to improve decision making, product innovation, productivity and profits (Edvardsson, 2006). Despite the best efforts of organizations, many face challenges implementing and sustaining successful KM initiatives or processes. This may stem from a variety of reasons, such as unrealistic expectations, a one size- fits-all approach to KM, lack of understanding of KM, overemphasis on technology, lack of strategic alignment, or information overload (Hariharan, 2005; Probst, Raub & Romhardt, 2000). This paper attempts to discuss the relations of HRM, IT as facilitators with knowledge management strategies.

2. Knowledge management process

In the past, the returns on investment came predominantly from physical assets like physical products and equipment. However, factors such as market's globalization, higher requirements of clients/suppliers, extensive competitive pressure, rapid technological change and ECT, have led to the redefinition of knowledge as the strategic factor for innovation and competitiveness (Bechina, Michon & Nakata, 2005). There are many definitions of knowledge. Davenport and his colleagues (1998) defined knowledge as a "fluid mix of framed experience, values, contextual information and expert insight that offers a framework for evaluating and integrating new experience and information" (Kane, Ragsdell & Oppenheim, 2006). Also O'Dell and Grayson (1998) define knowledge to be information in action.

Knowledge can be classified as either explicit or implicit (Polanyi, 1966). Explicit knowledge has the character a public good, and it can be codified and easily transferred from one person to another (Liao & Hu, 2007). By contrast, implicit knowledge is difficult to articulate and access because it is usually developed based upon experience, action, feeling and so on. Implicit knowledge can only be shared through direct interactions. Characteristics of explicit and implicit knowledge are shown in Fig. 1.

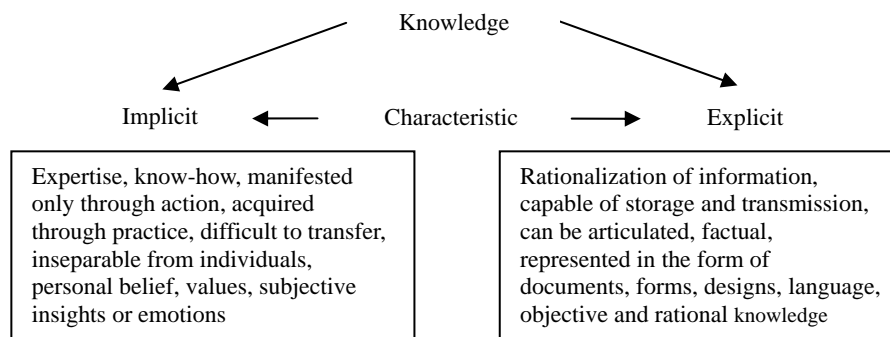


Fig. 1 Characteristics of explicit and implicit knowledge

With regard to this distinction between the tacit and explicit knowledge, much of the literature, whilst acknowledging the importance of implicit elements of knowledge, tends to focus on its more manageable elements (Jensen, Johnson, Lorenz & Lundvall, 2007). Yuan, et al (2008) believe that tacit knowledge is regarded as more important for innovation (Johannessen, 2008). This is in line with Nonaka and Takeuchi (1995) who emphasize tacit knowledge as a main source creating new knowledge and continuous innovation (Jensen, et al., 2007). Hence, in this competitive situation where the only certainty is uncertainty, knowledge is considered as the main distinguishing factor of business success and is seen as the foundation of organization's competitive advantage and innovation (Nonaka & Takeuchi, 1995). Hence knowledge needs to be appropriately managed.

Knowledge management (KM) can be defined as: creating, acquiring, storing, sharing, transferring and

utilizing of both explicit and implicit forms of knowledge at the individual, group, organizational and community level through harnessing of people, process and technology with objective of innovation and performance development and sustainable competitive advantage (Thite, 2004). Subsequence of KM process is shown in Fig. 2.

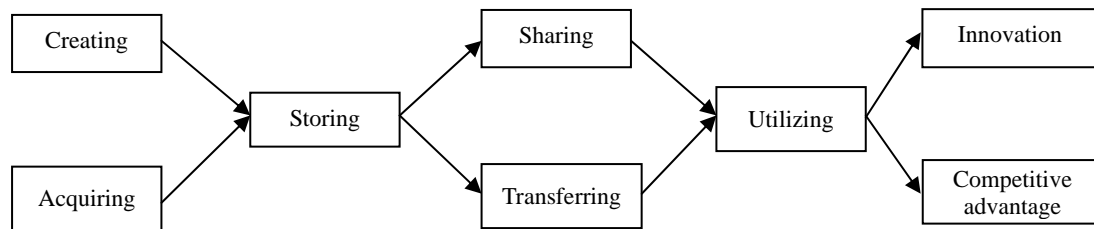


Fig. 2 KM process

Fig. 2 shows that the initiation of the KM process involves either the creation or the acquisition of knowledge by an organization. Knowledge creation involves developing new knowledge or replacing existing knowledge with new content. The focus of this area is usually on knowledge creation inside the boundary of the firm. In contrast to internal knowledge creation, knowledge acquisition involves the search for, recognition of, and assimilation of potentially valuable knowledge, often from outside the organization (King, Chung & Honey, 2008). It is worth noting that the effective acquisition of knowledge from external sources depends on the ability of the firm to recognize the value of new external information, assimilate it and apply it to commercial ends (Massa & Testa, 2009). After new knowledge is created or acquired, KM mechanisms should be in place to prepare it to be entered into the organization's memory and for maximal long-term reusability. Knowledge storage refers to the processes of knowledge structuring and storing that make it more formalized and accessible (Massa & Testa, 2009). The knowledge in order to have a wide organizational impact, it usually must be either transferred or shared. Knowledge Transferring involves the focused and purposeful communication of knowledge from a sender to a known receiver. The focus of this area is usually on knowledge transferring outside the boundary of the firm. Knowledge sharing is less-focused dissemination, such as through a repository, to people who are usually unknown to the contributor. Many of the points on the hypothetical continuum involve some combination of the two processes and both processes may involve individuals or groups as either senders or receivers, or both (King, et al., 2008). The focus of this area is usually on implicit knowledge sharing inside the boundary of the firm. Once knowledge is transferred to, or shared with, others, it may be used or applied to be useful in facilitating innovation. In fact, knowledge application can be defined as the process of incorporating knowledge into an organization's products, services and practices to derive value from it (King, et al., 2008).

3. Knowledge management strategy (KMS)

How can knowledge in organizations be managed? The growing importance of knowledge as a critical resource has encouraged managers to pay greater attention to the firms' KM strategies. A growing body of KM research has examined the range of KM strategies and attempted to classify them (Choi, et al., 2006).

Two different KM strategies were suggested by Hansen, Nohira and Tierney (1999) and Raelin (2008): codification of explicit knowledge (Hansen, et al., 1999) or technical explanation (Raelin, 2008) and personalization of implicit knowledge (Hansen, et al., 1999) or behavioral explanation (Raelin, 2008). According to the personalization strategy or behavioral explanation, knowledge that can enhance firms' competitiveness is implicit knowledge that can be shared and created by human contacts between organizational members. The

essence of codification or technical explanation is to transform the knowledge of organizational members into explicit knowledge so that management efficiency can be enhanced through information technology (Cho & McLean, 2009).

Massa and Testa (2009) and Lakshman (2009) explored two different strategies of managing knowledge to investigate how organizations manage, exploit and nourish their knowledge, in order to generate innovation and to achieve a competitive advantage; marketing knowledge domain (External Knowledge) and technology knowledge domain (Internal Knowledge). The marketing knowledge domain is nourished by a variety of external knowledge sources, mainly connected to customers and market trends. This strategy that is mainly supported by the KM process is essentially knowledge acquisition. The technology knowledge domain is informed by a relatively small number of external knowledge sources, as it relies mainly on internal knowledge sources that are enhanced by appropriate organizational levers. This strategy that is mainly supported by the KM process is essentially knowledge creation.

Choi, et al (2006) categorized KM strategies based on two key dimensions: KM focus and KM source. On the KM focus dimension, KM strategies can be categorized as explicit-oriented and tacit-oriented. Explicit-oriented strategy attempts to increase organizational efficiencies by codifying and reusing knowledge mainly through advanced IT. Tacit-oriented strategy takes on the personalization approach where tacit knowledge is communicated through direct person-to-person contact and through socialization processes. The second dimension to orient to KM strategy is based on the firm's primary source knowledge. KM strategies can be classified as internal-orientation and external-orientation along this dimension. External-oriented strategy attempts to bring knowledge from outside sources via either acquisition or imitation, and then transferring the knowledge throughout organization. Internal-oriented strategy focuses on generating and sharing knowledge within the boundary of the firm (Choi, et al., 2006).

Base of above divisions, we can express, some strategies such as codification, technical explanation, explicit and external-oriented strategies try to use and exploit explicit or existent knowledge both in and out of organizations. Hence we define them as exploitative strategy. On the other hands, some strategies such as personalization, behavioral explanation, implicit and internal-oriented strategy try to search and explore implicit and new knowledge both in and out of organizations. Therefore we define them as explorative strategy.

In the KM process, exploitative strategy can support more acquiring, storing, transferring and utilizing knowledge and explorative strategy can support more creating, sharing and utilizing knowledge. These processes are shown in Fig. 3.

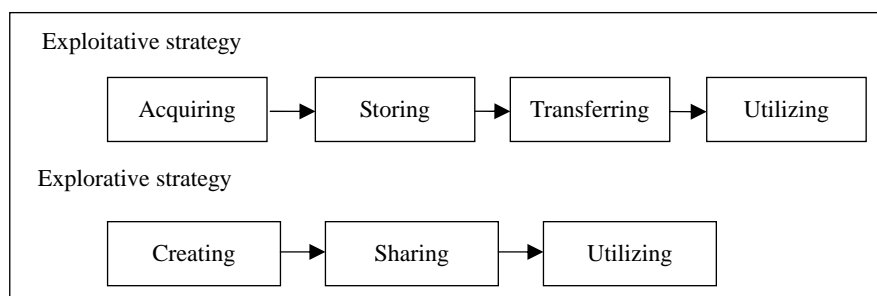


Fig. 3 KM strategy

For the effective implementation of knowledge management process, organizations have to utilize both strategies. But often companies that use knowledge effectively pursue one strategy predominantly and use the

second strategy to support the first (Cho, et al., 2009).

In implementing process each of these strategies require some enablers to support them. This study attempts to investigate two key factors for success of KM in organization.

3.1 Knowledge management strategy and IT

Amounts of knowledge is explicit in the organizations that re-use of this knowledge can increase effectiveness and growth, save work, reduce communications costs, and allow a company to take on more projects (Choi, et al., 2006). Hence explicit knowledge needs to be appropriately managed. In the last section, the authors named management of explicit knowledge as exploitative strategy. Exploitative strategy encourages company and people to document their explicit and external knowledge to databases in order to re-use knowledge, follow standardized routines and take low risk actions (Edvardsson, 2008). Such organizations invest heavily in information technology and information system for projects like data warehousing and data mining, knowledge mapping electronic libraries, MIS, EDI, SCM, CRM, and extranet to facilitate business communication, efficient data collection, acquisition and reutilization of explicit knowledge.

Alavi and Leidner (2001) and Fairuz, et al (2008) all agree that information technology plays an important role in supporting the organizational knowledge process. Information technology is tightly connected to KM, because it helps distribute structural knowledge vertically and horizontally, as well as make it easily acquired and utilized. As a result, organizations and enterprises all try to implement KM with information technology. Hendriks (1999) find that information and communication technology show direct and indirect influences on the motivation of KM transferring due to four functions: cast aside obstacles, provide information acquisition channels, improve processes and identify the location of the knowledge owner and searcher (Chin, 2008). The relationships between IT and exploitative strategy are shown briefly in Table 1.

Table 1 Relations of IT and KMS

IT \ KMS	Facilitating exploitative strategy by
Database	Collecting efficient knowledge (storing), identifying the location of the knowledge owner and searcher (acquiring and transferring).
CRM	Facilitating business communication with customers (acquiring and transferring), collecting efficient knowledge (acquiring), distribute structural knowledge (transferring).
MIS	Facilitating business communication with units (acquiring and transferring), collecting efficient knowledge (acquiring), distribute structural knowledge (transferring).
SCM	Facilitating business communication with suppliers (acquiring and transferring), collecting efficient knowledge (acquiring), distribute structural knowledge (transferring).
EDI	Facilitating business communication with partners (acquiring and transferring), collecting efficient knowledge (acquiring), distribute structural knowledge (transferring).
Extranet	Facilitating business communication with partners (acquiring and transferring), collecting efficient knowledge (acquiring), distribute structural knowledge (transferring).

3.2 Knowledge management strategy and HRM

During the past decade, the focus of knowledge management (KM) initiatives has shifted from a strategy of capturing data and explicit information in portals and databases to a strategy of promoting implicit knowledge sharing among individuals in the organizations (Cross, Parker, Prusak & Borgatti, 2001; Davenport & Prusak, 1998). In the last section, the authors named development of implicit knowledge that there is in individual minds as explorative strategy. Individuals, with their knowledge, expertise and skills, are the key competitive advantage in the knowledge economy (Thite, 2004). Organizations that effectively manage and leverage the knowledge and expertise embedded in individual minds will be able to create more value and achieve superior competitive

advantage (Ruggles, 1998; Scarbrough, 2003; Chen, Chung & Huang, 2009). Such knowledge is mainly shared through direct person-to-person contacts (Kane, et al., 2006). However, employees are often unwilling or unable to share their knowledge and expertise with others because of self interests and lack of trust (Currie & Kerrin, 2003). Trust and fairness are at the very heart of KM as without them, there are no creating and sharing of implicit knowledge (Thite, 2004). Accordingly, it is important for firms to harness the involvement and participation of employees through KM process. Tools for developing trust and fairness are directly related to HRM practices, including recruitment, and training and development, participation, performance appraisal and reward system (Cho, et al., 2009). HRM is an approach to creating trust and learning atmosphere, so that employees create, share and utilize the implicit knowledge and expertise that reside in their minds (Chen, et al., 2009). The relationships between HRM and explorative strategy are shown briefly in Table 2.

Table 2 Relations of HRM and KMS

KMS HRM	Facilitating exploitative strategy by
Recruitment	Acquiring employees with particular knowledge and expertise, integrating knowledge from diverse sources and stimulating innovative idea generation, fitting culture in line with creation, knowledge sharing and decision making.
Training	Developing and nurturing required knowledge and expertise of employees, fostering employees to learn new knowledge and expertise, broadening employees' insight and learning, equipping employees with innovative minds and skills, stimulating employees to share their expertise and experience, acquiring new knowledge, and utilizing what they learn subsequently in the work.
Participation	Encouraging co-operation and exchange of ideas among employees, attracting employees to positively involve and contribute in knowledge management and learning activities, increasing employees' involvement, awareness, trust and commitment, increasing the diversity and richness of knowledge exchange and bringing more new ideas, Creating learning culture and climate, increasing commitment, encouraging direct interaction.
Performance appraisal	Reinforcement employees' desired behaviors and inducing them to comply with organizational goals, increasing commitment.
Reward	Motivating knowledge workers to share their expertise and experience, acquire new knowledge and utilize what they learn subsequently in the work, shaping individuals' behavior, increasing commitment.

(1) Recruitment

Recruitment is the critical first step toward building a productive workforce (Yongmei, James, Combs, David & Ketchen, 2007). Since organizational culture encourage creation knowledge (learning) as well as knowledge sharing and decision making (King, Chung & Honey, 2008). Former studies highlight the importance of a fit between new recruits and the organization's knowledge culture. They stress a fit between organizational culture and hiring of suitable personalities, as well as the socialization of individuals into the culture of the firm (Edvardsson, 2008). An effective recruiting system can help identify people with the right set of knowledge, skills and abilities for individual jobs (Yongmei, et al., 2007). Acquiring employees with particular knowledge and expertise is crucial for firms to operate knowledge management tools and activities. Those newly recruited employees are likely to do the effective sharing of knowledge if they are able to take the broader perspective and appropriate attitude (Currie & Kerrin, 2003). Moreover, it is also important for firms to select the employees who can integrate effectively for development of knowledge management. Selection of individuals with appropriate skills and attitudes to do the tasks enables firms to integrate knowledge from diverse sources and stimulate innovative idea generation (Scarbrough, 2003; Chen, et al., 2009).

(2) Training and development

Continuous professional development is considered to be essential to professional and knowledge workers (Yongmei, et al., 2007). Firms need to offer internal and external training opportunities to develop and nurture

required knowledge and expertise of employees (Jaw & Liu, 2003). Exposure to diverse training programs could foster employees to learn new knowledge and expertise, broaden their insight and equip them with innovative minds and skills (Nonaka & Takeuchi, 1995). Such training programs would stimulate employees to share their expertise and experience, acquire new knowledge and utilize what they learn subsequently in the work. Accordingly, training programs are crucial for employees in the knowledge management process (Argote, McEvily & Reagans, 2003).

(3) Participation

Participation can attract employees to positively involve and contribute in knowledge management and learning activities. Individuals having wider skills, expertise, and work responsibilities should give greater autonomy and self-regulation to do their work (Nonaka & Takeuchi, 1995). Granting more discretion and participation in decision making can create learning climate (King, et al., 2008) and increase employees' involvement, awareness, trust and commitment (Chen, et al., 2009). If employees have more opportunities to provide inputs and determine the required actions, they may increase the diversity and richness of knowledge exchange and bring more new ideas, thereby facilitating the discovery and utilization of dispersed knowledge and expertise in the organization (Chen, et al., 2009).

(4) Performance appraisals

Performance appraisals are the primary strategic HRM practices that firms can use to reinforce employees' behaviors and induce them to comply with organizational goals (Scarborough, 2003). In terms of performance appraisal, if firms want to elicit desired behaviors from employees, they must provide feedback and incentives that reinforce the desired behaviors (Collins & Clark, 2003). Employees are unlikely to do knowledge management activities, especially sharing of knowledge, as the divergent objectives set out for them in their performance agreements (Currie & Kerrin, 2003).

(5) Reward

If competencies are the wheels for managing knowledge work, rewards (both extrinsic and intrinsic) are the engine (Thite, 2004). Reward systems indicate what the organization values and shapes individuals' behavior. Studies on knowledge workers have found that they tend to have a high need for autonomy, significant drives for achievement, stronger identity and affiliation with a profession than a company, and a greater sense of self-direction. These characteristics make them likely to resist the authoritarian imposition of views, rules and structures (Edvardsson, 2008; Horowitz, Heng & Quazi, 2003). Hence individuals may put more efforts into knowledge management activities if compensation systems reward the contribution to creation and sharing of knowledge (Chen, et al., 2009). Accordingly, mixtures of rewards are needed to motivate knowledge workers. These include: equitable salary structures, profit-sharing or equity-based rewards, a variety of employee benefits, flexibility over working time and location as well as being given credit for significant pieces of work. For many knowledge workers, it is as motivating to have free time to work on knowledge-building projects, going to conferences or spending time on interesting projects, as monetary rewards (Edvardsson, 2008).

4. Discussion and conclusions

In the complex and changeable environment, there is a general consensus that the management of knowledge assets is vital for business. Knowledge management is creating, acquiring, storing, sharing, transferring and utilizing of both explicit and implicit forms of knowledge at the individual, group, organizational and community

level through harnessing of people, process and technology with objective of innovation and sustainable competitive advantage. This study tried to investigate how knowledge in organizations can be managed? Based on previous researches, we identified two distinct strategies for effective implementation of KM process: explorative strategy and exploitative strategy.

This study demonstrated that each one of strategy can cover some KM process. Exploitative strategy supports acquiring, storing, transferring and utilizing knowledge and explorative strategy supports creating, sharing and utilizing knowledge. So, for the effective implementation of knowledge management process, organizations have to utilize both strategies. Often companies that use knowledge effectively pursue one strategy predominantly and use the second strategy to support the first. In the today's competitive environment where learning, idea creation and sustaining competitive advantage for organization's survival are vital, organizations have to follow explorative strategy predominantly and use exploitative strategy to support explorative strategy.

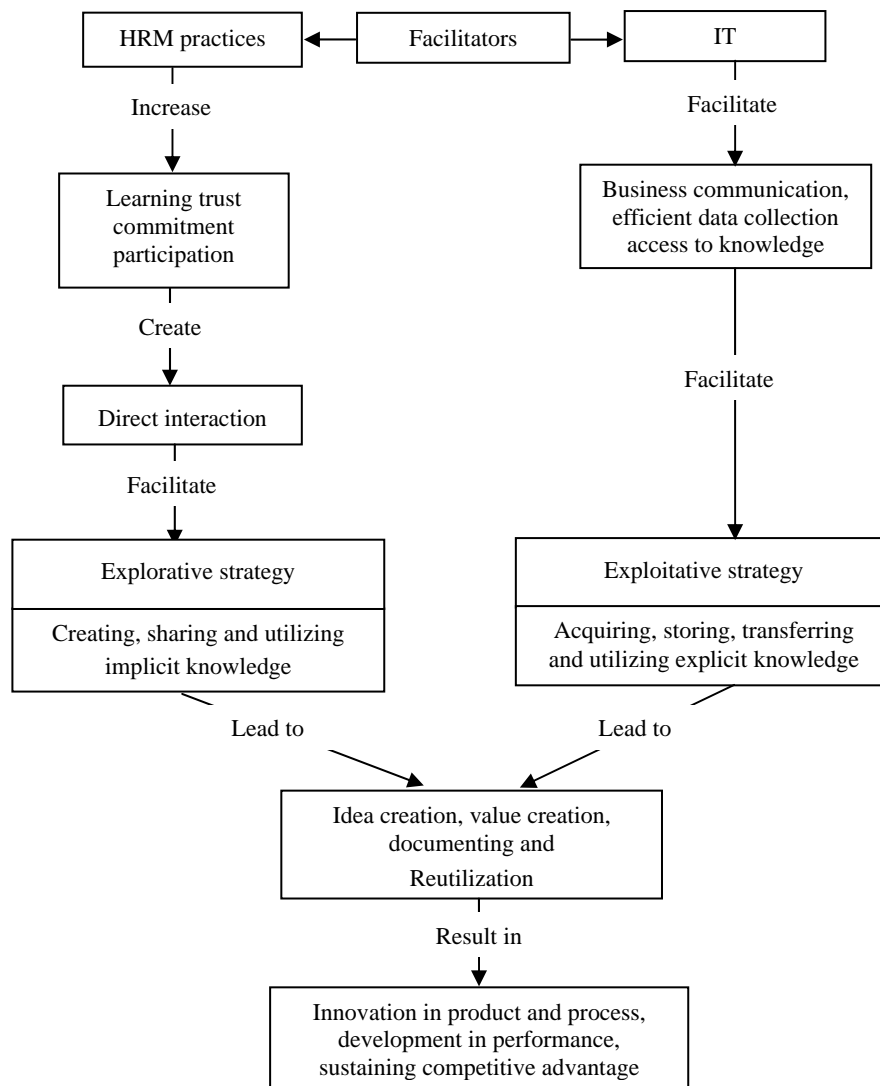


Fig. 4 Conceptual model

For effective implementing, each strategy requires desired situation. Amounts of organizational knowledge is explicit that can create value for firms. Organizations can manage them by exploitative strategy. Since exploitative

strategy encourages company and people to document their explicit knowledge to databases in order to re-use knowledge. Information technology can facilitate business communication, efficient data collection, acquisition and reutilization through database, CRM, SCM, MIS, EDA, extranet and so on. Therefore, for success exploitative strategy in action, organizations have to create and reinforce IT-based situation.

Considerable part of organizational knowledge is implicit that can only be shared through direct interactions. Organizations can manage them by explorative strategy. For management of such knowledge, organizations have to generate desired culture and environment based on learning, trust, commitment and participation that encourage direct interactions. HRM is an approach to increase direct interaction through suitable recruitment, training, participation, performance appraisal and compensation, so that employees create, share and utilize the implicit knowledge and expertise that reside in their minds. Fig. 4 shows antecedents and consequences of effective implementation of knowledge management strategy.

Finally, the future research that can derive from this paper, related with the following issues: The empirical study of relations of knowledge management strategy and HRM and IT, studying others factors (culture, structure and corporation) that can facilitate success of KM strategies, studying separately consequences KM strategies, studying mediating role of KM process in relationship between HRM and IT with innovation process and competitiveness.

References:

- Alavi, M. & Leidner, D. E.. (2001). Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS Quarterly*, 25(1), 107-136.
- Argote, L., McEvily, B. & Reagans, R.. (2003). Managing knowledge in organizations: An integrative framework and review of emerging themes. *Manage Science*, 49(4), 571-582.
- Bechina, A., Michon, N. & Nakata, K.. (2005). Pathway to innovation through knowledge management. *2nd International Conference on Intellectual Capital, Knowledge Management, and Organizational Learning*, 89-99.
- Chen, A., Chung, J. & Huang, J. W.. (2009). Strategic human resource practices and innovation performance: The mediating role of knowledge management capacity. *Journal of Business Research*, 62, 104-114.
- Chin, T. H.. (2009). The relationship between knowledge management enablers and performance. *Industrial Management & Data Systems*, 109(1), 98-117.
- Cho, Y., Cho, E. & McLean, G. N.. (2009). HRD's role in knowledge management. *Advances in Developing Human Resources*, 11(263), originally published online.
- Choi, B., Poon, S. K. & Davis, J. G. (2006). Effects of knowledge management strategy on organizational performance: Complementarily theory-based approach. *Omega*, 36, 235-251.
- Collins, C. J. & Clark, K. D.. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource in creating organizational competitive advantage. *Academy of Management Journal*, 46(6), 740-751.
- Cross, R., Parker, A., Prusak, L. & Borgatti, S. P. (2001). Knowing what we know: Supporting knowledge creation and sharing in social networks. *Organizational Dynamics*, 30(2), 100-120.
- Currie, G. & Kerrin, M.. (2003). Resource management and knowledge management: enhancing knowledge sharing in a pharmaceutical company. *The International Journal of Human Resource Management*, 14(6), 1027-1045.
- Curtis, A. & Conley, W.. (2009). Factors critical to knowledge management success. *Advances in Developing Human Resources*, 11(334).
- Davenport, T. H. & Prusak, L.. (1998). *Working knowledge: How organizations manage what they know*. Cambridge, MA: Harvard Business School Press.
- Edvardsson, I. R.. (2006). Knowledge management and SMEs: The case of Icelandic firms. *Knowledge Management Research & Practice*, 4(4), 275-282.
- Edvardsson, I. R.. (2008). HRM and knowledge management. *Employee Relations*, 30(5), 553-561.
- Fairuz, A. R. M., Chong, S. C. & Chew, K. W.. (2008). Learning organization disciplines and internet usage: An empirical study from

- Malaysia. *International Journal of Management and Enterprise Development*, 5(4), 462-483.
- Hansen, M. T., Nohira, N. & Tierney, J.. (1999). What's your strategy for managing knowledge? *Harvard Business Review*, 77(2), 106-116.
- Hariharan, A.. (2005). Critical success factors for knowledge management. *Knowledge Management Review*, 8(2), 16-19.
- Horowitz, F. M., Heng, T. C. & Quazi, H. A.. (2003). Finders, keepers? Attracting, motivating and retaining knowledge workers. *Human Resource Management Journal*, 13(4), 23-44.
- Hsien, L., Shu, C. & Hu, T.. (2007). Knowledge transfer and competitive advantage on environmental uncertainty. *An empirical study of the Taiwan semiconductor industry Technovation*, 27, 402-411.
- Jaw, B. & Liu, W.. (2003). Promoting organizational learning and self-renewal in Taiwanese companies: The role of HRM. *Human Resource Management*, 42(3), 223-241.
- Jensen, M. B., Johnson, B. B., Lorenz, C. E. & Lundvall, B.. (2007). Forms of knowledge and modes of innovation. *Research Policy*, 36, 680-693.
- Johannessen, J. A.. (2008). Organizational innovation as part of knowledge management. *International Journal of Information Management*, 28, 403-412.
- Kane, H., Ragsdell, G. & Oppenheim, C.. (2006). Knowledge management methodologies. *The Electronic Journal of Knowledge Management*, 4(2), 141-152.
- King, R. W., Chung, T. R. & Honey, M. N.. (2008). Knowledge management and organizational learning. *International Journal of Management Science*, 36, 167-172.
- Lakshman, C.. (2009). Organizational knowledge leadership. *Developing Journal*, 30(4), 338-361.
- Liu, Y. M., Combs, J. G., Ketchen, D. J. Jr. & Duane, R.. (2007). The value of human resource management for organizational performance. *Business Horizons*, 50, 503-511.
- Massa, S. & Testa, S.. (2009). A knowledge management approach to organizational competitive advantage: Evidence from the food sector. *European Management Journal*, 27, 129-141.
- Nonaka, I. & Takeuchi, H.. (1995). *The knowledge-creating company. How Japanese companies create the dynamics of innovation*. New York: Oxford University Press.
- O'Dell, C. & Grayson, C. J.. (1998). If only we knew what we know: Identification and transfer of internal best practices. *California Management Review*, 40(3), 154-174.
- Petersen, N. J. & Poufelt, F.. (2002). Knowledge management in action: A study of knowledge management in management consultancies. Working paper 1, Copenhagen Business School, Copenhagen.
- Polanyi, M.. (1966). *The tacit dimension*. London: Routledge & Kegan Paul.
- Probst, G., Raub, S. & Romhardt, K.. (2000). *Managing knowledge: Building blocks for success*. New York: John Wiley.
- Scarbrough, H.. (2003). Knowledge management, HRM and the innovation process. *International Journal of Manpower*, 24(5), 501-516.
- Thite, M.. (2004). Strategic positioning of HRM in knowledge-based organizations. *The Learning Organization*, 11(1), 28-44.
- William, R., Chung, T. R. & Honey, M. N.. (2008). Knowledge management and organizational learning. *International Journal of Management Science*, 36, 167-172.

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