

Knowledge Management and Human Resource Management (HRM): Importance of Integration

Anupama Murali¹, Sheeja Krishnakumar²

¹Content Lead -Smarter Cities, Industry Solutions - Software group, IBM India Pvt. Ltd.

²Asst. Professor, Indian Academy School of Management Studies, Research Scholar, VTU, India.

Abstract: For an organization to be knowledge intensive there is a need to have a link between HRM and knowledge. This link can enhance the performance and can lead to the success of the organization. If knowledge is stored and shared efficiently in an organization, it creates competent workers which will result in the success of the organization. Organizations nowadays focus a lot to capture knowledge and carry out set of activities which involve creation, acquisition and dissemination of knowledge. This paper tries to understand the linkages between the knowledge management and human resources function. The techniques used by organization to extract and disseminate knowledge are also examined. The use of knowledge to effectively manage the human resources of an organization is examined through this study. According to Harter, Schmidt, and Hayes (2002), HRM practices can generate increased knowledge, motivation, synergy, and commitment in a firm's employees, resulting in a source of sustained competitive advantage for the firm. This is scrutinized in this study.

Keyword: HRM, knowledge management, organization, functions.

I. INTRODUCTION

Scarbrough and Swan (2001) argue that the rise and growth of KM is one of the managerial responses to the empirical trends associated with globalisation and post- industrialism. A number of scholars, such as Hilsop (2003), Morrow and McElroy (2001), and Moynihan et al. (2001) have argued on the missing link between HRM practices and organization outcomes. Knowledge management is recognized as the fundamental activity for obtaining, growing and sustaining intellectual capital in organizations (Marr & Schiuma, 2001). Human resource practices (HR practices) are the primary means by which firms can influence and shape the skills, attitudes, and behavior of individuals to do their work and achieve organizational goals (Collins & Clark, 2003; Martinsons, 1995). The efficient and effective Human Resource Management (HRM) and the use of proven HRM practices in job design, recruitment, selection and orientation, performance management, compensation, training and development can help the organization and its managers to create conditions for efficient and effective management of workers and their knowledge in the organization Martin, Boras, Ljubica (2008). The knowledge and competencies of human resource are widely recognized as valuable assets for firms because of the characteristics of firm-specific, socially complex, and path-dependent (Collins & Clark, 2003; Wright, Dunford, & Snell, 2001; Youndt et al., 1996; Lado & Wilson, 1994). Knowledge management is recognized as the fundamental activity for obtaining, growing and sustaining intellectual capital in organizations (Marr & Schiuma, 2001).The term knowledge used in the organizational context derives its base from the data triad. The various terms used in the triad are as follows:

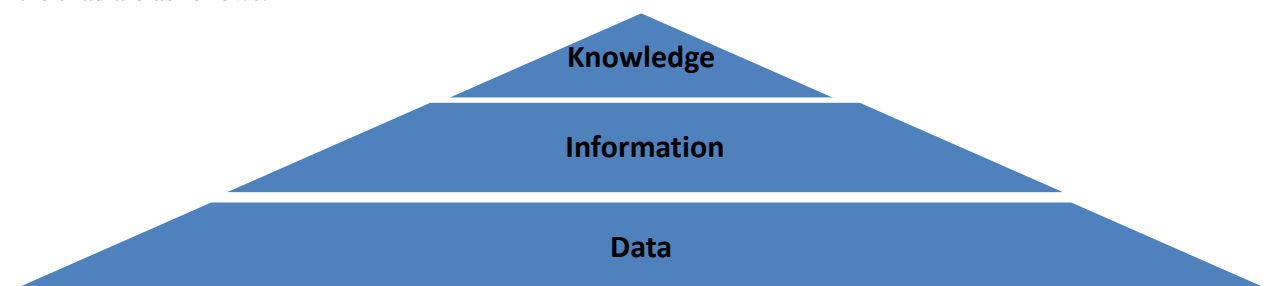


Fig. 1 Data Triad

Data: Raw facts which are unorganized and which do not carry much value for the end user is called data.

Information: Organized facts which convey a lot of meaning for the end user is called information.

Knowledge: Information which is gathered and accumulated over a long time using various aspects of experiential learning is called knowledge.

Organizations nowadays focus a lot on the capture of both types of knowledge listed above. The set of activities which involve creation, acquisition and dissemination of knowledge is referred to as knowledge management. This stream is gaining a lot of focus and attention nowadays as organizations have realized the power and importance of knowledge capture.

Knowledge can be of two types, they are tacit and explicit. Tacit knowledge is what people carry in their minds and we find it difficult to access. Explicit knowledge on the other hand, is what is documented or codified and can be transferred easily to others. The processes, procedures, journals, manuals, drawings or any such artifacts come under the category of explicit knowledge. There are times when we are not ourselves aware of the knowledge we possess and also how valuable it can turn out to be if shared with others. The transfer of tacit knowledge mainly happens through personal contact and trust but this is considered to be valuable as it is considered as a resourceful input when it comes to innovations.

This paper tries to find out the linkage between the HR functions and knowledge management. The study tries to understand the way in which it is used in an organization. Also tries to understand the use of knowledge in different functions of human resource management.

Knowledge Management in organizations

Organizations nowadays focus a lot on the capture of both tacit and explicit types of knowledge. According to Harman and Brelade (2007): “Knowledge management is the acquisition and use of resources to create an environment in which information is accessible to individuals and in which individuals acquire, share and use that information to develop their own knowledge and are encouraged and enabled to apply their knowledge for the benefit of the organization.” This stream is gaining a lot of focus and attention nowadays as organizations have realized the power and importance of knowledge capture.

Roots of Knowledge Capture in Organizations

The diagram shown below explains the various common aspects which are used as roots of knowledge capture by organizations:

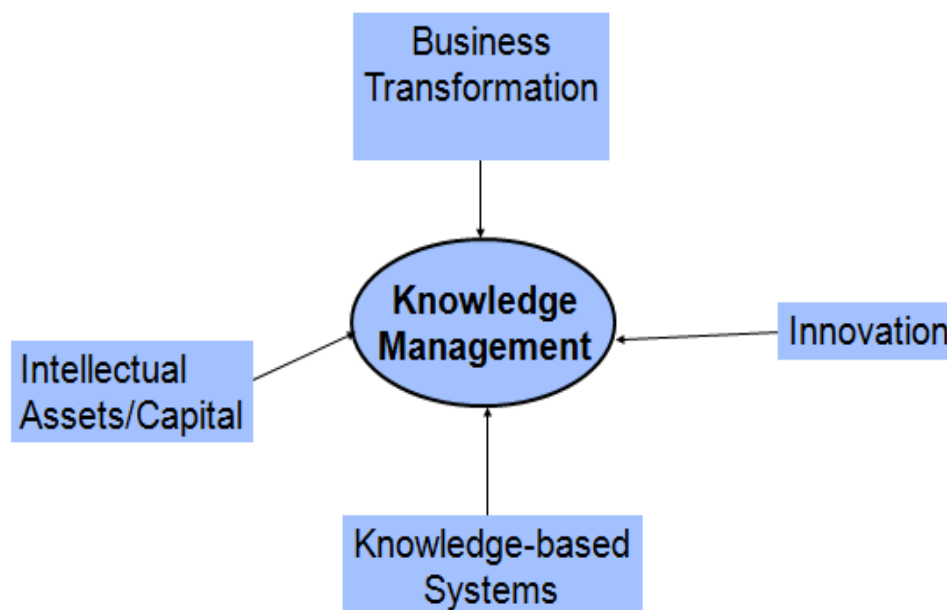


Fig. 2: Roots of Knowledge capture in organization

Intellectual Property & Innovation: Intellectual Property (IP) refers to any innovative idea/concept on which the owner or creator has exclusive authority or copyright. IP is mainly captured by means of filing a patent or a disclosure. Organizations extremely encourage filing of patents mainly because of the fact that these patents and disclosures serve as a rich gold mine of ideas which can be later productized by these organizations. Many leading organizations in the world like IBM, Microsoft etc file thousands of patents every year. These patents are filed by the organizations based on the innovativeness of the idea, business value to the organization and support for the existing business/ product line of the organization. Many organizations reward a huge sum of money to the employees who file patents in an attempt to imbibe innovative culture in the organization. In order to further imbibe the innovative culture, many organizations regularly conduct innovation competitions. In the present competitive world, innovation is the key differentiating factor for an organization. At present, the top three innovative organizations in the world are:

- 1) Apple Inc
- 2) Microsoft
- 3) 3M InfoTech

Most of these organizations allocate time to their employees to focus on innovative ideas as a part of their daily activities.

The details of the patented ideas which are filed by the organizations are tracked and captured in an organization database for the use and reference of their employees. Some ideas which cannot be patented for various reasons are converted into white papers and are either stored internally for later reference or are made publicly available for the benefit of the general public. Thus patents and white papers serve as major mechanisms for capture of knowledge by organizations.

Business Transformation /Merger & Acquisition: Business transformation involves a major transformation in the business strategy of organizations in order to align itself to a changing market condition. This can be achieved in one of the following ways:

- 1) Changing the existing product line
- 2) Adding/deleting products from the existing product line
- 3) Acquiring other organizations in an attempt to either kill competition or add a new product line. This is referred to as acquisition which has become a very common phenomenon for present day organizations. After acquisition, the acquired organization needs to be merged with the processes and the practices of the parent organization and this is referred to as merger. During mergers and acquisitions, the parent organization gains access to a rich wealth of information about the processes and practices of the acquired organization. Specialized documentation teams and market research agencies are employed to capture the various process related aspects, financial aspects and the various types of transitions which are required to merge the acquired company to the parent company. These Merger & Acquisition documents are stored in centralized repository to be used as a reference later. Some of them are made available to the public to be used as business cases for academic purposes.

Knowledge-based systems: Artificial intelligence (AI) and Expert systems are another source of knowledge capture for organizations. Artificial intelligence is an attempt to imbibe intelligence to a machine or computer artificially using programming in order to mimic the capabilities of a human expert. This is typically used in areas or domains where availability of skill or expertise is very limited. The systems are programmed extensively using various techniques so that these systems can serve as experts for the organizations later on. Though development of such systems is a costly affair for organizations, many organizations venture into such initiatives because of their long standing benefits and Return on Investments later on for them.

Knowledge Management techniques used by Organizations

In this section, we will understand the commonly used knowledge management techniques used by organizations.

- 1) **Knowledge Repositories/ Knowledge Management Systems:** These are repositories used to store and manage the various knowledge artefacts like white papers, articles, videos and other recordings created by the employees of an organization. The access to these repositories is regulated by using role based access control which will restrict the type of access for different classes of employees. Many of these repositories will also have the options for the employees to give their opinion and rating of these artefacts. In order to regulate submissions to these repositories, there is typically a committee which will verify and validate the authenticity of the artifact which needs to be submitted to these repositories.

2) **Communities of Knowledge:** Most of the organizations maintain knowledge communities for maintaining knowledge pertaining to their various product lines/technologies. These communities will not only store the various knowledge artifacts, but will also serve as a forum for the employees and sometimes the public to post queries pertaining to those products/technologies. These communities and forums go a long way on storing and spreading knowledge across and beyond the organization boundaries. IBM Developer Works is one such forum which is maintained by IBM to manage the knowledge artifacts and also answer the queries pertaining to its products from the general public.

3) **Knowledge Sharing Sessions:** Knowledge sharing sessions are a common feature in most of the organizations. This is done mainly to share the knowledge or expertise gained in various technological streams with the rest of the organization. These sessions are conducted by the experts in the respective streams. These sessions are recorded and made available for future use or reference in the knowledge repositories. Some organizations even upload these recordings to YouTube for it to be beneficial to the general public as well.

4) **Mentoring:** Mentoring is done as a part of skill sharing in an attempt to share the skills or knowledge of an expert in a domain to some other(s) who don't possess it. There could be mentoring on various aspects which range from product, technology etc to soft skills like communication, time management and work life balance management. Mentoring is promoted by most of the organizations as an attempt to bring up the skills of its employees. Many organizations offer specialized intranet sites which help their employees to locate mentors in their area of choice. Mentoring is not a permanent relationship and can be discontinued at any point without any kind of impact or loss for the mentor or the mentee.

5) **Knowledge Centric Support (KCS):** Knowledge-Centered Support (KCS) is a methodology and a set of practices and processes that focuses on knowledge as a key asset of the customer/technical support organization. Development began in 1992 by the Consortium for Service Innovation; a non-profit alliance of support organizations. Its premise is to capture, structure, and re-use technical support knowledge.

KCS seeks to:

Create content as a by-product of solving problems, which is better known as within the information technology infrastructure library (ITIL) incident management process, as well as the problem management process. As support analysts capture information related to an incident, they create knowledge that can be reused within the support process by other support analysts as well as customers with access to a self-service knowledge base.

Evolve content based on demand and usage. As people interact with the knowledge base within the incident management process, it must be reviewed before delivering the knowledge to a customer. If there is need to correct or enhance the knowledge, it has to be fixed at that time or flag it for another person to fix if there is no access authority to the knowledge. Under this model, knowledge is evolved just-in-time based on demand instead of just-in-case. This lowers the cost of knowledge management.

Develop a knowledge base of an organization that is a collective experience up to now. New knowledge capture within the incident management process is an experience resulting from one interaction. The knowledge has not been validated or verified beyond the initial incident. Thus the initial knowledge is not as trusted in this state, which is referred to as draft knowledge. It is not reused until the trust is improved. At some point the knowledge will be marked as trusted and either approved for internal use or published for self-service. The knowledge base under the KCS methodology includes knowledge that is at different states of trust and visibility. It can be concluded that all knowledge in a knowledge base must be perfect, validated, and highly trusted.

Reward learning, collaboration, sharing and improving. The culture of the organization must change to recognize the value of an individual based on the knowledge they share that enables the organization to be more effective and efficient.

Integration of HR functions and Knowledge Management

A proper knowledge management system can be developed by competent human resources. The way in which amount is spend on knowledge management system should be based on the purpose related to it. Knowledge management should be framed in such a way that it is required to solve the real problems in the organization. Identifying the problems and rectifying is more important than deciding the tools to be used to solve it. Scholars have argued that knowledge is dependent on people and that HRM issues, such as recruitment and selection, education and development, performance management, pay and reward, as well as the creation of a learning culture are vital for managing knowledge within firms (Evans 2003; Carter and Scarbrough 2001; Currie and Kerrin 2003; Hunter et al 2002). The relation between knowledge management and human resource management is explained in the figure.3 given below.

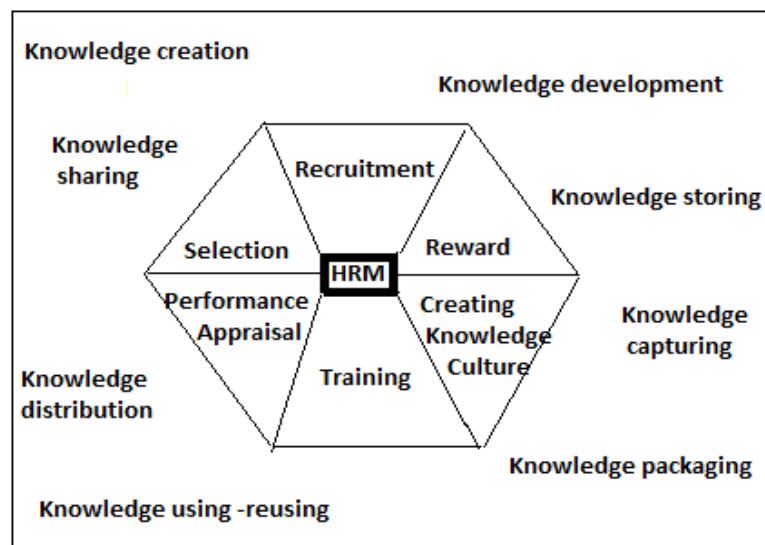


Fig.3: Integration of HRM and knowledge management

When firms develop and introduce new product, new process and/or new administrative practices, they require innovative and creative employees, who are flexible, risk taking, and tolerant of uncertainty and ambiguity (Chen & Huang, 2007). There should be sharing of knowledge among the employees for the creativity to reach its pinnacle. Currie and Kerrin (2003) argue that traditional recruitment and selection practices can even block knowledge sharing between groups or departments in firms organised according the functional principle. A motivating environment where in all the employees coordinate and correspond with each other their knowledge, skill and abilities can build an organization of novelty, easily. Candidates with the positive attitude to knowledge sharing have to be selected for the improvement of company's performance. Evans (2003) argues for revising the interview and selection processes so that they gather evidence about individuals' knowledge-building behaviours. Some studies highlight the importance of a fit between new recruits and the organisation's knowledge culture. These studies are, therefore, related to the person- organisational fit literature within HRM, stressing a fit between organisational culture and hiring of suitable personality, as well as the socialisation of individuals into the culture of the firm (Kristof 1996; Judge and Cable 1997).

Robertson and Hammesley (2000) point out that continuous professional development is considered to be essential to professional and knowledge workers. In order to stay at the forefront of their professional fields they must be constantly aware of developments within their specific disciplines and professions and they need to participate in activities that offer opportunities to further their own professional development. The training programs within the organization should be conducted in such a way that tacit knowledge can be transformed into explicit knowledge. Employee knowledge, skills, competencies and attitudes has to be improved by emphasising the idea of converting tacit to explicit knowledge. Training helps employee master knowledge, skill, and ability which would be contribute to innovation in terms of products, production processes, and management practices in daily operation (Schuler & Jackson, 1987).

Zárraga and Bonache (2003) write that traditional reward systems reward those who produce rather than those who share. Evans (2003) argues that there are mixed views as to whether organisations need to introduce separate rewards to encourage knowledge building and sharing. 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 (Evans 2003; Depres and Hiltrop 1995). Reward system provides financial reward, promotion and other recognition, in order to motivate employees to take risk, develop successful new products and generate newer ideas (Guptal & Singhal, 1993).

Evans (2003) points out that on the basis of what gets measured normally gets done it is important that firms consider the knowledge component in their performance management systems. Swart and Kinnie (2003) argue that a long-term developmental focus on performance management was one of the central factors in integrating knowledge within the organisation. Performance management needs to consider, according to Evans (2003, 171), the different ways

in which individuals contribute knowledge. Managers need to consider knowledge acquisition, knowledge sharing, knowledge re-use, knowledge development Edvardsson (2003).

Knowledge should be managed in such a way that an environment is created where organization's policies and procedures are aligned to the mission and the ethics statement of the organization. A culture has to be developed that knowledge is shared for the good of the company. Evans (2003) stresses the role of HR managers in helping their organisation to develop an organisational culture that supports knowledge building and sharing. A favourable culture is required where information is available at any time, without any bias at the appropriate time. For creating an environment of knowledge sharing and to develop a culture related to it, it is required to have a continuous encouragement and motivation to the employees. A continuous monitoring and rewarding method or some way of recognition or affiliation is required initially to maintain the knowledge culture that is brought in. A supportive, collaborative organizational culture is important from the perspective of knowledge creation and sharing (Iles et al. 2001, Dobrai 2004). This has to be highlighted in all the functions of human resource management like recruitment, selection, training, compensation, performance appraisal etc. There should be an uninterrupted 'give and take' of knowledge. So that the knowledge is not left stagnant in the minds of few but shared, created, calculated and strengthened in everybody. To bring about this change in the organization a renovated human resources practices and a cultural shift is a must. Characteristics of this culture are change, innovation, openness and trust (Skyrme and Amidon 1997). Most importantly, HR has to build a culture in which learning from day-to-day practice is valued, encouraged and supported by providing time, public and private spaces for learning, providing learning resources (information centres, special learning laboratories, virtual university), and reward sharers and learners. Edvardsson (2003). A culture where informal gatherings are encouraged can improve knowledge sharing and new idea generation occur. Relaxations in rules and allowing employees to mingle may encourage healthy discussions which can result in solving of complicated problems. Information, ideas, experiences from different brains when intersected may result in easy way of finding solutions.

Technology plays a major role in creating and disseminating knowledge. So it can be considered as an essential part of knowledge management. A strategic approach is required to improve, maintain and constrain the use of technology related to knowledge creation. A drawback related to the excess rely on technology may lead to underutilization of tacit knowledge. Nowadays social contacts are limited with the use of technology and that face to face relation is slowly disappearing. Thus it is found that the way in which knowledge is created, stored and shared has also been influenced by the technology. This has created the issues of privacy and confidentiality.

There is no doubt from the previous paragraphs that knowledge management is closely related to human resource management functions. The success of the organization is related to the way in which the knowledge is utilized appropriately in the organization. Competitive gain is possible when knowledge is shared and applied in proper manner.

II. CONCLUSION: EFFECTIVENESS OF KNOWLEDGE MANAGEMENT AND HRM

For knowledge to create, store and disseminate in an organization effectively the human resource functions should be designed in a proper manner so that knowledge aspects are taken care. During recruitment and selection process, candidates to be selected should be willing to adjust with the culture that share and continuously learn and update knowledge, skills and abilities. Performance has to be appraised on a continuous basis and be transparent. A regular feedback should be a motivation for them to improve for the better. Those who performed well to acquire more knowledge, develop skill or create new ideas should be awarded more compared to others. The novel ideas created has to be shared for developing into an innovative and constructive feature for the future. A fair and inspiring rewards, both monetary and non monetary, can enable them to reach the heights of performance. Training and development programmes help to improve and enhance the existing knowledge, skills and abilities. These will result in competitive advantage for the organization. The support and serious guidance from the top level management is another important yardstick for the proper implementation of knowledge management. The role of knowledge facilitators is broad and should integrate well with the functions of human resource management. They play a vital task to create knowledge workers within the company. Competitive advantage is depended on the creation and exploitation of intellectual capital. By effectively managing knowledge a strong intellectual capital can be generated which will be useful for having a competitive edge over other companies. Apart from the conducive culture, effective communication, employee supporting policies, updated technologies help the organization to transfer into a knowledge driven organization. Minbaeva (2005) viewed HRM practices a set of practices used by organization to manage human resources through facilitating the development of competencies that are firm specific, produce complex social relation and generate organization knowledge to sustain competitive advantage. Knowledge management is accepted as a key support function in most of the

organizations nowadays. This has led to the evolution of many coveted positions like Chief Knowledge officer and Knowledge manager. But many streams including academia have not realized the importance of this field. More impetus should be given by organizations to promote this field within their ecosystem and also to make the public aware of the importance of this field. The rise of the knowledge economy has seen a proliferation of information and communication technologies, coupled with greater organizational complexity, the growth of virtual and global creation developed by Nonaka and Takeuchi (1995) in their studies of knowledge creation and used in Japanese companies.

REFERENCES

1. Argote, L. & Ingram, P. (2000), Knowledge transfer: A basis for competitive advantage in firms. *Organizational Behavior and Human Decision Process*, 82: 150-169.
2. Cabrera, A., Collins, W. C., & Salgado, J. F. (2006), Determinants of individual engagement in knowledge sharing. *International Journal of Human Resource Management*, 17(2): 254-264.
3. Carter, G. and Scarbrough, H. (2001) 'Towards a second generation of KM? The people management challenge', *Education and Training*, 43:4/5, 215-224.
4. Chen, C. J. and Huang, J. W. (2009) —Strategic human resource practices and innovation performance — The mediating role of knowledge management capacity, *Journal of Business Research*, Vol.62, No.1, pp 104- 114.
5. Chua, A. (2002) 'Taxonomy of organisational knowledge', *Singapore Management Review*, 24:2, 69-76.
6. Collins, C. J., & Smith, K. G. (2006), Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms. *Academy of Management Journal*, 49(3): 544-560.
7. Currie, G. and Kerrin, M. (2003) 'Human resource management and knowledge management: enhancing knowledge sharing in a pharmaceutical company', *International Journal of Human Resource Management*, 14:6, 1027-1045.
8. Daft, R.F. (2001) *Organization Theory and Design*, Cincinnati: South-Western College Publishing.
9. Despres, C. and Hiltrop, J.M. (1995) 'Human Resource Management in the Knowledge Age: Current practice and perspectives on the future', *Employee Relations*, 17:1, 9-24.
10. Edvardsson (2003) *Knowledge Management and Creative HRM Occasional Paper 14 Department of Human Resource Management, University of Strathclyde*
11. Evans, C. (2003). *Managing for Knowledge: HR's strategic role*, Amsterdam: Butterworth-Heinemann.
12. Hitt, M. A., & DeNisi, A. (2003), *Managing human resources for knowledge-based competition*. In S. E. Jackson, A. DeNisi and M. A. Hitt (Eds.), *Managing knowledge for sustained competitive advantage: 399-428*. San Francisco, CA: Jossey-Bass.
13. Hiltrop, J. M. (1996), —Managing the changing psychological contract, *Employee Relations*, Vol.18, No.1, pp. 36- 49.
14. Hunter, L., Beaumont, P., & Lee, M. (2002), Knowledge management practice in Scottish law firms. *Human Resource Management Journal*, 12(2): 4-21.
15. Iles, P., M & Altman, Y. (2001), "HRM and Knowledge Management: Responding to the Challenge", *Research and Practice in Human Resource Management*, 9(1), 3-33. (accessed: at rphrm.curtin.edu.au/issue_1/knowledge.html on: may 15, 2008 Jackson, S. E.
16. Judge, T.A. and Cable, D.A. (1997) 'Applicant Personality, Organizational Culture, and Organizational Attraction', *Personnel Psychology*, 50, 359-394.
17. Kang, S.-C., Morris, S. S., & Snell, S. A. (2007), Relational archetypes, organizational learning, and value creation: Extending the human resource architecture. *Academy of Management Review*, 32(1): 236-256.
18. Kristof, A.L. (1996) 'Person-Organization Fit: An integrative review of its conceptualisations, measurement, and implications', *Personnel Psychology*, 49, 1-49.
19. Lado, A. A., & Wilson, M. C. (1994) Human resource systems and sustained competitive advantage: A competency-based perspective. *Academy of Management Review*, 19(4): 699-727.
20. Leana, C. R., & Van Buren III, H. J.(1999) Organizational social capital and employment practices. *Academy of Management Review*, 24: 538-555.
21. Marr, B. and Schiuma, G. (2001), *Measuring and Managing Intellectual Capital and Knowledge Assets in New Economy Organizations*. In M. Bourne (Ed.), *Handbook of Performance Measurement*. London: Gee.
22. Minbaeva, D. (2005), HRM practices and knowledge transfer. *Personnel Review*, 35(1): 125-144.

23. Mischel, W. (1977), The interaction of person and situation. In D. Magnusson and N. S. Endler (Eds.), *Personality at the crossroads: Current issues in interactional psychology*: 333-352. Hillsdale, NJ: Erlbaum.
24. Morrow, P. C. and McElroy, J. C. (2003), —Work commitment conceptual and methodological developments for the management of human resources, *Human Resource Management Review*, Vol.11, No.3, pp. 177-180.
25. Moynihan, L. M., Gardner, T. M., Park, H. J. and Wright, P. M. (2001). *HR Practices and Customer Satisfaction: The Mediating Link of Commitment*. (CAHRS Working Paper 01-14), Ithaca, NY: Cornell University, School of Industrial and Labor Relations, Center for Advanced Human Resource Studies. Available from <http://digitalcommons.ilr.cornell.edu/cahrswp/77>.
26. Nonaka, I., & Takeuchi, H. (1995), *The Knowledge-creating Company*. New York: Oxford University Press.
27. Robertson, M. and Hammersley, G.O. (2000) 'Knowledge management practices within a knowledge-intensive firm: the significance of the people management dimension', *Journal of European Industrial Training*, 24:2/3/4, 241-253.
28. Scarbrough, H. and Swan, J. (2001) 'Explaining the diffusion of knowledge management: The role of fashion', *British Journal of Management*, 12, 3-12.
29. Schuler, R. S. and Jackson, S. E. (1987), —Linking competitive strategies with human resource management practices, *Academy of Management Executive*, Vol.1, No.3, pp. 207-219.
30. Skyrme, David J. and Amidon, Debra M. (1997), "Creating the Knowledge - Based Business", *Business Intelligence Ltd*. London.
31. Storey, J., & Quintas, P. (2001), *Knowledge management and HRM*. In J. Storey (Ed.), *Human resource management: A critical text* : 339-363. London: Thomson Learning.
32. Swart, J., & Kinnie, N. (2003), *Sharing knowledge in knowledge-intensive firms*. *Human Resource Management Journal*, 13(2): 60-75.
33. Willem, A., & Scarbrough, H. (2006), *Social capital and political bias in knowledge sharing: An exploratory study*. *Human Relations*, 59(10): 1343-1370.
34. Wright, P. M., Dunford, B. B., & Snell, S. A. (2001), *Human resources and the resource based view of the firm*. *Journal of Management*, 27: 701-721.
35. Youndt, M. A., & Snell, S. A. (2004), *Human resource configurations, intellectual capital and organizational performance*. *Journal of Managerial Issues*, 16(3): 337-360.
36. Zárraga, C. and Bonache, J. (2003) 'Assessing the team environment for knowledge sharing: an empirical analysis', *International Journal of Human Resource Management*, 17:7, 1227-1245.
37. Zárraga, C., & Bonache, J. (2005), *The impact of team atmosphere on knowledge outcomes in self-managed teams*. *Organization Studies*, 26(5): 661-681.