Integrating Knowledge Management and Human Resource Management for Sustainable Performance

Zahed Mannan*

Abstract: There is a clear shift in human resource management from a “service provider” to a “business partner”; however, the new requirements and needs can also be met by the line management or external parties. For this reason, the new development is at the same time an immense opportunity and a threat for the HR managers. This research examines the linkages between human resource management and knowledge management. Specifically, the association between four areas of human resource management (training, decision-making, performance appraisal, and compensation and reward) with the five areas of knowledge management (knowledge acquisition, knowledge documentation, knowledge transfer, knowledge creation, knowledge application) is explored. The role of human resource management is also unique. In terms of employee development, the focus should be placed on achieving quality, creativity, leadership, and problem solving skill. The design of a compensation and reward system should be on promoting group performance, knowledge sharing, and innovative thinking. The performance appraisal must be the base of evaluation of employee’s knowledge management practices, and an input for directing knowledge management efforts.

Keywords: knowledge management, Human resource management, Training, Performance measurement, Compensation.

1.0 Introduction

The recent advancement in IT has significantly reduced the data management cost (Civi, 2000). Such change inspires the concept of knowledge economy and knowledge management; the issues that become important in many multinational corporations. Surveys reveal that knowledge management projects mostly focused on identifying and capturing knowledge, connecting people to people through electronic means, and sustaining an organization’s growth and learning ability (Chong et al., 2000). The types of knowledge management project being initiated include knowledge management groupware/intranet, building of electronic repositories for organizational knowledge captured, identification of strategic knowledge needs and assets (Chong et al., 2000). However, many tend to forget that the main purpose of knowledge management is to help create a learning organization that continues to improve the ability to cope with the ever-changing market place. The second misbelieve is that by simply investing in advanced IT equipment, new knowledge will emerge. The truth is that it is the interaction of humans through certain media or instruments (including information communication technology) that creates new knowledge, and adds to the pool of organizational knowledge that acts as the engine of an organization’s growth and learning capability. Hence, the focus of knowledge management should rightly be placed on

*Assistant Professor, Department of Management, Hamdard University Bangladesh
Ph.D Research Fellow, Department of Management Studies, Dhaka University
humans themselves, and the impact made by human resource management on knowledge management practices.

The nature of work has changed in human history. Not so long ago, in the agricultural society, it was focused on the soil. In the more recent history it was capital driven. This was the so-called industrial society. We are still partially in this society, but more and more we are entering the knowledge society. In that society work is linked to knowledge and learning, which makes most of the working and management models and concepts obsolete. Also, the perception of time has changed. In an agricultural society time is work, and the work is dependent on the seasons. In the industrial society time is money, because capital is the main value. In the knowledge society time is life; we do not live any more to work, we work again to live. This means that we have new paradigms in the knowledge society and in the knowledge economy in relation to work, to time and, consequently, to values. It is no longer the activity and the amount of work that is creating new values, but the knowledge and its application. Knowledge is no longer directly time dependent. Therefore, our perceptions of time will change.

Smith and Kelly (1997) believe that “future economic and strategic advantage will rest with the organizations that can most effectively attract, develop and retain a diverse group of the best and the brightest human talent in the market place”. Obviously, this puts HR at the forefront of knowledge economy (Soliman & Spooner, 2000). KM offers the much-needed window of opportunity that the HR profession so desperately needs to redeem its credibility maligned by historical reasons throughout its troubled evolution. According to Watkins and Marsick (1992), “HR professionals have long sought to define who they are in order to clarify what is that they do that is unique” and believe that the “concept of KM or learning organization is one such niche for HR as it brings together the two primary foci for this field: learning and the workplace context in which it takes place”.

1.1 Knowledge Management

Defining the concept of KM is difficult, as different perspectives or schools of KM can yield different dimensions and meanings. For examples, Malhotra (1998) holds that KM “embodies organizational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings”. Coombs and Hull (1998) classified KM activities under three major headings: knowledge processing, knowledge domains and knowledge formality. For Bukowitz and Williams (1999), KM is “the process by which the organization generates wealth from its intellectual or knowledge-based assets”. Empirical survey by Chong et al. (2000) has identified it as “a process of leveraging and articulating skills and expertise of employees, supported by information technology”. Bhatt (2001) sees knowledge management as “a process of knowledge creation, validation, presentation, distribution and application”. In the eyes of corporate players such as Jim Botkin, President of Interclass, he associates KM with “communications, capturing of best yet practices and sharing for reuse what has worked before” (Chatzkel, 2000). A more formal definition of KM given by The American Productivity & Quality Center “the strategies and processes of identifying, capturing, and leveraging knowledge” (Manasco, 1996).
Even though the above definitions differ in their description of KM, there seems to be a harmony of treating KM as a process of leveraging knowledge as the means of achieving innovation in process and products/services, effective decision-making, and organizational alteration to the market. Perhaps the definitions will give a more inclusive understanding of KM if it is allied with the organizational knowledge management system (OKMS). OKMS could be viewed as a system that enhances organizational learning through facilitation of knowledge (both implicit and explicit) exchange and sharing. Meso and Smith (2000) proposed a socio-technical view of OKMS, by treating OKMS as “a complex combination of technology infrastructure, organizational infrastructure, corporate culture, knowledge and people”. Technology infrastructure is the IT tools (i.e. hardware, software, and protocols) that facilitate any form of electronic encoding and exchanging of knowledge. Organizational structure refers to the technique employees are organized into teams (informal and formal), and interact within teams; the set of roles and goals of each team, and how it is being related to organizational strategy. Corporate culture is the shared value and norms, and ethics and practices in the organization. Knowledge covers all types of knowledge (i.e. tangible and intangible) that exist within an organization and its people. People include both the external and internal stakeholders of an organization.

1.2 The link between HRM and KM

Drawing from the arguments above, it appears that the actual outcome of KM is hard to predict. Nevertheless, it is safe to claim that “people” should be the main driver of KM (Civi, 2000; Gooijer, 2000; Robertson and Hammersley, 2000; Soliman and Spooner, 2000). And that KM is actually an evolved form of human resource management (HRM), using IT as the supporting mechanism in the human interactions and collaborations process. HRM can be viewed as strategic personnel management emphasizing on acquisition, organization and motivation of human resources (Armstrong, 2000). The role of HRM in KM has been discussed by a number of researchers and practitioners. For example, a personnel management practitioner like Armstrong (2000, p. 585) viewed the role of HR in KM as “to facilitate the dissemination of learning through workshops, projects and conferences and later, to take responsibility for coordinating the preparation of business plans which incorporated the outcome of the learning activities”. Garavan et al. (2000) see that the daily task of human resource development in building of a learning organization as:

- Assisting employees in creating and using knowledge;
- Establishing appropriate networks; and
- Engaging in double-loop learning.

Building on a model developed by Clarke and Staunton (1989), Soliman and Spooner (2000) proposed a model of the HRM role in KM. The main tasks of HRM are to monitor, measure and intervene in construction, embodiment, dissemination and use of knowledge by the employees. Soliman and Spooner (2000) also outlined the HRM role in the following eight human resource knowledge management strategies:

1. Alignment of knowledge management with business directions;
2. Identification of the benefits of knowledge management efforts;
3. Choosing the appropriate knowledge management program;
4. Implementing a know-how strategy;
5. Creating supportive environments for knowledge management programs;
6. Use of enabling technologies for the knowledge management program;
7. Creating the knowledge management team; and
8. Creating knowledge management leadership.

2.0 Statement of the Research Problem

The specific problem that has been identified in this research is that knowledge management (KM) means different things to professionals in different industries and is often associated with huge capital investments in Information Technology (IT) with little or no return on investment. Managing information is just one component of knowledge management, managing the people component and the knowledge creation components add different dimensions to knowledge management. There are currently numerous KM frameworks adding to the knowledge management literature but none are fully compliant with the systems thinking concept and very few explain how knowledge is created and how the other components should be managed. One cannot manage something to best effect if one does not know how it is created and the circumstances surrounding its application.

This research will specifically focus on the contribution that Human Resource (HR) and Information Technology (IT) management makes to the management of knowledge in the organization. This research will also seek to find a methodology that is aligned with the systems thinking concept to manage the knowledge creation process within the organization.

3.0 Literature Review

The knowledge-based economy places great importance on the diffusion and use of information and knowledge as well as its creation. The determinants of success of enterprises, and of national economies as a whole, is ever more reliant upon their effectiveness in gathering and utilizing knowledge. Strategic know-how and competence are being developed interactively and shared within sub-groups and networks, where know-who is significant. The economy becomes a hierarchy of networks driven by acceleration in the rate of change and the rate of learning. What is created is a network society, where the opportunity and capability to access and join knowledge and learning intensive relations determines the socio-economic position of individuals and firms (OECD, 1996).

In the knowledge-based economy, firms search for linkages to promote inter-firm interactive learning and for outside partners and networks to provide complementary assets. These relationships help firms to spread the cost and risk associated with innovation among a greater number of organizations, to gain access to new research results, to acquire key technological components of a new product and process, and to share assets in manufacturing, marketing and distribution. As they develop new products and processes, firms determine which activities they will undertake individually, in collaboration with other firms, in collaboration with universities or research institutions, and with the support of government (OECD, 1996).
Different kinds of knowledge are distinguishable in the knowledge-based economy including know-what, know-why, know-how and know-who. Knowledge is a deeper concept than information, which refers to the most accessible elements of the know-what and know-why components of knowledge. Some types of knowledge come closest to being market commodities, while other types of knowledge, particularly know-how and know-who, are more tacit and difficult to measure, but often are the most valuable to possess. The OECD describes these as follows:

- Know-what represents an accumulation of facts, and is closest to information, in that it can be broken down into bits.
- Know-why refers to scientific knowledge of the principles and laws of nature, that underlies technological development and product and process advances.
- Know-how suggests the skills of capability to do something, typical of the knowledge developed and kept within a company, and the reason for the formation of industrial networks to enable firms to share and combine elements of know-how.
- Know-who involves information about who knows what, and who knows how to do what, and implies the formation of special social relationships to secure access to experts, which is particularly necessary in response to acceleration in the rate of change.

In fast moving, innovative environments that increasingly typify a growing number of market sectors, the capacity to generate new knowledge, to integrate and transfer knowledge, to experiment with prototypes, and to import knowledge becomes a core capability of the company. Leonard of Harvard Business School, defines core capability as a multi-dimensional interactive system of knowledge assets, which encompasses both process and content, has built up over time, is not readily imitated or transferred and is based on shared values. Core capability will provide competitive advantage by supporting the performance and innovation of multiple product lines or processes (Leonard, 1999).

The strategic business drivers of knowledge management therefore concern how to protect and develop the intellectual capital of the company, how to improve performance, sustain intelligence, enhance learning, and promote continual innovation. Knowledge management is driven by the need to enhance:

- Intellectual asset management;
- Operational efficiency;
- Knowledge worker productivity;
- Customer and competitor intelligence;
- Continuous improvement;
- Organizational learning;
- Innovation in products and services;
- Time to market.
For organizations, capability based on knowledge-based resources is critical to sustained competitive advantage. However, simply possessing knowledge based resources will not by itself achieve competitive advantage - these resources must be managed in ways that allow the organization to leverage them for strategic advantage (DeNisi, Hitt and Jackson, 2003).

Knowledge management is the discipline that formalizes approaches to understanding and benefiting from knowledge assets at the firm level. The intellectual antecedents of knowledge management include economics, sociology, philosophy and psychology (Prusak, 2001). Reflecting this, knowledge management is best thought of as a framework rather than as a single approach - a collection of elements that work together in varying combinations to accomplish the goal of leveraging an organization's knowledge capital (Saint-Onge and Wallace, 2003).

Knowledge management has been described as involving “the design, review and implementation of both social and technological processes to improve the application of knowledge, in the collective interest of stakeholders” (Standards Australia, 2003). Following from this, whilst information technology contributes to effective knowledge management, it alone does not fulfill the promises of knowledge management. Attention to four elements - People, Process, Technology and Content - is essential to optimize results from knowledge (Standard Australia, 2003). The nature and characteristics of work in the knowledge economy herald new opportunities for HRM. To examine benefit from knowledge assets, a fourfold contribution from HRM is proposed. In the knowledge economy, HRM must:

- Provide expertise in understanding and defining firm-level strategic knowledge capabilities;
- Develop and manage knowledge workers by leveraging the knowing-learning-doing nexus;
- Build knowledge value as an organizational as well as an individual asset; and
- Minimize the organization’s knowledge risk (Andrews, 2003) associated with loss of requisite capability and knowledge.

The characteristics of knowledge work throw the spotlight on HRM and its management of the knowledge workforce. The autonomy of knowledge workers, their interdependencies with others, and the long feedback cycles typical of their work pose clear challenges for traditional approaches to performance management. Traditional performance management focuses on narrowly-defined tasks or job roles and observable outputs rather than a long term and diffused contributions. In today's economy, performance management must be re-conceptualized with knowledge work in mind. The process by which people obtain results becomes much less significant and the focus shifts to managing outcomes, many of which are long term and difficult to attribute to individuals. For HRM professionals, the key switch is from one of performance management to performance support or performance facilitation.

In addition, HRM must tap into the intrinsic motivations of knowledge workers. Knowledge workers are self-motivated, curious and passionate about learning, and have a strong desire for exposure to new ideas and perspectives from both inside and outside their primary knowledge discipline. HRM has a key role to play in creating rich work opportunities. A specific example relevant here is provided by Sveiby and Simons (2002) who noted that after 15 years working in
the same field for the same company, professionals experience anger, frustration and burnout. The ‘career plateau’ (Sveiby, 2002) transcends professions and creative workers are thought to be particularly vulnerable. Obviating or minimizing the impact of professional burnout is a worthwhile area of focus for HRM.

It is noteworthy that whilst technical discipline based knowledge has traditionally defined professional work, additional ‘generic’ capabilities (abilities to adapt, learn, collaborate and share knowledge) are essential attributes of knowledge work. For knowledge workers, learning and work are intimately connected. Current approaches to training and development as ‘on top-of’, or supplementing an employee’s work are challenged. Learning and professional development is relevant to knowledge workers to the extent that it is intimately connected with the context of their ongoing work. Further, knowledge workers’ self-motivation to learn suggests that the control over the diagnosis and design of professional development activities are best given to the knowledge workers themselves. Learning and development that is ‘just-in-time’ to support the current context of the knowledge work will be more common. HRM professionals have a key role to play in supporting the ongoing development of knowledge workers, but many of the current ways in which that support are provided may have to be revised.

4.0 Research Purpose

Due to the fact that little clarity exists in current literature, this research aims to clarify the role of knowledge management as well as human resource management in the innovation process. Human capital and, in particular, human resource management, are today considered as key elements of successful innovation, since the human element is involved in the whole innovation process (Galbraith, 1984). In addition to that, according to Hassan and Al Hawari (2003), innovation is considered to be an important part of the organizational performance and every company’s innovative capacity depends highly on its ability to take advantage of its knowledge asset.
As it can be seen from the above figure and based on existing literature in these areas, managing human capital as well as knowledge and innovation is an interactive and dynamic process which leads to organizational performance.

5.0 Research Questions

Based on literature review and the purpose of the research, this research sets out to investigate to answer the following research questions:

- What is the role that Human Resource Management plays in managing knowledge as well as innovation?
- What is the role of Knowledge Management in successful innovation processes in organizations?

6.0 Research Methods

Despite the importance of the issue, very little research has been done in Bangladesh. The review of literature established the need to investigate these issues in the context of Bangladesh. The purpose of this section is to outline the research process. It is organized as follows: the theoretical framework of the study is outlined. The subsequent subsections provide an outline to the development of the questionnaire, a discussion of the features of the questionnaire; the selection of samples, and finally the issues of processing of the data from the questionnaire are discussed.

6.1 Research Design and Procedure

6.1.1 The Questionnaire: Development and Administration

Question survey technique was used to solicit the data. Based on the literature reviewed in section 3, a survey questionnaire is developed for the managerial-level employees of Bangladeshi companies located in Dhaka. Expert advices are solicited before finalization of the questionnaire which is then administered in the sample companies.

The study is conducted by using two stages: questionnaires and interviews. The questionnaire comprised five different sections. The first section contains 34 statements measuring the five KM activities:

1. Knowledge acquisition;
2. Knowledge documentation;
3. Knowledge transfer;
4. Knowledge creation; and
5. Knowledge application.

These statements are formulated by Filius et al. (2000). A semi-structured questionnaire is developed. The questions mostly deal with managing human resources and the impact of knowledge worker issues. A face to face interview is carried out for approximately 20 to 30 minutes. The interview schedule is semi-structured. However, when the respondent identified
issues relevant to the research, the researcher investigated these issues and also asked the same question to the next respondent. When any respondent faced difficulty in understanding a particular item or point, it has been clarified by the researcher at the time of interview. The concept of knowledge economy is not very old in Bangladesh and there is a lack of empirical research in this field of study. The above mentioned methods of research are selected to obtain a detailed view of the extent of managing human resources toward achieving knowledge management.

6.2 Sampling

6.2.1 Selection of Areas

For the purpose of the present study manufacturing and processing, banking, finance, insurance, research, consultation, training, and IT-related, both public and private, situated in Dhaka, are selected.

6.2.2 Selection of Sample Institutions and Respondents

Out of a total population size of 216 (domestic companies), last reported in 2011, according to a World Bank report published in 2012. Listed domestic companies are the domestically incorporated companies listed on the country’s stock exchanges at the end of the year, a total of 20 companies (2 public and 18 private) are selected primarily as sample institutions. The managerial-level employees such as Chief Executive Officers, General Managers, and Managers are selected to fill in the questionnaire and for interviews. Selected Board of Directors of private companies is selected for interview.

6.3 Data Collection

Before visiting the institutions, appointment is made with at least one of the management personnel of each institution. The researcher himself attended the respondents, gave a brief explanation about the research topic and made the statements under each variable clear to them so that no ambiguity and/or confusion arise and thus ensured that the respondents filled in the questionnaire with confidence from their own perspective.

6.4 Processing of Data

Respondents were asked to indicate their extent of agreement using a five-point Likert scale (with 5 = completely agree, to 1 = completely disagree). The second section lists out 17 types of training, and asked the respondents to indicate the extent of these training types in their organization using a five-point Likert scale (where 5 = extensively covered, to 1 = weakly covered). The third section examines the extent of employees’ or subordinates’ participation in management decision making with regard to several issues (with 5 = extensively involved, to 1 = very seldom involved). The fourth section investigates the degree of matches between characteristics of performance appraisal system with the surveyed companies (with 5 = fully matched, to 1 = not matched at all); the list of characteristics is based on Scholtes (1993). In the fifth section, respondents are asked to indicate their degree of matches between their company compensation systems with nine dimensions of reward plans; the stipulated dimensions were
adopted from Hale and Bailey (1998). A total of 20 sets of usable questionnaires were successfully collected and analyzed. The companies were grouped in terms of paid-up capital: less than five million (53.9 percent), 5 to 20 million (19.4 percent), 21 to 50 million (7.2 percent), 51 to 100 million (4.4 percent) and greater than 100 million (15.0 percent). In terms of sector, they are: manufacturing and processing (30.8 percent), banking, finance, and insurance (12.2 percent), research, consultation, and training (8.0 percent), IT-related (9.8 percent), other services (27.6 percent) and others (11.6 percent). The questionnaire was edited after having been filled to ensure relevance and correctness of data. The questionnaire items are coded for feeding into the computer. The data is processed by using statistical techniques. The researcher himself tabulated the data. Before feeding the data into computer, all data is converted into numerical codes and details of this coding were recorded in separate sheets. In addition, data cleaning and consistency checking were also done.

The tabulated data are used for analysis of results. The recommendations are made based on processed data.

7.0 Data Analysis, Discussions and Findings

The responses of the four HRM areas were correlated with the overall KM practices and the five KM activities. The latter is calculated from their items’ average. For example, the responses of the six statements measuring knowledge documentation activities were averaged to obtain the scores for knowledge documentation. The scores for overall KM practices are calculated by averaging the scores of the five KM activities. The internal reliability of the items under each KM phase was assessed using the Cronbach’s alpha coefficient. This statistic measures the extent to which a set of variables is consistent in what it is intended to measure (Hair et al., 1998). Only those items that have Cronbach’s alpha value greater than 0.7 were considered as reliable and were retained for the calculation of average score for: knowledge acquisition, knowledge documentation, knowledge transfer, knowledge creation and knowledge application.

Training

Table – 1 documents the Pearson correlation between training and KM. Only those pairs with Pearson correlation greater or equal to 40 percent and statistically significant at 1 percent level of significance are considered as having a strong relationship. These rules are also applied on analysis of KM activities with decision making, performance appraisal and reward and compensation. From Table – 1, it appears that these trainings are closely associated with overall KM: creativity, customer relationship management, quality initiatives and empowerment.
### Table – 1: Correlation between training and knowledge management

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>Acquire</th>
<th>Document</th>
<th>Transfer</th>
<th>Creation</th>
<th>Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coaching skills</td>
<td>0.42</td>
<td>0.33</td>
<td>0.40</td>
<td>0.37</td>
<td>0.31</td>
<td>0.32</td>
</tr>
<tr>
<td>Company mission and values</td>
<td>0.46</td>
<td>0.33</td>
<td>0.41</td>
<td>0.41</td>
<td>0.37</td>
<td>0.35</td>
</tr>
<tr>
<td>Creativity/innovation</td>
<td>0.51</td>
<td>0.36</td>
<td>0.43</td>
<td>0.46</td>
<td>0.44</td>
<td>0.40</td>
</tr>
<tr>
<td>Customer relationship management</td>
<td>0.50</td>
<td>0.41</td>
<td>0.41</td>
<td>0.42</td>
<td>0.42</td>
<td>0.41</td>
</tr>
<tr>
<td>Documentation of procedures/processes</td>
<td>0.42</td>
<td>0.30</td>
<td>0.44</td>
<td>0.39</td>
<td>0.31</td>
<td>0.30</td>
</tr>
<tr>
<td>Industry/business knowledge</td>
<td>0.47</td>
<td>0.39</td>
<td>0.39</td>
<td>0.39</td>
<td>0.40</td>
<td>0.35</td>
</tr>
<tr>
<td>Information communication technology (ICT)</td>
<td>0.43</td>
<td>0.39</td>
<td>0.40</td>
<td>0.33</td>
<td>0.33</td>
<td>0.31</td>
</tr>
<tr>
<td>Interpersonal communication</td>
<td>0.40</td>
<td>0.32</td>
<td>0.38</td>
<td>0.36</td>
<td>0.31</td>
<td>0.30</td>
</tr>
<tr>
<td>Leadership</td>
<td>0.50</td>
<td>0.41</td>
<td>0.46</td>
<td>0.45</td>
<td>0.36</td>
<td>0.40</td>
</tr>
<tr>
<td>Managing change</td>
<td>0.49</td>
<td>0.41</td>
<td>0.45</td>
<td>0.41</td>
<td>0.36</td>
<td>0.40</td>
</tr>
<tr>
<td>Managing performance</td>
<td>0.52</td>
<td>0.40</td>
<td>0.46</td>
<td>0.47</td>
<td>0.42</td>
<td>0.39</td>
</tr>
<tr>
<td>Problem solving skills/techniques</td>
<td>0.51</td>
<td>0.40</td>
<td>0.47</td>
<td>0.44</td>
<td>0.42</td>
<td>0.38</td>
</tr>
<tr>
<td>Quality initiatives</td>
<td>0.57</td>
<td>0.42</td>
<td>0.49</td>
<td>0.52</td>
<td>0.48</td>
<td>0.43</td>
</tr>
<tr>
<td>Skills to build empowerment</td>
<td>0.49</td>
<td>0.38</td>
<td>0.41</td>
<td>0.41</td>
<td>0.42</td>
<td>0.40</td>
</tr>
<tr>
<td>Team concepts/working in groups</td>
<td>0.48</td>
<td>0.37</td>
<td>0.42</td>
<td>0.43</td>
<td>0.41</td>
<td>0.35</td>
</tr>
<tr>
<td>Skills to build teams</td>
<td>0.43</td>
<td>0.31</td>
<td>0.37</td>
<td>0.37</td>
<td>0.37</td>
<td>0.34</td>
</tr>
<tr>
<td>Stress management</td>
<td>0.44</td>
<td>0.38</td>
<td>0.37</td>
<td>0.37</td>
<td>0.34</td>
<td>0.34</td>
</tr>
</tbody>
</table>

**Notes:** The italic figures are Pearson correlation that is greater or equal to 40 percent, and statistically significant at 1 percent level of significance. Acquire = knowledge acquisition, Document = knowledge documentation, Transfer = knowledge transfer, Creation = knowledge creation, and Apply = knowledge application.

### Decision making

Table – 2 lists out a number of issues that may be discussed by management with employees or subordinates and their correlation with KM. Even though all of the Pearson correlations are significant at 1 percent level of significance, none of them are greater than or equal to 40 percent, except for correlation between working conditions and overall KM.
Table – 2: Correlation between decision making and knowledge management

<table>
<thead>
<tr>
<th>Issues discussed with employees</th>
<th>Overall</th>
<th>Acquire</th>
<th>Document</th>
<th>Transfer</th>
<th>Creation</th>
<th>Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work and task design</td>
<td>0.28</td>
<td>0.26</td>
<td>0.21</td>
<td>0.26</td>
<td>0.17</td>
<td>0.26</td>
</tr>
<tr>
<td>Working conditions</td>
<td>0.40</td>
<td>0.35</td>
<td>0.28</td>
<td>0.30</td>
<td>0.34</td>
<td>0.36</td>
</tr>
<tr>
<td>Routine personnel functions</td>
<td>0.32</td>
<td>0.26</td>
<td>0.30</td>
<td>0.26</td>
<td>0.22</td>
<td>0.27</td>
</tr>
<tr>
<td>Company strategy</td>
<td>0.37</td>
<td>0.27</td>
<td>0.28</td>
<td>0.38</td>
<td>0.29</td>
<td>0.29</td>
</tr>
<tr>
<td>Capital distribution and investment</td>
<td>0.35</td>
<td>0.29</td>
<td>0.29</td>
<td>0.34</td>
<td>0.21</td>
<td>0.30</td>
</tr>
</tbody>
</table>

Notes: The italic figures are Pearson correlation that is greater or equal to 40 percent, and statistically significant at 1 percent level of significance. Acquire = knowledge acquisition, Document = knowledge documentation, Transfer = knowledge transfer, Creation = knowledge creation, and Apply = knowledge application.

Performance appraisal

Table – 3 presents the investigated performance appraisal characteristics and their respective association with KM. It seems that the perceived driver of KM is feedback from internal customers. And that the feedback generated is then used for the purpose of promoting, or pushing greater KM practices, especially from knowledge transfer phase to knowledge application phase.

Table – 3: Correlation between performance appraisal and knowledge management

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Overall</th>
<th>Acquire</th>
<th>Document</th>
<th>Transfer</th>
<th>Creation</th>
<th>Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give direction to:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The workforce</td>
<td>0.35</td>
<td>0.26</td>
<td>0.35</td>
<td>0.32</td>
<td>0.23</td>
<td>0.28</td>
</tr>
<tr>
<td>The individual employees</td>
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<td>0.13</td>
<td>0.25</td>
<td>0.20</td>
<td>0.22</td>
<td>0.17</td>
</tr>
<tr>
<td>Controlling:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processes</td>
<td>0.32</td>
<td>0.23</td>
<td>0.34</td>
<td>0.22</td>
<td>0.26</td>
<td>0.28</td>
</tr>
<tr>
<td>People</td>
<td>0.13</td>
<td>0.06</td>
<td>0.16</td>
<td>0.07</td>
<td>0.14</td>
<td>0.13</td>
</tr>
<tr>
<td>Employees receiving:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>systems/processes</td>
<td>0.29</td>
<td>0.11</td>
<td>0.36</td>
<td>0.25</td>
<td>0.28</td>
<td>0.18</td>
</tr>
<tr>
<td>judgment on themselves</td>
<td>0.37</td>
<td>0.25</td>
<td>0.34</td>
<td>0.30</td>
<td>0.37</td>
<td>0.26</td>
</tr>
<tr>
<td>Feedback based on needs of:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>customers and the key process indicators</td>
<td>0.44</td>
<td>0.31</td>
<td>0.41</td>
<td>0.34</td>
<td>0.41</td>
<td>0.37</td>
</tr>
<tr>
<td>personal characteristics not relevant to work</td>
<td>0.32</td>
<td>0.23</td>
<td>0.28</td>
<td>0.25</td>
<td>0.30</td>
<td>0.28</td>
</tr>
<tr>
<td>Source of feedback:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>internal customers</td>
<td>0.44</td>
<td>0.29</td>
<td>0.42</td>
<td>0.35</td>
<td>0.40</td>
<td>0.37</td>
</tr>
<tr>
<td>the next layer up in the hierarchy</td>
<td>0.36</td>
<td>0.22</td>
<td>0.27</td>
<td>0.34</td>
<td>0.33</td>
<td>0.32</td>
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<td>Purpose of feedback:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for improvement</td>
<td>0.47</td>
<td>0.28</td>
<td>0.36</td>
<td>0.43</td>
<td>0.42</td>
<td>0.44</td>
</tr>
<tr>
<td>for ratings, rewards, and sanctions</td>
<td>0.49</td>
<td>0.33</td>
<td>0.40</td>
<td>0.43</td>
<td>0.45</td>
<td>0.44</td>
</tr>
</tbody>
</table>
Notes: The italic figures are Pearson correlation that is greater or equal to 40 percent, and statistically significant at 1 percent level of significance. Acquire = knowledge acquisition, Document = knowledge documentation, Transfer = knowledge transfer, Creation = knowledge creation, and Apply = knowledge application.

Compensation and reward

Table 4 documents the nine compensation dimensions and their degree of association with KM. The three compensation elements that are found to be correlated with KM are: clear and simple group incentives, knowledge sharing and contribution, and innovative work approach.

Table – 4: Correlation between compensation and knowledge management

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Overall</th>
<th>Acquire</th>
<th>Document</th>
<th>Transfer</th>
<th>Creation</th>
<th>Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay for performance on achievement of business goals</td>
<td>0.42</td>
<td>0.31</td>
<td>0.31</td>
<td>0.33</td>
<td>0.41</td>
<td>0.37</td>
</tr>
<tr>
<td>Link rewards to organizational change</td>
<td>0.46</td>
<td>0.30</td>
<td>0.36</td>
<td>0.42</td>
<td>0.44</td>
<td>0.37</td>
</tr>
<tr>
<td>Rewards for measurable competencies</td>
<td>0.39</td>
<td>0.24</td>
<td>0.30</td>
<td>0.33</td>
<td>0.39</td>
<td>0.36</td>
</tr>
<tr>
<td>Match incentives to culture</td>
<td>0.34</td>
<td>0.32</td>
<td>0.19</td>
<td>0.25</td>
<td>0.33</td>
<td>0.30</td>
</tr>
<tr>
<td>Keep group incentives clear and simple</td>
<td>0.50</td>
<td>0.38</td>
<td>0.41</td>
<td>0.42</td>
<td>0.45</td>
<td>0.40</td>
</tr>
<tr>
<td>Communicate clearly compensation system</td>
<td>0.35</td>
<td>0.18</td>
<td>0.26</td>
<td>0.34</td>
<td>0.38</td>
<td>0.26</td>
</tr>
<tr>
<td>Work or task itself provides the greatest incentive</td>
<td>0.44</td>
<td>0.32</td>
<td>0.36</td>
<td>0.38</td>
<td>0.40</td>
<td>0.37</td>
</tr>
<tr>
<td>The extent of knowledge contribution</td>
<td>0.52</td>
<td>0.36</td>
<td>0.46</td>
<td>0.43</td>
<td>0.48</td>
<td>0.44</td>
</tr>
<tr>
<td>Initiating new approaches and tactics in daily work</td>
<td>0.51</td>
<td>0.34</td>
<td>0.44</td>
<td>0.42</td>
<td>0.49</td>
<td>0.42</td>
</tr>
</tbody>
</table>

Notes: The italic figures are Pearson correlation that is greater or equal to 40 percent, and statistically significant at 1 percent level of significance. Acquire = knowledge acquisition, Document = knowledge documentation, Transfer = knowledge transfer, Creation = knowledge creation, and Apply = knowledge application.

7.1 Discussion

Before it can be managed, knowledge must first be created and applied in an organization. The knowledge creation process demands interaction and involvement of people, technology and information. Where the human element is present, any process, including knowledge management process, becomes uncertain and maybe difficult to handle. As such a prudent HRM is most required. From the results, it appears that if a company wants to become a knowledge organization, it must start with quality training. Keeping in mind that companies are now increasingly concerned with customer retention, it could only be reached by ensuring customer satisfaction towards the company’s products and services. Thus, establishing a quality culture
among the people is greatly needed. When the management and employees acquire the general understanding of quality concepts, it will initiate the organizational learning process, which leads to continuous improvement. Furthermore, having a company-specific quality concept and definition will generate a concerted and correctly focused improvement program. The knowledge generated during the learning process could then be re-used when similar problems occur. The link between managers’ understanding of a changed program, commitment and involvement is described in a paper by Savolainen (2000).

If the company has already achieved a quality standard, then knowledge creation could be achieved through promoting employee creativity and excellence. Creativity has been championed as the source of innovation in handling of daily tasks. From Table-1, it can be seen that training related to creativity (empowerment and team building) is significant in the facilitation of knowledge documentation, knowledge transfer, and knowledge creation. Empowerment is a driver of knowledge creation. By empowering people, it gives them a sense of power and authority, thus giving them more room to innovate and explore new possibilities. Empirical study reveals that managers who distrust their subordinates and do not delegate often leave the employees demoralized (McClelland, 1995). However, leaving individual employees more room to manoeuvre is not enough when creativity is concerned. Only when there is cross-pollination of ideas could new ideas be developed. Such practice has been held by BP Amoco, whereby managers from different business units sit together to discuss new development opportunities (Hansen and Oetinger, 2001). Thus, team building training is also urgently needed. The training, apart from providing skills and techniques of effective co-operation and collaboration, must also include “group emotional intelligence”. Following Druskat and Wolff (2001), emotional intelligence of a group produces trust, identification and efficacy between group members. And this in turn creates an atmosphere that is conducive towards a group’s efficiency and creativity. In this connection, they suggest several small things that could help build the norm of an emotional intelligence group. Another source of improvement ideas comes from the feedback of internal customers and external customers. Thus, with proper degree of flexibility and adequate group consensus, it is reasonable to expect a high level of knowledge transfer, creation and application.

It is certain that the changes mentioned above would require a rigid and inclusive organizational change. This in turn demands great leadership and skilful employees and managers. As such training on issues related to organizational change is vital to support the transformation process in a company and its people. Thus, these trainings are being carried out: leadership, managing change and company mission and values. All these skills are crucial in initiating the KM process, and thus promoting proactive acquisition of knowledge, and the subsequent knowledge documentation activity and knowledge transfer. No one would dispute the need of shaping people’s leadership skills and ability to cope and manage change, especially when companies want to embrace new organizational practices like KM. The leadership skills are essential to the middle level manager, as they are the one who leads the change in lower levels. They also need to maintain employees’ morale during the difficult change period. The leadership skills that need to be fostered may include communication skills, strategic thinking, collaboration skills, visionary leadership and business acumen (Lloyd, 1999). With regard to organizational change management, Ulrich (1998) suggests that the HRM can play its role by helping employees figure out what they
should and can do to make a company’s vision of knowledge organization a reality. In addition, pointing out the “who, why, what, and how” of the change process is certainly helpful to drive out the fear of change. The training on company mission and values would show the employees and managers how the entire KM framework is linked with the company’s strategy. As shown in Table 1, a clear understanding of the company’s mission and values would help ensure a right direction for the four KM activities (i.e. documentation, transfer, creation and application). It is noteworthy to point out that while many have embarked on the KM implementation, few are taking into account the linkage between KM’s direction and a company’s strategy (Davenport et al., 1998). In addition, the development of KM projects is all too often functional rather than a common enterprise-wide effort (Lang, 2001). Such outcome is normally caused by the company’s emphasis on short-term results.

Equipping the employees and managers with organizational change related skills and even combining them with imaginative minds and innovative ideas are not sufficient in forming a knowledge organization. The people must also be skilful in delivering their assigned responsibility and task. Thus, training related with skill-improvement such as systematic documentation skills, operating problem solving techniques and tools, ways of managing performance should be carried out. Table 1 has shown that problem solving skills and performance management are effective in supporting these three KM activities: documentation, transfer and creation. Raeside and Walker (2001) have strongly urged the adoption of statistical analysis in knowledge discovery and data mining among senior managers. The tools that should be included in problem solving training are seven basic quality control tools and management tools (i.e. affinity diagram, relation diagram, tree diagram, matrix diagram, prioritization matrices, process decision program chart and activity network diagram). All these tools are highly effective in collection and analysis of data, which then becomes the input for organizational learning process and create new knowledge. In terms of performance management, its training should also cover ways of assessing the level of KM practices. It is widely held that “what is measured is what gets done”. This saying is also applicable to KM. Only when employees realize how much they have achieved in KM practices, can they evaluate the effectiveness of their actions. According to Garvin (1993), there are three overlapping stages of organizational transformation in a learning organization:

1. Cognitive: changes in terms of employees;
2. Behavioral: changes in daily behavior and actions; and
3. Performance improvement.

To measure these stages, Garvin (1993) proposes the joint use of questionnaire survey, interview, direct observation and the “half-life” curve. Pfeffer and Sutton (1999) also stress on measurement of KM. They suggest that rather than focusing on measuring of knowledge stock, a company should instead measure knowledge implementation, or what they call the “knowing-doing” gap.

An organization that is going for KM must have settled many of the organizational problems that are related with people. The result of employee participation in decision making clearly indicates this (see Table 2). Most of the correlations fall below 40 percent, indicating the unimportance of these items to the KM organization. Thus, it is reasonable to speculate that since the KM
companies are already mature and stable, participation of employees in a company’s decision making process becomes not so significant in influencing KM implementation.

Theoretically, the main function of the performance appraisal system is to enable:

- Involvement and communication of all organizational units in target setting; and
- Collection, processing and delivering information on performance of organizational units, activities, processes and products or services (Neely, 1998).

The result here shows that it acts as a data collection system that gives information people need to translate it into knowledge and competitive edge. Hence, the appraisal system solicits and documents the internal feedback (i.e. employees) and external feedback (i.e. customers), which can later be used as the input of KM activities (see Table – 3). A similar exercise is being carried out by the Royal Mail, whereby best practice is documented to act as a base for internal transfer of knowledge (Zairi and Whymark, 2000). While few would doubt the importance of customers’ feedback, the feedback from internal customers is essential in directing the improvement of internal suppliers’ performance. Following Katz and Kahn (1978), organizations are structured by interactions of individuals and sub-systems. And these individuals or sub-systems would have their own expectations of their internal suppliers. Thus, by getting feedback from the internal customers, the internal supplier could close the expectation gap, leading towards greater organizational effectiveness. The performance appraisal system is also aimed to direct employees’ KM activities by rewarding the positive behaviors, such as creativity in daily operation, and IT usage. This is reflected in Table – 3, whereby feedback generated is used for the purpose of rewarding or punishing an employee. However, one must not forget the element of forgiveness in the performance appraisal system. Learning, according to Bennis and Nanus (1997), actually means trying to learn and improve from past failures. Also a company should not receive any reasonable failure with anger. Pfeffer and Sutton (1999) extend this concept to KM by arguing that “knowing comes from doing” and that to encourage a culture of action, a company should support and forgive reasonable failures. It is noteworthy to point out that the directing and controlling function of the performance appraisal systems are not significantly correlated with the KM activities. Perhaps as companies are in the process of transforming into a knowledge organization, their people are already well trained and properly guided. Thus, heavy controlling and directing from the management are no longer greatly needed. Consequently, more emphasis is put on organizational improvement, which is why the feedback is solicited for directing employees in improving organizational performance.

To transform into a knowledge organization, the company must establish a different form of compensation system. The pay and incentive system should:

- Reward risk taking attitude in order to promote creativity in solving daily problems; and
- Stress on group-based compensation and reward to stimulate knowledge exchange and sharing within group members.

If the pay system is based on internal competition, such as raises given out in zero-sum fashion and individual rewards, it creates a counter-collaborative organizational culture, whereby people
always need to watch their backs to see who is doing them in (Pfeffer and Sutton, 1999). This certainly makes knowledge sharing impossible to reach. Maybe because of this, the result (in Table – 4) has indicated that companies are giving out their rewards to the employees based on:

- Individual’s contribution towards group’s performance;
- Knowledge sharing; and
- Innovative work approach.

In creating a pay structure that takes into account both individual and group performance, the company can consider the approach taken by a consulting firm. The firm’s approach is having a reward system that is based on divisional revenue targets and personal revenue targets (see Robertson and Hammersley, 2000 for this case study). The divisional revenue target is the accumulation of personal revenue targets and all consultants have similar monthly personal revenue target to fulfill. Each consultant would have to decide, together with a project leader, how far they want to contribute to a particular project’s value or revenue. This system sends out a clear message that if a consultant is to be rewarded handsomely, they must possess sufficient knowledge base (through continuous self-learning) to prove viable to a particular project. They also need to communicate their knowledge to project members, thus creating better group performance and yield greater consulting fees in the long term. BP Amoco adopts a similar yet different approach. When the manager of a business unit is to be promoted, they are judged on a “dual promotion” system. It is a reward and incentive scheme that considers both the unit’s performance and the extent of transfer of expertise from the manager’s business unit to other units (Hansen and Oetinger, 2001).

7.2 Conclusions

The good thing about KM is that a company can compete better and that the knowledge itself can be retained in the system through the five KM activities, even if the knowledgeable worker has left the company. This research indicates that the knowledge organization requires a different management approach compared to the non-knowledge organization. In terms of human resource training, the focus is placed on developing people who are capable of tapping internal and external information and turning it into useful organizational knowledge. The training has focused on:

- Leadership skills and change management;
- Creativity;
- Problem solving skills; and
- Quality initiatives.

Two main instruments that are used to support transformation in an employee’s behavior and mindset are:

1. Performance appraisal system; and
2. Compensation and reward system.
The performance appraisal apart from providing the input to KM activities, also aims at bringing organizational improvement through effective directing of the employee’s behavior. The compensation and reward system focuses on promoting knowledge exchange and group collaboration. This paper also shows that the HRM practices of companies that are moving towards knowledge organization are different from those companies that are still on the learning curve. Less directing and controlling is needed for the knowledge-oriented companies and the process and procedures are already well established. While this paper has looked into the several aspects of HRM, there are two questions that deserve further examination. First, do employees really experience several stages of transformation in becoming a KM-oriented person? Garvin (1993) has suggested that the transformation into a learning organization involved three overlapping stages. Assuming the answer is yes, then what type of reward system and performance appraisal system should be adopted in order to support the various stages of transformation? Second, how far is the element of forgiveness being incorporated into the reward system and appraisal system? And if the company does adopt the policy of forgiving reasonable failures in an employee’s actions, what do they have in mind about “reasonable failure”? Is there any formal policy or quantification method for failure assessment?

Beside the driving force in the introduction of the new management thinking and the new organizational framework for the new organization, the new HRM will need to drive the management of the whole organization (the tangible, the intangible, and the virtual part), the knowledge management, and the organizational culture necessary for the sustainable success for the company. Knowledge management, from the HRM perspective, is more than just the management of information systems, more than just the management of the interface between people and those systems. Effective knowledge management facilitates the acquisition of knowledge by individuals. It encourages them to apply their knowledge for the benefit of the organization so that competitive advantage and service excellence are achieved.

References


