Human Resources Management in the Knowledge Management

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Knowledge is increasingly claimed to be a key critical resource and source of competitive advantage in the modern global economy, especially with the rise of the service economy, the growth in the number of 'knowledge workers', the increasingly rapid flow of global information, and the growing recognition of the importance of intellectual capital and intellectual property rights. Knowledge, with its intangible aspects, is becoming a defining characteristic of economic activities, as opposed to tangibles such as goods, services or production processes. 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 organizations and rapid change. This in turn requires drastic change within HRM to respond to changing demands of the knowledge economy.
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1 Human Resources Management (HRM) and the links to Knowledge Management (KM)

In an era where competitive advantage is perceived to be linked to knowledge, considerable interest in knowledge management continues to be the trend. Given the broad scope and interdisciplinary nature of KM, this interest spans traditional functional and professional boundaries ranging from IT professionals, to accountants, marketers, organizational development and change management professionals. A notable common feature of this widely divergent activity is an emphasis upon knowledge work, knowledge workers and the nature of knowledge within organizations.

While it can be argued that there is a reasonable consensus on the nature and scope of HRM, its components and principles, this is not the case where KM is concerned. Accordingly, before one can undertake an analysis of the relationship between the two areas, it is necessary to state as clearly as possible what is understood by KM. Much of the literature of KM continues to reflect a technocentric focus, similar to that of information management, which in essence regards knowledge as an entity that can be captured, manipulated and leveraged. This is a limited and ultimately hazardous perception. Critical to any realistic understanding of knowledge and its incorporation into the management of organizations, is awareness of a range of views on the concept, which includes perceptions of knowledge as an entity (akin to information), as a resource, as a capacity and as a process. For present purposes, it is important that knowledge is viewed as a social creation emerging at the interface between people and information and especially within communities engaged in communication, knowledge creation, and knowledge sharing and learning. From an operational perspective, KM can be described as the systematic processes by which an organization identifies, creates, captures, acquires, shares and leverages knowledge.

In terms of the HRM function, the rise of the so-called knowledge economy has had a major impact, with a considerable shift from HRM as a bureaucratic 'personnel management' operation to the development of discrete HRM functions over the past few decades. This has been accompanied by the integration of these functions to support competitive advantage and a more strategic thrust. Having said this, a considerable number of experts in the area warn that HRM faces extinction if it does not respond to changes brought about by the shift from a traditional to a knowledge based economy (Stewart, 1997; Ulrich, 1997, 1999; Saint-Onge, 2001; Lengnick-Hall & Lengnick-Hall, 2003). Un-

able to add value under these conditions, the HRM function is perceived to be under extreme threat (Stewart, 1997; Stone, 2002). It has been suggested that one way for HRM to reinvent itself is through its contribution to effective linkages between human capital management and knowledge management within organizations (Saint-Onge, 2001; Chatzkel, 2002; Gloet, 2004).

The rapid growth of technology has led to an economy where competitive advantage is increasingly based on the successful application of knowledge (Lengnick-Hall &Lengnick-Hall, 2003). Traditional HRM functioned under narrow operational boundaries; in the knowledge economy the role of HRM needs to expand, looking both within and outside the organization. The traditional focus on managing people has been broadened to managing organizational capabilities, managing relationships and managing learning and knowledge (Ulrich, 1997; Saint-Onge, 2001; Coates, 2001; Lengnick-Hall & Lengnick-Hall, 2003). The emphasis on discrete HRM practices is also broadening to a focus on developing themes and creating environments conducive to learning, as well as to the acquisition, sharing and dissemination of knowledge within organizations. A revitalization of the HRM function to respond to the demands of the knowledge economy and to develop linkages with KM requires major changes across four key areas: Roles, Responsibilities, Strategic Focus and Learning Focus.

2. The role of HRM in the KM

As the discipline, knowledge management promotes an integrated approach to identifying, capturing, retrieving, sharing, and evaluating an enterprise's information assets. These information assets may include databases, documents, policies, and procedures as well as tacit expertise and experience resident in individual workers. The resource-based view of the firm suggests that organisations will need to be able combine distinctive, sustainable and superior assets, including sources of knowledge and information, with complementary competencies in leadership and human resource management and development to fully realize the value of their knowledge. Issues for HRM include how organizations should be structured to promote knowledge creation and mobilization, and how to develop a culture and set of HRM policies and practices that harness knowledge and leverage it to meet strategic objectives.

There are several roles that can be played by HR in developing knowledge management system. Lengnick-Hall & Lengnick-Hall (2003) take the view that in the knowledge economy, organizations will need HRM that is characterized by a new set of roles that can assist in generating and sustaining organizational capabilities. These new HRM roles are those of human capital steward, knowledge facilitator, relationship builder, and rapid deployment specialist. KM has the capacity to significantly broaden the role of the HRM professional:

HRM helps the organization to articulate the purpose of the knowledge management system. Investing in a knowledge management initiative without a clear sense of purpose is like investing in an expensive camera that has far more capabilities than you need to take good pictures of family and friends. Too often, organizations embrace technologies to solve problems before they've even identified the problems they are trying to solve. Then, once they realize the error, they find it difficult to abandon the original solution and difficult to gather the resources needed to invest in a solution to the real problem. Effectively framing the knowledge management issue, before deciding on a course of action, is a crucial prerequisite for success.

HRM is a knowledge facilitator. HRM must ensure alignment among an organization's mission, statement of ethics, and policies: These should all be directed toward creating an environment of sharing and using knowledge with full understanding of the competitive consequences. Furthermore, HRM must nourish a culture that embraces getting the right information to the right people at the right time.

HRM is an experience creator. HRM

should also create the "ultimate employee experience." That is, by transforming tacit knowledge into explicit knowledge through education, organizations must build employee skills, competencies, and careers, creating "bench strength." This combines the traditional training and development responsibilities of HRM with the new responsibilities of human capital steward: using all of the organization's resources to create strategic capability. Organization's new staff orientation, which emphasizes the firm's mission, values, and history, is an example of this process of making tacit knowledge more visible.

HRM is a knowledge sharing. HRM must integrate effective knowledge sharing and usage into daily life. That is, knowledge sharing must be expected, recognized, and rewarded. For many individuals and organizations, this reverses the conventional relationship between knowledge and power. Often, the common pattern was to hoard knowledge because it made the individual more valuable and more difficult to replace. Effective knowledge management requires this trend to be overturned and requires those with information to become teachers and mentors who ensure that others in the firm know what they know. Teaching must become part of everyone's job. Clearly, for such a cultural shift to take place, HRM must overhaul selection, appraisal, and compensation practices. Human resource management has the capabilities for creating, measuring, and reinforcing a knowledge-sharing expectation.

HRM must champion the low-tech solutions to knowledge management. Although it should not ignore the high-tech knowledge management tools, HRM contains the expertise to develop low-tech knowledge management strategies. The knowledge facilitator role cannot be easily slotted into traditional HRM functions, such as training and development or compensation. The knowledge facilitator role is much broader and requires creative integration across traditional HRM activities. It entails both rethinking old ways of managing the workplace as well as using innovative approaches outside the box of traditional HRM. Most important, becoming an effective knowledge facilitator requires conceptualizing HRM as a vehicle for creating capabilities and capitalizing on the human factor to create a community of knowledge workers.

3. The growing importance of KM and its implications for HRM

Implications of KM for HR Development. As KM involves recognizing, documenting and distributing knowledge to improve organizational performance, it is of particular significance to HRD in training needs analysis and the planning of training to improve performance and deliver strategic results. KM challenges HR over intellectual property, professional identity and unit boundaries; KM perspectives move HRD's goal away from developing individual capacity to creating, nurturing and renewing organizational resources and interactions. Instead of devising training courses, HRD practitioners may need to identify organized elements that learners can reference as needed, depending on the particular challenges faced.

Implication of KM for HRM sustainability. In today's economy, where so much importance is attributed to the search for sustainable resources and institutions, knowledge-based theory underpins much of the strategic thinking in organizations. In the knowledge-based view, this organizational knowledge is acknowledged as the most valuable organizational asset and the ability to manage knowledge strategically as the most significant source of competitive advantage (Barnes, 2002). Knowledge is both the key resource and a basis for sustainability, but knowledge and associated knowledge management practices must also be sustainable. In the wider search for sustainability, issues of context, of culture and appropriateness are of paramount importance. In the realm of context, the focus should be on community as well as on process. In this way, knowledge management can enhance the potential for knowledgeable practices that are "envisioned, pursued and disseminated, with other actors encountering these new practices and

learning from them to develop their own local knowledge" (Cushman et al, 2002).

Implications of KM for the role of HRM in promoting Innovation and Creativity. Knowledge itself is not of any value to an organization unless these contextual aspects are clearly understood. Much of the knowledge, both tacit and explicit remains largely untapped in most organizations; without a thorough understanding of context, it will not be possible for HRM or KM to support the development of management and leadership capabilities to support innovation and creativity. Much work in HRM has focused on identifying facilitators and inhibitors of innovation, such as people (e.g. effective leadership behaviors associated with particular innovation phases), structure (e.g. the impact of centralization, formalization, complexity, stratification, lateral communications, matrix structures, requisite variety, double-loop learning) and organizational size or resource availability. Other approaches have found that strategic type, organizational climate and culture, and organizational environment are also important facilitators or inhibitors of innovation. For example, Taylor et al (2000) using a large-scale survey have shown that the significance of inter-firm networking for innovation differs markedly between industry sectors, and that high innovating organizations often seek long-term, secure relationships with employees. Organizations also seem to adopt very different strategies towards staff directly involved in innovation as compared with staff in general, with less use of flexible employment policies for this group. An alternative is to see innovation as more dynamic and fluid, allowing for groups, individuals and collaborative partners to differ in their perceptions and interpretations of events.

4. Knowledge creation, learning and renewal

In developing a general framework for understanding KM, we refer to perhaps the most influential framework for knowledge creation developed by Nonaka and Takeuchi (1995) in their studies of knowledge creation and use in Japanese companies. Nonaka and Takeuchi (1995, p.8) distinguish between two types of knowledge, explicit and tacit (Figure 1). Tacit knowledge is basically experiential, whilst explicit knowledge is expressed, and often seen as transferable in one way or another; it includes cognitive and technical elements. Cognitive elements operate through mental models, working worldviews that develop through the creation and manipulation of mental analogies. Mental models (like schemata, paradigms, perspectives, beliefs and viewpoints), according to Nonaka and Takeuchi, help individuals perceive and define their world. The technical element of tacit knowledge includes concrete know-how, crafts, and skills. Explicit knowledge is about past events or objects "there and then", and is seen to be created sequentially by "digital" activity that is theory progressive. An alternative perspective on the distinction between explicit and tacit knowledge, to be developed later in this paper, is also presented in Table 1. One difference is that the top row appears to be positivist in its orientation through its adherence to objectivity, whilst the bottom row is critical in nature.

Nonaka and Takeuchi (1995, p.8) offer a SECI model of knowledge creation illustrated in figure 1. At its core are conversion processes between tacit and explicit knowledge that result in a cycle of knowledge creation. Conversion involves four processes: socialization, externalization, combination, and internalization, all of which convert between tacit and/or explicit knowledge. Socialization is the process by which synthesized knowledge is created through the sharing of experiences between people as they develop shared mental models and technical skills. Since it is fundamentally experiential, it connects people through their tacit knowledges. Externalisation comes next, as tacit knowledge is made explicit. Here, the creation of conceptual knowledge occurs through knowledge articulation in a communication process that uses language in dialogue and collective reflection. The use of expressions of communication is often inadequate, incon-

sistent, or insufficient. They leave gaps between images and expression, while promoting reflection and interaction. This therefore triggers dialogue. The next process is combination, where explicit knowledge is transformed through its integration by adding, combining and categorizing knowledge. This integration of knowledge is also seen as a systemizing process. Finally, in the next process explicit knowledge is made tacit by its internalization. This is a learning process, which occurs through the behavioral development of operational knowledge. It uses explicit knowledge, like manuals or story telling, where appropriate.

Table 1. Typology of knowledge (Nonaka and Takeuchi, 1995)

Expression of knowledge type	**Explicit Knowledge**	**Tacit Knowledge**
Nonaka and Takeuchi	Objective Rationality (mind) Sequential (there and then) Drawn from theory (digital) Codified, formalty transmittable in systematic language. Relates to past	Subjective Experiential (body) Simultaneous (here and now) Practice retated (analogue) Personal, context specific, hard to formalise and communicate. Cognitive (mental models), technical (concrete know-how), vision of the future, mobilisation process
Alternative	Formal and transferable, deriving in part from context related information established into definable patterns. The context is therefore part of the patterns.	Informal, determined through contextual experience. It will be unique to the viewer having the experience. Not transferable, except through recreating the experiences that engendered the knowledge for others, and then the knowledge gained will be different.

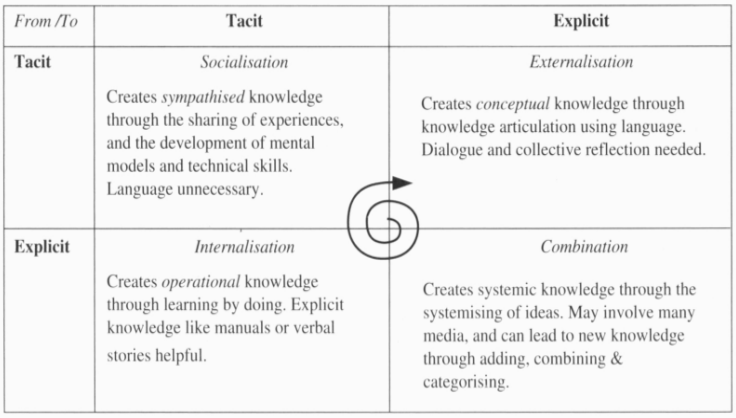

Fig.1. The SECI cycle of knowledge creation (Nonaka and Takeuchi, 1995)

5. Implication of Knowledge Creation and Migration for HRM - the Iles & Altman model

The process of knowledge appreciation may follow knowledge migration. An appreciation of how migrated knowledge can be of use to relevant others is essential if they are to be able to harness it within a behavioral world. Knowledge appreciation by relevant others is dependent upon knowledge contagion to these others. In addition, the evaluation reference criteria derive from knowledge about intention and logic-relational cognitive purposes. Interestingly, this connects with Marshall's (1995) idea of planning knowledge – the knowledge of which pathways to select in order to achieve a solution.

There are parallels between the Iles, P., Yolles, M. & Altman, Y (2001) knowledge cycle and that of Nonaka and Takeuchi (1995). In the Iles & Altman model, knowledge can be created spontaneously within a migration process, and any socialization process that occurs is through communication that maybe seen to act as a trigger for new knowledge. Unlike Nonaka and Takeu-

chi, the cycle is not required to be monotonic and continuous, relative to a conditioning process. Rather, the process of continuity is transferred to the communication process, and knowledge creation is cybernetic, passing through feedback processes that can change the very nature of the patterns of meanings that were initiated through semantic communications.

Central to this analysis of knowledge creation and a proposed research agenda is the knowledge typology shown in figure 3.

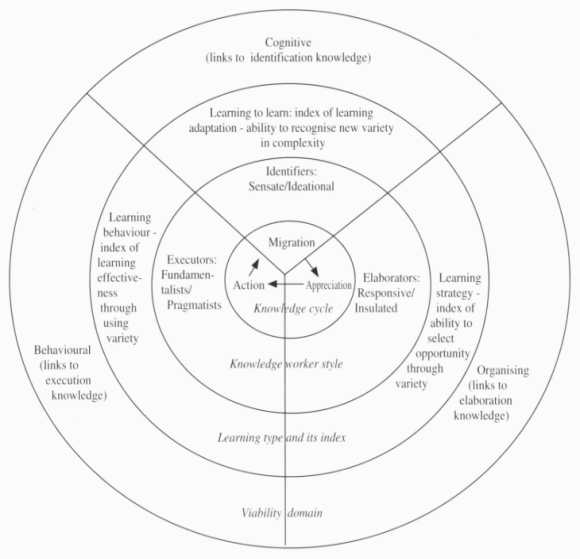

Fig.3. Iles & Altman typology indicating possible knowledge profiles of individuals (knowledge personalities) or coherent groups (Iles, P., Yolles, M. & Altman, Y (2001)

The typology depicted in figure 3 derives from the knowledge creation cycle, defined in terms of the processes of knowledge migration, knowledge appreciation, and knowledgeable action. Knowledge migration occurs through the development of interconnections between the worldviews of the actors in a given suprasystem, and is the result of semantic communication (Habermas, 1987). As part of the process of knowledge migration, new knowledge is locally generated within the worldview of an actor.

It is also necessary to recognize the unique attributes and value of knowledge work and knowledge workers, demanding new types of training and development in knowledge creation and transformation, competency building, and technology training. Associated with each phase of knowledge creation are, it is proposed, different types of knowledge workers. Thus, those who are particularly good at migrating knowledge are seen as knowledge identifiers which (after Marshall) we shall call identifiers, elaborators and executors. We can classify two cultural classes of identifiers, sensate and ideational, following Sorokin (Yolles, 1999, 2000). Sensate culture is to do with the senses, and can be seen to be utilitarian and materialistic. Ideational culture relates to ideas; an example might be adherence to spirituality or ideology. The appreciation phase of knowledge creation has associated with it those who might be called elaborators. It is possible to classify two polar types of elaborators, those who are responsive to new knowledge, and those who are not. Finally, closely associated with the phase of knowledgeable action are executors. Two types of executors are proposed. Fundamentalists adhere to notions very strictly, whilst pragmatists provide for some degree of leeway in the way that adheres to notions. It is not necessary to be either fundamentalist or pragmatist. There may be phases in between them, in the same way, for example, as there maybe between insulated and responsive elaborators, or sensate and ideational identifiers. Thus for instance, an identifier may be able to mix sensate and ideational perspectives, in a condition referred to as idealistic. These notions have the potential for developing a set of measures that can develop a profile for knowledge personality/sociality and place individuals in coherent groups.

Clearly, these tentative propositions need testing through further empirical research. Differentiation is likely to evolve as KM becomes institutionalized inside and outside organizations. With such differentiation of types, aptitudes and skills, HR will not surprisingly find a fertile ground to apply its well grounded ‘traditional’ expertise in selection, assessment, performance management, training for skill enhancement and reward schemes.

Conclusions

This paper has argued that the increasing importance of knowledge, and knowledge management, (KM), to organizations challenges the nature, role and boundaries of HRM in significant ways, not always as yet recognised by HRM theorists, researchers and practitioners. In addition to discussing the challenges posed to HRM in general, this paper has discussed ways in which specific functional areas of HRM (employee resourcing, career management, HRD) can respond to these challenges, as well as discussing the implications of KM for HRM in SMEs and the role of HRM in facilitating innovation and creativity. In terms of knowledge migration, HR may play a major enabling role in helping identify the potential of knowledge migrants through assessment and selection; by helping facilitate knowledge migration through appropriate communication, reward and recognition schemes; and by enhancing knowledge migrations' likelihood of success and retention through training and development, as well as by developing organizational processes that facilitate knowledge migration, knowledge appreciation, and knowledgeable action.

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