

Enhancement in Higher Education with Knowledge Management

B.R.Senthil kumar¹, Dr.M.Thiagarajan², Dr.P.Maniiarasan¹, J. Prasanth¹, G.Abilesh¹,
D.Srinivasan¹

¹Nehru institute of Engineering and Technology, Coimbatore (INDIA)

²Sri Ranganathar institute of Engineering and Technology, Coimbatore (INDIA)

Abstract-In developing countries, higher education, and particularly university education is recognized as a key force for modernization and development. This has caused an increase in the demand for its access, accompanied by a number of challenges. Today, more than ever before in human history, the wealth or poverty of nations depends greatly on the quality of higher education. The knowledge, skills, and resourcefulness of people are increasingly critical to the world economy. Being the powerhouse of knowledge in our society, universities and other higher educational institutions have immense knowledge dissemination. There are hidden, untapped reservoirs of intelligence that exist in almost every organization. There is a difference in ranking in two universities with identical numbers of faculty, degree programs, expenditures, and enrolment as those surveys conducted by U.S. News and World Report. Milam (2001) suggests that the difference is often intangible value that is added by effective Knowledge Management. Two important aspects of KM in Institution of Higher education is to: i) acquire new knowledge and ii) disseminate knowledge. Most developed countries have seen a substantial rise in the proportion of their young people receiving higher education. Lifelong learning is also being used to help workers adjust to rapidly changing economies. After all, education is associated with better skills, higher productivity, and enhanced human capacity to improve the quality of life. Hence, more balanced approach to education at all levels is needed. As *Knowledge for Development*, the 1998–99 *World Development Report* puts it: “Knowledge is like light. Weightless and intangible, it can easily travel throughout the world, enlightening the lives of people everywhere.” Higher education has never been as important to the future of the developing world as it is right now. It cannot guarantee rapid economic development—but sustained progress is impossible without it.

Index Terms- Decentralized Management Structure , Explicit Knowledge , Higher Education, Knowledge Access, Knowledge Management, Knowledge Repositories, Tacit knowledge

I. INTRODUCTION

Knowledge Management is generally about the gathering, storing, disseminating and application of knowledge via the know-how and creation of work by the individuals in an

organization (Miller, 1999). Bernbom (2001) explains that KM involves the “discovery and capture of knowledge, the filtering and arrangement of this knowledge, and the value derived from sharing and using this knowledge throughout the organization”. It is this “organized complexity” of collaborative work to share and use information across all aspects of an institution which marks the effective use of knowledge. Most business actions require the guidance of both explicit and tacit knowledge (Kidwell et al. 2000). These master craftsmen have years of experience and therefore also a wealth of expertise. Nevertheless, they often have difficulty in articulating the technical and scientific principles behind what they know.

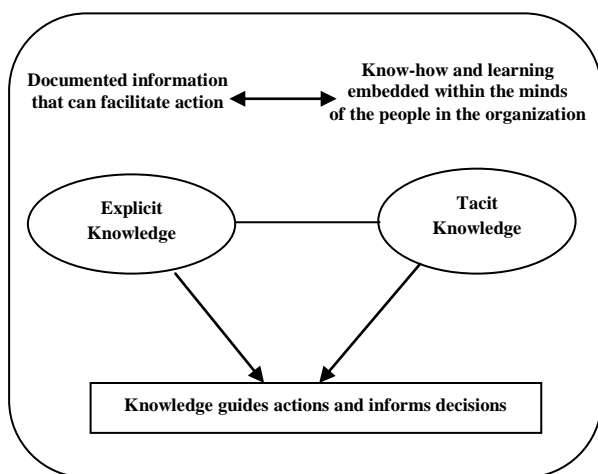
A common way to discuss knowledge is by dividing it into two dimensions, explicit knowledge and tacit knowledge.

Explicit knowledge can be expressed in words and numbers and is shared in the form of data, manuals, copyright and patents (Nonaka 1991; Smith 2001). Furthermore, explicit knowledge is carefully codified, stored in a hierarchy of databases and is accessed with high quality and fast information systems. The advantage of this type of knowledge is that it is easily accessible for other people, and can therefore be reused to solve similar problems (Smith 2001). Explicit Knowledge is documented information that can facilitate action. It is easily codified, communicable and transferable. It can be expressed in formal, shared language (Kidwell et al. 2000). Examples include formulas, equations, rules, and best practices.

Tacit knowledge is know-how and learning embedded within the minds of the people in an organization. It involves perceptions, insights, experiences, and craftsmanship. Humans are not always able to express all tacit knowledge and as opposed to explicit knowledge it becomes difficult to share it. Therefore, tacit knowledge is often seen as the iceberg below the surface of the water, i.e. unseen and embedded in our social identity and practice (Spender 1996). Tacit knowledge is deeply

rooted in actions and experiences as well as in the ideals, values or emotions that an individual embraces (Nonaka and Nishigushi 2001). Therefore it is hard to formalize it and, difficult to communicate or share it with others. Due to this difficulty in formalizing tacit knowledge, it is often transmitted through face-to-face contact. Furthermore, tacit knowledge is technical or cognitive and is made up of mental models, values, intuitions, insights and assumptions. Technical tacit knowledge is Demonstrated when people master a specific knowledge like the one gradually developed by master Craftsmen (Smith 2001). Tacit knowledge is personal, context-specific, difficult to formalize, difficult to Communicate and more difficult to transfer.

FIGURE 1
Tacit and Explicit Knowledge



II. CORE THEMES FOR KNOWLEDGE MANAGEMENT

A study by the Delphi Consulting Group Inc, which included 36 vendors and more than 650 evaluators and users of knowledge management solutions, revealed that 28 percent of companies were currently using some form of knowledge management, and a further 70 per cent anticipated using it within the next four years. On this basis, knowledge management applications can be expected to escalate in number over the next four years. Davenport et al. (1998) studied a number of knowledge management projects and offer some insight into the range and nature of the knowledge management projects that are currently being implemented. It is significant that their approach was project based rather than taking a broader organizational perspective. This approach was dictated by the absence of pervasive knowledge management implementations. Many organizations have sought to demonstrate that knowledge management can affect the bottom line by starting with quick fix solutions, rather than attempting to

embed knowledge management in a holistic manner throughout the organization. Dow Chemical started with a project that involved the systematization of information on the company's 30,000 patents. Davenport et al. (1998) were able to categorize these projects on the basis of the project's objectives. They identified four broad types of project objectives:

1. *To create knowledge repositories*, which store both knowledge and information, often in documentary form. A common feature is "added value" through categorization and pruning. Repositories can fall into three categories: Those which include external knowledge, such as competitive intelligence; those that include structured internal knowledge, such as research reports, and product oriented marketing material as techniques and methods; . those that embrace informal, internal or tacit knowledge, such as discussion databases which store "know how".

2. *To improve knowledge access*, or to provide access to knowledge or to facilitate its transfer amongst individuals; here the emphasis is on connectivity, access and transfer, and technologies such as video conferencing systems, document scanning and sharing tools and telecommunications networks are central. There may be an attempt to create a repository of such knowledge, or the emphasis may be rather on access to the individuals that hold or can provide the knowledge. Identified expert networks are often part of such projects. Success with improved knowledge access will not be achieved without addressing organizational norms and values and confrontation of the relationship between knowledge and power.

3. *To enhance the knowledge environment*, so that the environment is conducive to more effective knowledge creation, transfer and use. This involves tackling organizational norms and values as they relate to knowledge. A range of different initiatives might fall into this category. For example, one organization sought to increase awareness of the knowledge embedded in client relationships and engagements, which, if shared, could enhance organizational performance. Other organizations focus on knowledge-related employee behavior with, for example, contributions to the organization's structured knowledge base attracting significant rewards and bonuses. One organization has implemented decision audit programs in order to assess whether and how employees were applying knowledge in key decisions. Other organizations, such as Harris Corporation, have gone further and recognize that successful knowledge management is dependent upon structures and cultures. Harris has a

decentralized management structure and a culture that encourages individuals' creativity: walls of fame where photographs of workers who contribute to intellectual capital are displayed (Mullin, 1996). In international organizations, there is a real challenge associated with establishing an organizational culture that transcends national culture; possibly this can only be achieved by transferring employees' allegiance from their country to the organization.

4. *To manage knowledge as an asset*, and to recognize the value of knowledge to an organization. Assets, such as technologies that are sold under license or have potential value, customer databases and detailed parts catalogues' are typical of companies, intangible assets to which value can be assigned. Assessments of other knowledge can be made on the basis of knowledge that increases revenue and reduces costs. For example, Skyrme and Amidon (1998) propose that knowledge can be measured using the balanced scorecard devised by Kaplan and Norton (1992).

Using the balanced scorecard, an organization is valued on four dimensions, and not simply in terms of its financial performance. These four dimensions are: customer; internal process; innovation and learning; and financial. Metrics in the innovation and learning quadrant can often be improved by knowledge management activities. Although there is a continuing debate about the metrics that are appropriate in this quadrant, they have the potential to measure knowledge as an asset, and to support organizations as they seek to value their intellectual capital.

III. APPLYING KM IN HIGHER EDUCATION

Using knowledge management techniques and technologies in higher education is as vital as it is in the corporate sector. If done effectively, it can lead to better decision-making capabilities, reduced "product" development cycle time, improved academic and administrative services, and reduced costs. Consider the number of faculty and staff who possess institutional knowledge. For example, what institution does not have a faculty member who has led successful curriculum revision task forces? Or a departmental secretary who knows how to navigate the complex proposal development or procurement processes? Or a researcher who has informal connections to the National Science Foundation? Or a special assistant to the president who has uncovered (or generated) useful reports that individual deans or department chairs could use to develop their own strategic plans? Relying on the institutional knowledge of unique individuals can hamper the flexibility and responsiveness of any organization. The challenge is to convert the

information that currently resides in those individuals and make it widely and easily available to any faculty member, staff person, or other constituent.

An institution wide approach to knowledge management can lead to exponential improvements in sharing knowledge—both explicit and tacit—and the subsequent surge benefits. A key ingredient in an institution's readiness to embrace knowledge management is its culture—the beliefs, values, norms, and behaviors that are unique to an organization. Informally, it is the unwritten rules or "how things really get done." Higher education is moving from the old culture that considers, "What's in it for me?" to a new culture that says, "What's in it for our customer?" And it is developing a culture that is ready to embrace knowledge management. As institutions launch knowledge management initiatives, they can learn lessons from their counterparts in the corporate sector. Some key points to remember are:

- *Start with strategy.* Before doing anything else, determine what you want to accomplish with knowledge management.

- Organizational infrastructure—human resources, financial measurements of success, and information technology—should support knowledge management. *Think of technology as an enabler, and measure the impact of KM* in financial terms, such as cost reductions, customer satisfaction, and speed to market.

- *Seek a high-level champion for the initiative*—someone who believes in its benefits and who can advocate as needed.

- *Select a pilot project for knowledge management*—ideally one with high impact on the organization but of low risk to build credibility for knowledge management. If possible, make the pilot one that participants will enjoy and find rewarding.

- *Develop a detailed action plan for the pilot* that defines the process, the IT infrastructure, and the roles and incentives of the pilot project team.

- After the pilot, *assess the results and refine the action plan.*

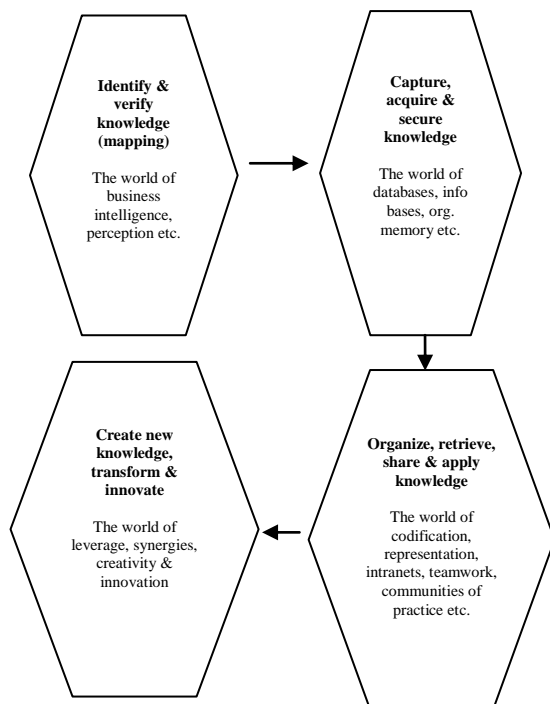
IV. KNOWLEDGE MANAGEMENT IN UNIVERSITIES & RESEARCH

Due to the appearance of new knowledge producers in the education sector, more and more universities are looking into the possibility of applying corporate knowledge management systems. Knowledge management can be defined

as the task of developing and exploiting an organization's tangible and intangible knowledge resources. Tangible assets include the outputs of R&D teams, strategic information about customers, suppliers, products, competitors etc. Intangible assets include the competencies and knowledge resources of human capital within the organization. KM refers to the totality of organizational strategies aimed at creating an intelligent organization, which is able to leverage upon its tangible and intangible assets, to learn from past experiences, whether successful or unsuccessful, and to create new knowledge. At the people level, KM centers on the competencies and learning abilities of individuals. At the organizational level, KM puts emphasis on the creation, utilization and development of an organization's collective intelligence. In terms of technology, effective KM requires an efficiently organized and relevant communication and information infrastructure (e.g. intranet).

Organizations progress from simple KM activities such as capturing existing knowledge to more sophisticated and complex ones such as the continuous creation of new knowledge. Core business driven knowledge processes of the KM event chain include (i) locating and capturing knowledge; (ii) sharing knowledge and (iii) creating new knowledge (Figure 2).

FIGURE 2
The KM Event Chain



V. BENEFITS OF KM

- ✓ Improved services for students.
- ✓ Improved service capability of faculty and staff.
- ✓ Improved services for alumni and other external constituents.
- ✓ Improved effectiveness and efficiency of advising efforts (to integrate fragmented efforts currently undertaken by faculty, academic support staff, student services staff, and student affairs staff.
- ✓ Quality research at the institution level will cultivate future scientists
- ✓ Increased competitiveness and responsiveness for research grants, contracts, and commercial opportunities
- ✓ Reduced turnaround time for research.
- ✓ Minimized devotion of research resources to administrative tasks.
- ✓ Facilitation of interdisciplinary research.
- ✓ Leveraging of previous research and proposal efforts
- ✓ Improved internal and external services and effectiveness.
- ✓ Reduced administrative costs.

VI. CONCLUSION

Higher education is in the knowledge business. Core activities are associated with knowledge creation and dissemination and learning. Implementing Knowledge Management practices wisely is a lesson that the smartest organizations in the institutions are learning all over again (Kidwell et al. 2000). Improving Curriculum development Process and enhancing research through KM technologies will help in cultivating Future Scientists. Knowledge management Institutions/ universities will be better able to increase student retention and graduation rates; retain a technology workforce in the face of severe employee shortages; expand new web based offerings; work to analyze the cost effective use of technology to meet more enrollment; provide information, not just data, for management; and compete in an environment where institutions cross the national borders to meet student needs anytime/anywhere (Milam2001). An important

characteristic that is common to both these organizations and higher education is that knowledge is power, since the main asset which determines the employability of individuals is their knowledge. Governments and other policy making bodies have pushed institutions towards the knowledge revolution. Even in these arenas there is scope for further development. However, the greater challenge lies with the other two elements of knowledge management: in the creation of a knowledge environment, and the recognition of knowledge as intellectual capital, there is still scope for considerable progress. Although knowledge based organizations might seem to have the most to gain through knowledge management, effective knowledge management may require significant change in culture and values, organizational structures and reward systems. The management of the relationship between knowledge and power is crucial.

Finally, knowledge management for higher education in a global economy requires strategic alliances on an international arena, and the creation of global knowledge repositories, which are used to the competitive advantage of the partner in the alliance. The state influence over most universities and their myriad stakeholders may militate against the creation of appropriate global alliances.

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