Leveraging Knowledge in Higher Education Organizations

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ABSTRACT

Knowledge has become the key resource in the present post-industrial society. Organizations around the world are now required to cleverly manage their biggest assets: their knowledge capital, in order to gain competitive edge in the complex and dynamic environments confronting them. In Malaysia, the K-Economy Master Plan was launched in September 2002 to drive the nation towards this new imperative and various initiatives are now underway. As a result of these initiatives, the demand for education and training is expected to increase in the near future and beyond. Higher Education Organizations (HEOs) in the country are confronted with the challenge of meeting these needs. To cater for this, HEOs must first begin to manage their most valuable asset: their knowledgebase. Managing this requires a concerted and structured effort in implementing Knowledge Management (KM). But the problem is that leaders at various levels in many of our HEOs are still struggling to make sense of the KM imperative. It is thus proposed that, as a first step in implementing KM, leaders in HEOs consider the following variables: identify the knowledgebase; identify how knowledge is created, shared and used, identify the role of information and communication technology (ICT); identify an appropriate ICT system; and identify appropriate people management strategies. This paper reports the findings of an inquiry undertaken at two HEOs, one public and the other private, via interviews with academics, in identifying the key features of the variables stated above.

1.0 INTRODUCTION

We are in the midst of an economic transition from an era of competitive advantage based on information to one based on knowledge creation. Knowledge as the most crucial factor of production and competitive advantage in organizations has been of interest to many researchers (e.g. Caddy, 2001;Bhatt,2001; Smith,2001) . Knowledge has taken center stage (Davenport et al. 1998, cited in Martensson, 2000). Knowledge is the icon of the new economy. The main producers of wealth are now information and knowledge (Kreiner, 2002). Consequently, there is less and less return on traditional resources of production - land, labour and capital - the classical factors of production, have become secondary to knowledge, as the primary resource of the new economy (Drucker, 1992, cited in Lang 2001). Quinn (1992) in support of this view, points out that the value of most products and services depends on knowledge-based intangibles such as technical know-how, product design, marketing presentation, understanding customers, personal creativity and innovation. Thus, with knowledge making its entry onto the global economic stage, the effective management of it, is gaining prominence over everything else in business organizations all over the world, in their quest to be able to compete or perhaps, even keep afloat.

Knowledge Management (KM) is a management approach which is portrayed in the business literature as an innovation with the potential to affect the whole of an organization's business (Gooiger, 2000) and put simply, it is the appropriation of human intellectual assets by way of suitable modern information and communication technology and distinct people management strategies. Several reasons are advanced for the implementation of KM within large corporations including the widespread digitalization of business environments, the rise of time based competition as a marketing weapon, (requiring firms to learn as much as possible in very short periods) the integration of advanced manufacturing technology with design and marketing, the globalization of operations, (resulting in businesses having to coordinate complex geographically dispersed activities undertaken by people who rarely meet face to face) and high incidence of takeovers and mergers whereby two or more enterprises need to bring together different information gathering and dissemination systems (Clippinger, 1995; Seemann and Cohen, 1997, cited in Bennett and Gabriel, 1999), and Beijerse (1999) sees improvement of efficiency, improvement in the market position by operating more intelligently on the market, enhancement of the profitability of the company, improvement of relevant competencies, the making of professionals learn more efficiently and more effectively, enhancement of synergy between knowledge workers and making the company focus on the core business and on critical company knowledge, as some of the benefits that an organization can reap as a result of effective implementation of a KM programme.

Various public and private sector organizations around the world have begun to focus on how to leverage their investments in knowledge or intellectual capital. Malaysia,

which in 1992 had taken the challenge of attaining the status of an industrialised nation by the year 2020, had to inevitably jump on the knowledge bandwagon, and began the intensification of interest in KM activities in literally every sector of its economy through its various agencies.

Obviously, the government is dependant very heavily on Higher Education Organizations, (HEOs) especially universities - the guardians of knowledge - to lead the nation towards greater heights. HEOs are knowledge intensive organizations. They possess a variety of different types of knowledge. The results of research, for instance, are important sources of knowledge. In addition they collect knowledge from external sources (e.g. academic research and statistics, to support their work). Perhaps their most important knowledge resides in their employees as a result of their professional development and experience in working with their clients and stakeholders.

HEOs should recognise the challenge faced by the Government and the challenges posed by the emerging new economy. HEOs should spearhead these challenges and exercise a leadership role within its area(s) of responsibility and with knowledge being their key product, they should deliver higher value services to their constituencies by providing timely advice on emerging KM governance issues.

The ability of HEOs to be successful in meeting this mandate will depend on its capacity to leverage the vast amount of knowledge it has in documents, people and processes. HEOs must improve the way it creates and shares its knowledge. To develop this approach requires a concerted, focused, structured and an integrated approach to KM. It is not denied that there are attempts at implementing KM in HEOs but it is the researchers' contention that these attempts are merely ad-hoc. Leaders in HEOs are still struggling to identify viable knowledge strategies and to locate and introduce practical tools and techniques. In sum, managers in HEOs are struggling to make sense of the KM imperative. This could be due to reasons as Shariq (1998) posits, KM as a discipline still lacks the necessary theoretical, analytical and empirical foundation (especially within HEOs), and that no general approach to managing knowledge is commonly accepted, although several isolated and at times diverging notions of KM are being advanced based on findings in diverse areas. The researcher believes that the availability of a model for effective implementation of KM in HEOs, universities especially, will go a long way in aiding them and other institutions of higher learning in the country to implement KM effectively, thus, this study addresses the problem:

RP : How is Knowledge Management implemented in higher education organizations ?

Study Objectives

The specific objectives of this study follow below:

To find out the specific form of explicit knowledge and tacit knowledge which is to be incorporated in the knowledge base of higher education organizations.

To find out how knowledge is created, and shared in higher education organizations

To find out what an appropriate and adequate Information and Communication Technology framework is for effective implementation of KM in higher education organizations

To find out what specific people management strategies should be utilized in higher education organizations to encourage knowledge creation and knowledge sharing

2.0 THEORETICAL PERSPECTIVE AND LITERATURE REVIEW

The primary purpose of this exploratory study is to construct a KM implementation model, based on empirical findings that can be used as a guide in the selection and or formulation of an effective KM implementation approach in Malaysian higher education organizations. The first task therefore, is to gain an understanding of the current knowledge of KM implementation experiences to identify the Key Organizational Requirements (KOR) (a term borrowed from Thiagarajan et al.(2001)) which for the purpose of this study refers to strategies that have to be manipulated for effective implementation of a KM programme. Each KOR is made up of *critical elements*. Critical elements "inform" the strategies. Critical elements are the building blocks, which make up the strategies. This was done by reviewing the relevant literature which provided the theoretical framework for this study. The implementation of a KM initiative comprises five stages requiring five KOR's. The focus of this study is Stage 1 (S1), KOR 1: Identification of KM Best Practices, which is made up of five critical elements namely: knowledge base, KM processes (knowledge creation, sharing and use), KM tools (role, appropriateness and adequacy) and people management strategies.

2.1 Critical Element 1: Knowledge Base

"Knowledge" is variously described in the literature making it difficult to create a cohesive identity. Some of the descriptions are lumpy, leaky, contextual and capital (Eveland and Tornatzsky, 1990; Liebeskind,1996;Nardi,1996; Miller, 1996 cited in Shariq,1998). However many practitioners and researchers in the KM area make a distinction between data, information and knowledge and agree that basically there are two forms of knowledge; explicit knowledge and tacit knowledge (Bhatt (2001);Herchel et al. 2001; Smith,2001; Lee and Yang, 2000;Bhatt,2000; Choo,2000). Bhatt (2001)

for instance considers data as raw facts, information as an organized set of data and knowledge as meaningful information .

In organizations, tacit knowledge is the personal knowledge used by employees to perform their work. It is learned through extended periods of experiencing and doing a task during which the individual develops a feel for and a capacity to make intuitive judgements about the successful execution of an activity. Tacit knowledge is the skills and "know-how" we have inside us that cannot be *easily* shared (Lim, 1999, cited in Lee and Yang, 2000). Examples of tacit knowledge at work would be the technician who can tell the health of a machine from the hum it generates or the bank manager who develops a gut feeling that a client would be a bad credit risk after a short conversation with the customer (Choo, 2000).

In contrast, explicit knowledge resides in formulae, textbooks or technical documents and is relatively easy to articulate and communicate and thus easily transferred between individuals and across organizations (Lee and Yang, 2000). Most explicit knowledge is technical or academic data that is described in formal language like manuals, mathematical expressions, copyright and patents. This "know-what" or systematic knowledge requires a level of academic understanding that is gained through formal education or structured study. Once codified, explicit knowledge assets can be reused to solve many similar types of problems or connect people with valuable reusable knowledge (Smith, 2001).

Every organization has a slightly different knowledge database (Smith, 2001) and if we are to manage knowledge in an organization we need to first understand what it is (Choo, 2000), thus raising the issue of the type of knowledge that is required in the database of a higher education organization, hence, the first research question:

RQ 1 : What is the nature of tacit and explicit knowledge in higher education organizations ?

2.2 Critical Element 2: KM Process

Existing KM models or applications can be broadly classified in three main categories. Davenport et al. identified a project-based approach to KM where they were able to identify four broad types of project objectives, namely:

- To create knowledge repositories
- To improve knowledge access
- To enhance the knowledge environment
- To manage knowledge as an asset (Davenport et al., 1998, cited in Rowley, 2000)

Other researchers take a process-based perspective to the definition of knowledge management and propose a list of KM processes which among others include the following:

- Generate new knowledge
- Assess knowledge from external sources
- Represent knowledge
- Embed knowledge in processes, products and services
- Measure the value of knowledge assets and the impact of KM (Galagan 1997, cited in Rowley, 2000)

Another model of KM is that of Demarest who identifies four phases of KM in an organization namely:

- The creation of knowledge
- The dissemination of knowledge
- The use of knowledge
- The embodiment of knowledge (Demarest, 1997 cited in McAdam and Reid, 2000)

For the purpose of this study a modified version of Demarest's (1997) model will be utilized. Thus, the constructs of the model to be utilized for this study are:

- Creation of knowledge within the organization
- Sharing of knowledge throughout the organization
- Use of knowledge within the organization

The purpose is to use this model as a lens through which to view the process of KM in higher education organizations which will provide the data, so that best practices can be identified for the purpose of creating the model.

Some examples of the above process cited in the literature are:
McKinsey & Company and Bain & Company use people to people methods to personalise tacit knowledge. Tacit knowledge is personalized when specific expertise is used to provide creative, analytical, rigorous advice on high-level strategic problems. This personalized tacit knowledge fits the company culture, customer needs and standard reporting methods. Both companies build worldwide networks of people who had successfully solved similar problems by enabling them to work together to create realistic solutions to problems. Networks were connected so that tacit knowledge could be shared face to face over the telephone, by e-mail and video conferencing (Smith, 2001).

Another example of the KM process is that given by Herschel et al. (2001) which is the use of the SOAP protocol that is used in the medical community. It is used to structure and document situation oriented, physician /patient clinical encounters. Soap provides a consistent framework for:

- structuring clinician/patient narratives
- understanding the clinicians thinking about perceived problems and issues

- learning about techniques and tests employed by the clinician in the knowledge creation process and
- sharing the clinicians reasons for action taken to address patient issues

In other words the SOAP process provides a consistent mechanism for documenting:

- what the physician understands about the patients situation (sense making)
- how the physician closes gaps in his/her understanding about the patients situation (knowledge creation) and
- what actions the patient takes relative to treatments (decision making)

The use of the SOAP protocol allows clinicians to accumulate knowledge about the patient over time. Moreover, by structuring the documentation of the patient clinician dialogue and the clinicians thinking and actions, tacit knowledge is being externalized and can be shared with and used by other clinicians.

Yet another example of this process is the following account by Smith (2001). Actual work practices, customer service representatives use to fix Xerox machines succeed because reps depart from formal processes and apply their tacit knowledge. While eating and gossiping, reps talk about work, they ask each other questions, offer solutions, laugh at mistakes and discuss changes in their work, the machines and customer relations. Reps tell stories and keep each other current on what they do , what they know and what they learned. During this socialization process, reps develop a collective pool of practical or tacit knowledge that they all can draw upon. In turn reps also contribute their unique strengths and talents that other reps can use and improve on. This brief discussion brings to fore the issues of knowledge creation and knowledge sharing hence, research question two:

RQ 2 : How is knowledge created, shared and used in higher education organizations?

2.3 Critical Element 3: Appropriate and Adequate ICT System

The role of information and communication technology (ICT) in implementing KM has been of interest to researchers such as Bhatt (2001), Smith (2001), Jarvenpaa and Staples (2001), Shariq (1998) and Offsey (1997). Jarvenpaa and Staples (2001) posit that advances in ICT have increased the potential for greater dissemination of information and knowledge beyond its creator. ICT's have increased both technical and social connectivity in organizations facilitating information and knowledge sharing. Technology has reduced the economic cost of sharing information and knowledge over various boundaries and has also created social conventions around communication that make it easier to share information and knowledge among diverse groups in an organization and across organizations.

Most case studies to date have shown that a successful KM programme requires a change in organizational behaviour and in the technology infrastructure. Technology by itself is not the solution to an organizations KM needs (Bhatt,2001) but it is clearly required to enable the organization's processes (Offsey, 1997).

Offsey (1997) further notes that the promise of technologies aimed at KM is that they will help organizations use their knowledge more efficiently without changing the tools they currently use to create and process it. That is the promise but unfortunately what many software vendors tout as KM systems are only existing information retrieval engines, groupware systems or document management systems with a new marketing tagline. What executives really need are new and culturally fit technologies designed to make revolutionary changes in the way knowledge workers create, communicate and manage knowledge. Culturally fit technology for the purpose of this refers to technology that is of use to an organization's specific needs in implementing KM.

Robertson and Hammersley (2000) observed that at Expert Consulting, technologies such as groupware and intranets existed and that consultants were aware that packages such as Lotus Notes could provide quality documentation. However, the use of both was spasmodic and piecemeal. For example, groupware only tended to be used when geographical constraints imposed a need to work in this fashion. Consultants preferred project team working to be face- to- face rather than via Lotus Notes discussion threads. Groupware technology was not considered rich enough to adequately convey some types of information and knowledge required during project work. In many instances, when significant decisions or results needed to be shared across a project team the technology would simply used to schedule a telephone conference call. Information technology then, while facilitating low level communication did not play a significant role in KM within this firm highlighting the limitations of merely investing in new technology, thus raising the issue of appropriateness and adequacy of an ICT framework in implementing KM in organizations, hence, the research question:

RQ 3 : What is an appropriate and adequate ICT system to aid effective implementation of KM in higher education organizations?

2.4 Critical Element 4: Appropriate People Management Strategies

The people management dimension of KM has been of interest to some researchers (e.g. Bhatt, 2001;Solimon and Spooner, 2000;Gooijer, 2000;Robertson and Hammersley, 2000). Dissemination of tacit knowledge especially is a social process. People must contribute knowledge to become part of a knowledge network. To show its commitment to sharing knowledge, an organization should foster the employees' willingness to share and contribute to the knowledge base. Current performance and reward systems exemplify an individual's personal achievement and rarely take into account an individual's contribution or participation in formal collaboration efforts. Reward structures and performance metrics need to be created which benefits those individuals who contribute to and use a shared knowledge base. Those who excel at knowledge sharing should be recognised in public forums such as newsletters or e-mails. Employees must be made to understand that the success and advancement in their career will be based on KM principles. KM skill must be seen to be as important to career advancements as continuing education and communication skills (Bhatt, 2001, Lee and Yang, 2000).

To get a head start, the position of Chief Knowledge Officer (CKO) to coordinate the KM infrastructure, components and activities could be crucial as a corporation undertakes a KM programme. The CKO is entrusted with the role of transforming intellectual property into a business value. The CKO has the ultimate corporation-wide responsibility for the controlled vocabulary and knowledge directory and tackles the difficult issues associated with cross department or cross corporation processes that have unique knowledge sharing requirements. Breadth of career experience, familiarity with his organization and an infectious enthusiasm for his mission are characteristics of the CKO (Lee and Yang, 2000).

In the knowledge economy, people who work with their minds rather than their hands are the majority of the workforce. Robertson and Hammersley (2000), report that, Expert Consulting Ltd. facilitated and sustained the process of KM through specific people management practices that created an organizational environment in which knowledge was willingly shared by expert consultants and they were motivated to stay on with the firm. Project team working was not hindered by consultants jealously guarding their personal knowledge and expertise and more generally the organizational culture was such that consultants were motivated to remain in "relative" terms loyal. Expert consultants were selected on the basis of their cultural fit (willingness and ability to share knowledge and skills with consultants from other disciplines) which was subjectively assessed.

Consultants remained within the firm because it afforded them a unique environment in which to work. They were free to work on inter-disciplinary projects of their choice, which allowed them to work with others from different specialisms and further developed and enhanced their own intellectual capital. Inter-disciplinary project team working provided these highly skilled experts with a knowledge rich and stimulating environment in which to work and there was also ample resources available for continuous professional development. Consultants worked in a highly autonomous, egalitarian culture characteristic of high trust in which knowledge sharing was an inherent aspect of the organizational environment. Consultants were unencumbered by any form of bureaucracy procedures or systems other than a financial control system. Personal Revenue Targets (PRT) served to stimulate knowledge sharing and created an internal market for expertise. While consultants aimed to achieve PRTY's as a matter of professional pride, those who had problems achieving them were given active encouragement by divisional managers to improve. Formal or informal sanctions were not imposed.

The distinctive way by which consultants were managed highlights a misfit with mainstream human resource literature in that formalized codified practices were rejected in favour of highly informal, subjective approaches that in many cases relied on consultants managing themselves. Thus, people management consisted of "managing" the consultants paradoxically in a way that diverted attention away from control and towards knowledge sharing. Efforts were directed mainly at sustaining a highly informal networking environment in which experts would enjoy working. This account raises the issue of the techniques to be employed for effective people management within a KM framework, hence, the research question:

RQ 4: What are the appropriate people management strategies employed in higher education organizations for successful implementation of KM ?

3.0 RESEARCH METHOD

Data for this exploratory study was obtained via semi-structured interviews with twelve lecturers from two universities, one public and the other private, which have a knowledge management initiative underway. Questions were posed based on items generated from the literature and the interviews were conducted in such a way that a thorough discussion could be initiated

4.0 RESULTS

4.1 Explicit Knowledge

Table 1below gives the results regarding the nature of explicit knowledge considered necessary in the knowledge base of HEOs for effective implementation of KM:

Table 1: Explicit Knowledgebase of HEOs

Course Database	**Student Database**	**Lecturer Database**
▪ Aims, objectives, course content and duration ▪ Course operation and Quality Standards ▪ Course and Examination Schedule ▪ Teaching and Learning Materials ▪ Reference Materials/Sources ▪ Mode and criteria of evaluation	▪ Background and Entry Qualifications ▪ Graduation Requirements ▪ Full academic history ▪ (results and achievements) and brief background information ▪ Contact information (eg. e-mail)	▪ Qualifications and expertise ▪ Professional affiliations ▪ Research activities and interests (publications etc.) ▪ Class schedule ▪ Contact information
Library Resources	**Teaching and Learning Materials Database**	**Examination Question Database**
▪ Resource materials ▪ Information Database etc		

4.2 Tacit Knowledge

Below is a list of the features of tacit knowledge in HEOs as envisaged by the respondents:

- The knowledge of specific approaches to teaching that are applicable to particular classroom situations
- Nature of students' inability to communicate in public.
  (I finish class 20 minutes earlier to provide opportunities for my students to see me personally in my office to seek clarification on material taught knowing that they are too passive and shy to put forward questions in class)
- Minimize anxiety among students to get the into the right environment for learning
- Knowledge of what it takes to complete a course successfully
  (I have an MBA and only I know what it takes to successfully complete the course because I have gone through the mill, so to speak, and this knowledge is not described in the course content and neither do they tell you about it at the registration briefing)
- Students possess different learning strategies
  (As a student I learned things differently from the rest of my friends. I know which strategy suits me best in accomplishing a task. For instance, when writing my Masters report I did not have an idea of the structure of a thesis. My lecturer was of no help either. But once I browsed through a few theses the task became a lot easier. This they don't teach students in the research methodology class)
- Students have different reasons for sitting in the class.
  (What motivates them is not similar across the board. Knowledge of what motivates my students helps me formulate my teaching and learning strategies)
- Location of expertise and resources for research and development activities
- Reasons why students choose a particular university to continue their studies
- What is it that students specifically expect from lecturers
- Ability to source for teaching and learning materials, outside suggested sources to suit student interest and learning ability based on experience
- Understanding of students' culture and mapping it on the teaching learning process
- Joy of learning from previous experiences as a student from past teachers who were able to attract and sustain interest
- Knowledge of "examiner discretion" while grading examination scripts
- Knowledge of, which leadership role to embrace given the diversity of student population, capabilities and interests. (e.g. authoritarian vs. democratic)

4.3 Knowledge Management Processes

The respondents' perceptions regarding the process of knowledge creation and knowledge sharing in HEOs are listed below:

- Research
- Active networking
- Social gatherings of staff.
- Seminars / Conferences

- Meetings
- Newspaper cuttings and personnel magazines
- Training on the job
- Work discussion and consultation
- Working in workgroups on projects
- Discussion(s) with students
- Brainstorming sessions
- Face-to-face contacts like casual conversations with experts
- Staff Development Programmes
- Self Study

4.4 Role of ICT System

The lecturers felt that collaboration facilities; basic groupware products such as Lotus Notes, and Microsoft Exchange provided them with a basic messaging infrastructure in the form of e-mail services and also offer a range of collaborative features such as workflow automation, discussion groups, document management, shared databases, and calendar and scheduling functions, which enable them top be more productive at the workplace The lecturers also felt that discovery facilities such as the Internet, corporate intranets, LAN etc. fulfilled the need of finding and accessing information from a wide variety of information sources. The KM tools which were cited by the majority of respondents as adequate and appropriate for their knowledge related purposes are:

1. Personal computer /laptop
1. Document Management Systems
2. Corporate 'yellow pages' of internal expertise
3. Data warehousing
4. Groupware
5. Overhead Projector
6. Internet
7. Intranet
8. Overhead
9. Overhead Projector
10. Internet
11. Intranet
12. LCD Projector
13. Electronic Publishing Systems
14. Electronic mail

4.4 Appropriate People Management Strategies

The salient features of appropriate people management strategies, which generated a lot of interest among the respondents' are cited below.

When implementing KM especially within our context it is necessary for people at the top to understand that it is a radical innovation or change to an organization. It should be regarded as an intervention on the organization's culture, for the moment at least. Thus, in implementing it leaders in our organization should first understand the principles for managing change processes before considering implementing KM on a drastic note

We may probably need a "Knowledge Officer" with enough "know-how" to guide us through this journey. We are blind in the sense that we do not know where we are heading. This person should have, not only the necessary knowledge but also the ability to clearly communicate his "ideas" so that we know what exactly is it that is expected of us in helping implement KM

The tenure of employment for academia should be made to make them become more competitive and accountable. Academia should be made up of people who are constantly creating new knowledge and more importantly sharing them with others and encouraging its use, or at the very least be made up of people who are able to create an environment in which knowledge creation and knowledge sharing can flourish.
People should be encouraged, recognized and rewarded for showing appropriate knowledge management behaviors especially sharing their knowledge. Specific policies that will encourage individuals to share knowledge should be created so that people in HEOs know that irrespective of their qualifications, their willingness to share also plays a predominant role in determining their future as academics.

The lecturers also highlighted the need for proper recruitment and selection strategies. For instance, one highlighted that he knows "lecturers who are unable to speak in front of an audience, many, he says require vocal training and some even speech therapy".

Some highlighted that equal standing should be afforded to all lecturers, regardless of their length of service, with regard to promotional prospects. Otherwise, they say, many "juniors" will opt to hoarding knowledge.

In order to stay at the forefront of their professional fields, academics must be constantly aware of as many developments within their particular disciplines and professions and opportunities for them to participate in activities that offer the opportunity to further their own professional development should be created in abundance. Moreover selection of courses, conferences etc. must be those that have direct relevance for the work they do and they must be given the leeway in deciding for themselves what is appropriate and necessary

Everyone should be kept fully informed of developments and communication should be two-way. Members of the management team should be active consultants, contributing significantly to not only student advancement but lecturer professional development and career advancement as well.

A culture that promotes knowledge transfer should be present. All lecturers and non-academic staff in the organization should be put in touch with one another, to encourage group problem solving and the sharing of new ideas and knowledge. It encourages open unrestricted communication among people and the free exchange of ideas might help find innovative solutions to the challenges posed.

Formalise the vision, mission goals and strategies (not pay lip service) and communicate it throughout the organization and show success stories of KM initiatives so that people know the significance of employing it in their organization. Minimize the bureaucracy and simplify the mechanism involved in R&D.

The management should endeavor to create a learning, collaborative and innovative culture by engaging with academics to find out what actually constitute these elements. Regular staff development programs, for instance, have to be organized based on needs analyses so that we don't sit in at programs that are created merely to fulfill the agenda of certain people within the organization.

Thus, this exploratory has shown some of the salient features that need to be incorporated in knowledge management approaches that are to be implemented in HEOs. The findings are however, the result of an exploratory study and therefore further in-depth investigation(s) need to be carried out with a larger sample to obtain a deeper level of understanding of this phenomenon.

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