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Knowledge Management and Sharing through Interactive Web-based E-learning and Training Opportunities for Lifelong Learning in Developing Countries

S.C. Kumaresan

BITS Pilani-Dubai, Dubai International Academic City
PO Box No.500 022, Dubai, UAE
E-mail: sckumaresan@hotmail.com

ABSTRACT

The paper elaborates on the importance of web-based knowledge sharing (KS) and management opportunities in large organisations and institutions and the concept of electronic learning (e-learning) in developing countries. It looks at some of the key issues of e-learning and knowledge management (KM) with the help of information and communication technologies; the potential benefits and drawbacks of such KS. The paper also discusses some of the areas of implementations in different organisations and educational Institutions.

Keywords: Knowledge mangement, knowledge sharing, e-learning, implicit knowledge, tacit knowledge, explicit knowledge, KM, KS

1. INTRODUCTION

Knowledge management (KM) and knowledge sharing (KS) are important factors that support continuous and lifelong learning enabling people to continue developing their skills throughout their careers. The concept of e-learning is attractive and drawing attention of the management of organisations and people who share similar concern as far as continuous learning and assessment are concerned. There are many problems associated with traditional education and assessment including student's and employee's schedule conflicts, geographical isolation, changes in demographic and economic issues, and other obstructions that preclude students and employees from attending traditional classes and training programmes. This paper tries to point out the need for an alternative educational/training system to complement the traditional system. It also tries to highlight the importance of how KM solutions and KS can foster the traditional system in running an effective alternative educational and training programmeme in organisations and institutions. Many organisations and institutions are beginning to feel that the knowledge of their employees is their most valuable asset. They may be right, but few firms have actually begun to actively manage their knowledge assets on a broad scale. With the help of information communication technology (ICT) it has now become very easy to share knowledge and access the same from any demographic location by a student or an employee.

The Internet and web-based technologies have a profound effect on the way(s) in which educational and training institutions now operate in. These technologies have paved the way for many innovative educators/ trainers to think of new ways in which to use the Internet/Intranet to provide web-based KM and training opportunities. The global networking and web-based solutions are catalysts for addressing today's challenges of KM, KS, and e-learning. This has become evident with the increasing number of tertiary educational

institution and industry-based training organisations attempting to offer a wide variety of web-based online learning solutions in developing countries and globally. This effort may be a supplement to face-to-face communication between students and educators/ trainers.

2. KM AND KS IN E-LEARNING BY WHOM, HOW AND WHY?

Training and lifelong learning are the main objective of any organisation or institution as for as their employee or learner is concerned. Organisations need their employees to be updated with the latest development and know-how in their area and expect them to be skilled in all the latest trends. They take advantage of the employee's knowledge to improve their productivity. However, universities offer continuous learning opportunities for all those who are unable to attend traditional learning programme due to various reasons.

Universities that offer the traditional distance learning programme invest a lot on conducting the class room lectures and delivery of printed course materials. A lot of money, material and time is spent on document creation and delivery. However, most of the time the material do not reach the learner on time and may not be beneficial. Organisations also spend a lot on the material manpower and time in organising training programmes for its employees and assessing their skills.

These can be made easy with the help of web-based interactive e-learning programmes where the learner can take the course at his own leisure time and have an online assessment and know his results immediately. Universities can spread their wings to greater demographic area and people in such an environment where the learner is not required to take the traditional class room lectures. Thus, the process of lifelong learning for an individual can be realised.

3. WHAT HAPPENS TO THE EXISTING SYSTEM?

The web-based e-learning/training is in lieu of the existing practice of conventional class room teaching or training. The system can be introduced where the conventional system is not available. Depending upon the response and the success factor the e-learning/training can be introduced in other areas by replacing the conventional method. So a phased conversion from the conventional to the electronic method would be the right way to faster the concept of lifelong learning through web-based e-learning.

4. KM AND KS

Knowledge management is a discipline that promotes an integrated approach to identifying and sharing all of an organisation's knowledge assets including unarticulated expertise and experience resident in individual workers. In other words, KM is taking advantage of what you know. It involves the identification and analysis of available and required knowledge, and subsequent planning and control of actions to develop knowledge assets so as to fulfill organisational objectives. Knowledge can be divided into two types: "Tacit or Implicit Knowledge" and "Explicit Knowledge". Tacit knowledge consists of the hands-on skills, best practices, special know-how, heuristic, intuitions and so on. Tacit knowledge is personal knowledge that is hard to formalise or articulate[1]. The transfer of knowledge is by traditional and shared experience.

Explicit knowledge is rule-based knowledge that is used to match actions to situations by invoking appropriate rules. Explicit knowledge is used in the design of routines, standards operation procedures and the structure of data records. It enables the organisation to enjoy a certain level of operational efficiency and control. It also promotes equable, consistent organisational responses. These forms of knowledge can be found in any organisation and institution. The organisation, however, is skilled at continuously expanding, renewing and refreshing its knowledge in all categories. The organisation promotes the learning of tacit knowledge to increase the skill and creative capacity of its employees and take advantage of explicit knowledge to maximise efficiency.

Knowledge sharing is a process where the tacit or implicit knowledge is transformed into the explicit knowledge, which means that knowledge of an individual is converted or transformed into public or formal knowledge in an organisation or institution by a process called the externalisation (Fig. 1). The rapid growth of information and communication technology has made this transformation process very easy and accessible to everyone.

5. KM HIERARCHY IN E-LEARNING ENVIRONMENT

Rosenberg's review of some KM systems/solutions indicates that KM can be divided into three layers[2].

- Document Management: The earliest form of KM has been the use of technology in order to retrieve and access documentation. Today it is

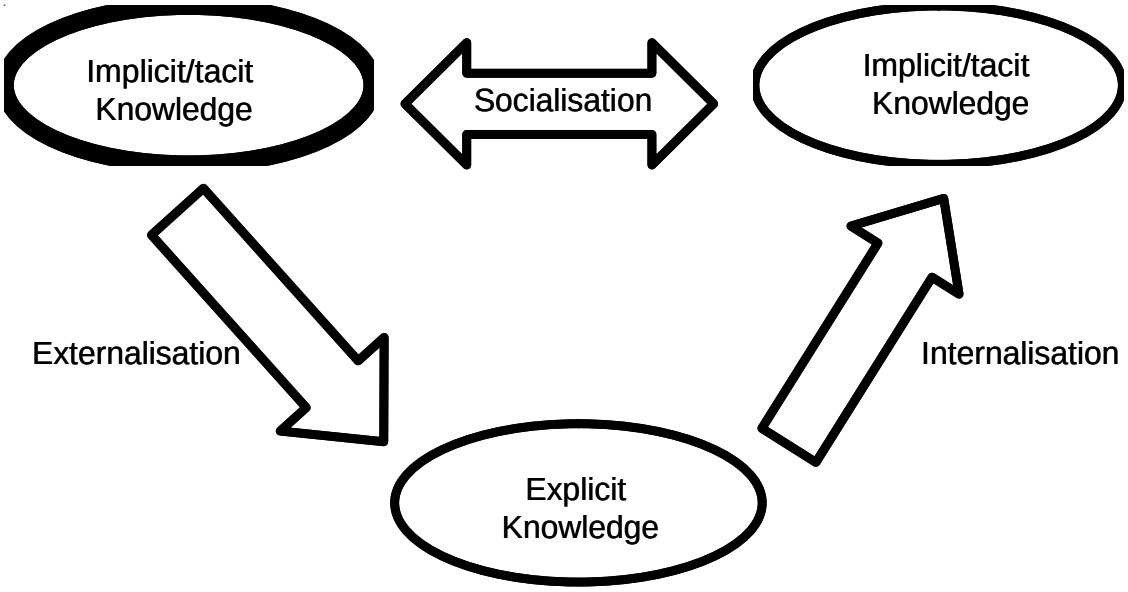

Figure 1. Transformation of Knowledge.

common for organisations to provide access to documents, reports, and online forms.

- Information Creation, Sharing and Management: This is where people contribute information to the system, creating new content and growing the knowledge base. That is to say, users are encouraged to read documents, fill forms and submit forms online. This would allow for the information to be continually updated.

- Organisation or Enterprise Intelligence: The ultimate in KM is the development of a robust and interactive KM system so as to accurately represent the organisational "know-how".

6. WEB-BASED E-LEARNING CONCEPT

The concept of digital learning or e-learning has been defined in many different ways. The historical background of e-learning can be observed over three decades of development in ICT-based education and training. Among the various technologies that were introduced in the past few decades, global networking advancements and web-based solutions occupy a very important position and have changed the concept of continuous learning significantly. Overall organisations, universities and institutions especially in the US have played a pioneering role in the application of technology and developments, which has eventually led to digital delivery of learning solutions[3].

Today a lot of universities abroad are offering profit oriented e-learning course and degree programmes. It is also to be noted that the e-learning industry is quite diverse and includes organisations that support the establishment of learning infrastructure and networks for higher education institutions and organisations. The web-based technologies allow students and customers to create learning programmes directly on the web without investing on their own tool or infrastructure. Web-based learning materials can be accessed from the web or Intranet and educators/trainers can communicate with each other using e-mail, chat or discussion forums. E-learning can be used as the main method of delivery of education/training or as combined approach with face-to-face class room-based teaching and training. Some of the key characteristics of e-learning solutions include[2]:

- Relaying on computer networking technologies—so as to make it capable of instant updating, storage/retrieval, distribution and sharing of instruction or information.

- Delivering to the learner via a computer that is connected to standard Internet technologies.

- Focusing on the broadest view of learning. That is to say, it considers learning solutions that go beyond the traditional paradigms of training. E-learning moves beyond training to include the delivery of information and tools that improve performance and competitiveness within the job market.

Providing effective futuristic learning solutions require a shift in attitudes and perceptions including

- Focusing on outcome: Learning solutions need to make a positive impact on learner's performance and work readiness.

- Providing flexible access anywhere/anytime: Knowledge solutions must meet the diverse need of learners concerning time frames and locations.
- Placing emphasis on online rather than paper-based delivery.
- Shifting of the focus from physical facilities to networked facilities: networked solutions for knowledge delivery play a significant role in information sharing, communications, and flexible access to learning material from any location in real time.

7. BENEFITS AND DRAWBACKS OF E-LEARNING

It is known without any doubt that there is an enduring and important role for traditional classroom instruction and the one-to-one interaction with the tutor or trainer, and nothing can replace the experience of interaction with the fellow learners/trainees. However, the concept of e-learning, as described earlier is undoubtedly the best alternative having its own advantages. Some of the advantages of the e-learning concept and disadvantage are described below.

7.1 Potential Advantages to Solution Provider

- Reduced overall costs.
- Reduced learning time.
- Consistent delivery of learning/training materials.
- Expert knowledge can be communicated and captured with effective e-learning and KM systems.
- Anytime/anywhere distribution and access of learning/training materials.
- A consolidated database of all problems and solutions (FAQ) can be stored and retrieved at any time saving time on repetition of answering the same question by the teacher/trainer.
- Educators can also provide potential solutions to problems or clear the doubts in their own leisure time and pace and the same can be accessed by the learner or trainee.

7.2 Potential Advantages to Learner

- On-demand availability of learning/training materials.
- Self-pacing of learning and training by the leaner.
- Interactivity with the trainer/tutor.
- Availability of newly updated material in a timely fashion.
- Availability of lecture notes/training material even if a session or class is missed by the employee/ student.
- Avoid travelling long distance to attend the conventional classes. Can take the lecture at a time of his choice.
- Know the results of class room evaluation/ assessment immediately.
- Upload assignments/seminar notes on the web based portal and need not waste time or cost in sending it to the university/institution.

7.3 Potential Disadvantages to Solution Provider

As there are many advantages of e-learning/ training the systems has it own disadvantages too. Some of these are discussed below and can also be taken as a topic for further research:

- The need for investment in technology of delivery and access of the materials.
- An appropriate content and effective instructional design is very important.
- Availability of infrastructure facilities in remote areas for delivery of the learning material for poor people especially in developing countries.
- Authenticity of the content has to be maintained.
- Difficulty in assessing the real caliber of the learner in the absence of a one-to-one interaction by the tutor.
- Technology selection free from any hacking or tampering of content
- Knowledge of access technology by the potential learner.

7.4 Potential Disadvantages to Learner

The disadvantage of the learner or the trainee has a telling effect on the success of the entire e-learning concept in a university or an organisation. Some of these potential are:

- The need for access technology by the learner.
- The need for printed workbooks or reference materials.
- Reduced social and cultural interaction with fellow learners and tutors.

- Non-availability of infrastructure facility in the specific areas of the learner.
- High cost involved in accessing, especially in developing countries.

The potential implications of KM for e-learning can be significant. For example, rather than relying on instruction, one can use well structured information including productivity enhancing tools to help people learn and improve their performance. We can differentiate between skills that must be performed automatically from information that can be accessed or referenced when needed. Learners need not be taught the steps in a process, but only how to find the steps.

8. CONCLUSION

Overall the introduction of e-learning and KM solutions needs to be a holistic process; one that addresses the fundamental issues of lifelong learning for those who desire. Expert knowledge can be pooled and shared through the web-based network.

There is no doubt that ICT is essential to enable the full potential of KM, however, it is important not to get carried away by technology if it does not improve the basic process of KM. KM is expensive but not implementing it could be costlier for an organisation or institution.

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About the Author

Shri S.C. Kumaresan is working as Senior Librarian at BITS-Pilani, Dubai. He has over 14 years of experience in the field of library and information science. He obtained Master of Philosophy from Alagappa University and Master of Library and Information Science from Bharathidasan University, Tamilnadu. He has published many books and articles in various journals. He is the Editor of *AALIS Newsletter*, and also a member of the Editorial Board of *the SALIS e-Journal*. His areas of interest are knowledge management, organisation and knowledge sharing.

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