Knowledge Management and eLearning in Professional Development

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Abstract. The rapidly growing use of technology in education is changing the way in which knowledge is produced, stored and distributed. Online education has already been accepted as the way of the future, knowledge may be distributed across both time and space. Knowledge management techniques can be used to capture, organize and deliver this knowledge and management systems can be used to quickly identify the most relevant information and distribute it to meet specific needs. Light is shed, in this paper, on the basic concepts of knowledge management and eLearning. A discussion on and how knowledge management and eLearning can be integrated and leveraged for effective online education and training is presented.

1 Introduction

In recent years the rapid and continuing evolution of technology has converted our world into a knowledge society. A knowledge society strategy will ensure that all business operators and the public sector have sufficient skills needed in a rapidly developing information society. The Government will invest heavily in innovation environment, research and product development, anticipate and safeguard the supply of a trained workforce and ensure high-quality education. Moreover, the Government will promote open and lifelong learning and on-the-job training by means of information and communications technology.

Recent research reveals great interest to introduce Knowledge Management (KM) ideas to eLearning systems. It is argued that KM can facilitate an eLearning system [15]. The joint studies of KM and eLearning point out the same fundamental goal: facilitating organizational learning. Researchers try to analyze the similarity of the goals, methods of assessment, and some knowledge sharing processes both in KM and eLearning. An eLearning system within KM is traditionally analyzed as a knowledge resource repository, where the KM methods can be implemented to increase the effectiveness of knowledge dissemination [4].

The main features of eLearning are discussed which benefit of the knowledge management approach. At the end an integrated approach between KM and eLearning is introduced.

2   Knowledge Management and e-Learning

2.1   Knowledge Management

Knowledge management is concerned with the identification, acquisition, distribution and maintenance of essential and relevant knowledge. Rowley describes the term Knowledge Management as follows: "Knowledge management is concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the organization's objectives [7]. Management has to cultivate and facilitate the sharing of knowledge and organizational learning. In brief, Knowledge Management is the management of processes that govern the creation, dissemination, and utilization of knowledge by merging technologies, organizational structures and people to create the most effective learning, problem solving, and decision-making in an organization.

place, knowledge needs should be clearly determined in the context of the.

2.2   ICT Enhanced Learning and eLearning Systems

With the increasing availability of Information and Communication Technology (ICT), the breadth and scope of distance teaching and learning process has changed dramatically. In the scope of this paper eLearning and online education will be defined as "the formally and systematically organized teaching and learning activities in which the instructor and the learner(s) use ICT to facilitate their interaction and collaboration".

In eLearning systems, the complete cycle of the teaching and learning process should be fulfilled. Important functional aspects within this coverage must be followed. Many of them have been exclusively developed alongside with research in eLearning while others have been adapted for eLearning requirements [12].

3   Integration of KM and Learning and Professional Development in a Company

3.1   Knowledge Delivery and Exchange

Knowledge management has evolved, and it becomes more integrated into the fabric of the organization. Knowledge management is becoming everyone's job. Main goal is to drive performance improvement of teams and individuals enterprisewide. Knowledge delivery/ exchange efforts focus on helping individuals make connections with subject matter experts. Knowledge exchange projects are designed to bring together knowledge seekers and knowledge sources in a way that they can interact with one another and more effectively share tacit knowledge. Individuals can discuss experiences, engage in complex problem solving and, in some cases, observe actual work activities. Knowledge exchange techniques include orientation, training, communities of practice, expertise location, mentoring/peer assist, alternative work arrangements.

3.2   Communities of Practice

A common knowledge exchange technique, *communities of practice,* brings together individuals who are likely to have the common context to effectively preserve organizational memory. This technique provides group validation of knowledge through the vetting and evaluation of materials. Participation in communities is closely aligned with the actual work of community members, so the knowledge is likely to be timely and highly relevant to their immediate knowledge needs. Community portals such as, newsletters, discussion forums, search engines..etc. plays important role in KM delivery.

3.3   The Evolution of KM and eLearning Integration

Learning can be seen as integrated in knowledge acquisition as part of the job of the employees. Education has to be a process of sharing and acquirement of knowledge, skills and competencies. Advantages of KM are very useful for that process. Knowledge management is a core part of teams training so capturing of knowledge process is very similar to the processes related to selection of most appropriate learning content in eLearning.

Outcome of effective learning process should be not only knowing facts for a separate subject but having practical skills and developing competency in the given domain so acquiring knowledge is more precise definition of the learning outcomes instead of learning facts for different related to domain topics. Therefore KM processes should be more deeply and successfully integrated in learning content delivery and learning activities support.

4   Similarity between KM and e-Learning Process

Knowledge management is a core part of teams training so capturing of knowledge process is very similar to the processes related to selection of most appropriate learning content in eLearning. Outcome of effective learning process should be not only knowing facts for a separate subject but having practical skills and developing competency in the given domain so acquiring knowledge is more precise definition of the learning outcomes instead of learning facts for different related to domain topics.

The desired outcome of learning should be knowledge acquisition and in combination with some practical skills gained in the process of education they have to present some type of competence. On this way communication and collaboration will be improved and free exchange of competencies will be provided.

4.1   Common Requirements / Characteristics of Knowledge Management and eLearning Systems

There are many common features shared between eLearning systems and knowledge management systems. Some of these are [13]:

System Architecture: knowledge management systems and eLearning environments share the same system architecture.

Collaboration and Communication: both systems enable and support rather rich communication and cooperation features. Different kinds of synchronous and asynchronous communication are possible, group scheduling, application sharing, instant messaging and other forms of cooperation are supported. Those tools guarantee successful education and team work. Both systems also include different tools related to work in groups or different types of virtual communities, or communities of practice.

Content as Learning Objects: Learning Objects are discrete chunks of reusable online learning materials. A learning object or knowledge element as it is sometimes called can be a text document, an element of animation, a streaming audio/video or other form of online content. Creating central repositories of reusable learning objects using object oeriented design and metadata and following the international standards for it, is serving the needs of both e-learning and knowledge management.

Personalization of delivered information: flexible eLearning systems and high quality KM-systems offer the possibility of personalization. The working environment can be adapted to the user needs and characteristics. Both systems are not closed or isolated. Information is most often shared among several resources and can be changed, extended, modified, removed on demand.

Learning objects are the appropriate technology for development and exchange of different types of information.

Access rules: in both worlds, users need to be identified by the system. Users have to register, they are attached to a defined profile and they are given access to relevant information only. Most often different layers of access rights enable the control of information access.

5   e-Learning Built upon Knowledge Management Methods, Models and Systems

Knowledge management tools and technologies can be applied to eLearning in several ways.

Via a portal customized information can be aggregated and integrated within a particular working environment, application or service, or use a single interface to target an individual user needs and interests. The following areas of eLearning in which knowledge management can be most effectively used have been identified [14].

5.1   Dynamic Delivery and Presentation of the Content

The portal can contain a repository of content that is modularized and arranged to facilitate access to it by the content developers.

We set forward a dynamic generation of LO's or course modules customised to the learner group on point of content and customised on point of presentation, fitting the

preferences or characteristics of the individual learner and the used appliances by them.

5.2 Collaborative Learning and Communities of Practice

Collaborative learning involves students working together in some way to support the learning activity. They can do this by accessing a common set of learning material or by posting their own queries, observations or comments on the site. The collaboration can be between two individuals or between larger groups of learners. It can be built on the experience of knowledge management with communities of practice.

6 Conclusion

Emphasizes were made on the basic characteristics of eLearning and knowledge management and the main task of the research is to find common features of both domains. A combination of the advantages of both domains facilitates delivery of high quality education for satisfying specific educational needs of team members. An attempt has been made to identify the areas in which knowledge management concepts can be utilized in Learning within organizations and eLearning systems. The potential and limitations are briefly outlined. The use of Knowledge Management in eLearning will definitely impact the quality of the education that is delivered and deliverability of information in a manner of knowledge and information sharing.

References

1. Frappaolo, C., Toms, W.: Knowledge Management: From Terra Incognito to Terra Firma. The Delphi Group (1997)
2. Sherwood, C.: Knowledge Management for eLearning. In: International Conference on Engineering Education (2001)
3. Davidson, T.H., Prusak, L.: Working Knowledge–How Organizations Manage What They Know. Harvard Business School Press (1998)
4. Ponce, D.: What Can eLearning Learn from Knowledge Management? In: Proceedings of the 3rd European Knowledge Management School, San Sebastian (2003)
5. Woelk, D., Agarwal, S.: Integration of eLearning and Knowledge Management, http://www.elasticknowledge.com/ElearnandKM.pdf
6. Nonaka, I., Takeuchi, H.: The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation. Oxford university press, New York (1995)
7. Rowley, J.: From Learning Organization to Knowledge Entrepreneur. Journal of Knowledge Management 4(1), 7–14 (2000)
8. Kidwell, J., Jilinda, M.: Vander Linde Karen and Sandra L Johnson, Applying Corporate Knowledge Management Practices in Higher Education, Educause Quarterly, No. 4 (2000)
9. Yordanova, K.: Integration of Knowledge Management and eLearning, Common Features. In: International Conference on Computer Systems and Technologies, CompSysTech 2007 (2007)
10. Mertins, K., Heisig, P., Vorbek, J.: Knowledge Management: Concepts and Best Practices, 2nd edn. Springer, Heidelberg (2006)
11. Rodney Mcadam Sandra McCreedy - Critical review of knowledge management models

12. Paranjpe, R.: Knowledge Management and Online Education. In: International Conference on Open and Online Learning (2003)
13. Denning, S.: The Springboard: How Storytelling Ignites Actio. In: Knowledge-Era Organizations. Butterworth Heinemann, Boston (2000)
14. Spector, M.J., Edmonds, G.S.: Knowledge Management in Instructional Design, ERIC Digest (September 2002)
15. Ravet, S.: eLearning and Knowledge Management. The Newsletter of the PROMETEUS Network 20, 2–6 (2002),
    `http://prometeus.org/news/PROMETEUS_Newsletter20.pdf`