The Best KM-EL Integration Model for an Enterprise

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Abstract

While writing command lines during building a program for Knowledge Management (KM) and e-Learning, it naturally directs toward their integration. This kind of integration can be used by a number of ways. In this paper, we have analyzed all integration models and found the most suitable method of integration for an enterprise. Knowledge Management is particularly a more fluid ecosystem than the fundamental architecture of E-Learning, which is developed by multiple sources in contrary to a single user or a small team. Our goal is to be fulfilled various kinds of generalized and exceptional needs of an enterprise for building or finding a distinct learning ecosystem. To enhance the knowledge asset of a business firm we must require efficient E-Learning. We need to find how we use Socialization, Externalization, Combination, and Internalization to create the best integration. Usually, as an enterprise, we lag in using Knowledge management as a powerful instrument for knowledge assets. Thus, it facilitates E-Learning.

Keywords:- Knowledge Management, E-Learning, Integration Models

1. Introduction

Through decades Knowledge Management (KM) and E-Learning have developed to contain the best techniques resulting in systematized knowledge assets. As an enterprise, the knowledge base is the most precious asset it may have to cope with fast developments and survive in an age of fierce competition. In recent years KM and eLearning have acquired a handsome creating curiosity in the minds of computational scientists.All developments in this direction must result in a well-balanced ecosystem. The users leave fragments of knowledge online and create an enormous dump without any fundamental thread to systematize, whereby Both How to get required knowledgeout of the flood of information, is the task of a Knowledge Management System. The adoption of the KM system and instrumentation equips the enterprise with a precious treasure of knowledge adding up to its intellectual richness. E-Learning is one of the most effective instruments for collecting valuable information and R&D. This can only be possible with the best KM techniques for e-Learning. Hence, the purpose of the paper is to find an enterprise's best Integration Model for KM and E-Learning. We had set forward a few particular tasks to reach our goal:

- SOAR (Strengths, Opportunities, Aspirations & Results) analysis of enterprise;

- To find the hurdles in KM and e-Learning in an enterprise.

- To analyze Integration Models;

2. Aims & Objectives

For finding and creating a successful Integration Model, we identified certain facts to lay the foundation:

☐ To set a clear Knowledge Management schedulewith top management and share estimated projectcost;

☐ Setting categories of knowledge to bemanaged;

☐ Finding the main features of different categories of knowledge;

☐ Motivating the connected people to shareknowledge;

☐ Connecting the KM to Link KM toSOAR;

☐ Activating support team andonline tools;

☐ Continuous observation of KM implementationsuccess scaling;

3. Hurdles In KM-EL Integration

Despite huge IT developments, the KM- EL Integration Model is rarely implemented (Ras et al. 2005). Quick attention is needed to various types of problems related to KM & EL Integration as follows:

A. Problemsof Problem of Humancognition: There are six different categories of cognitive processes such as perception, attention, language, memory, learning, and higherreasoning.

B. Problems of Workplace: Frequent distractionsin ico-working space; Noisy environment; Communicable diseases; Inter-relations; Social & Professional Expectations; Over-management; Personal environmental preferences; Overcrowding sickness; Privacy problems; IT Tools; Type of Duty etc.

4. Differences And Similarities Between KM & EL

The E-learning and knowledge management systems are mainly concentrated on two primary goals.

- EL facilitates the learners with systematic learning and inter-communication with quizzes/tests thus skilling them for their better careers;

- KM provides knowledge by CMS (Content Management Systems), sorting & storing data collaborating with the experts on various topics/subjects;

- There are many similarities between KM and EL. Both have similar architectures facilitating the learning of the clients providing communication, cooperation, and customizable facilities.he Integration of KM and El is essentially needed in any big organization /enterprise to keep the employees/team members well informed and

knowledgeable because these days survival depends on smart facility learning, skill, adapting, and innovating. It keeps the enterprise floating in severe competition. In this modern era, every business depends on knowledge, and every team member/employee must be knowing about the firm. Therefore, it is essential to integrate KM with EL without delay. It equips every discipline of the big organization well informed and skilled to excel in the market. Cutting-edge technology helps us to acquire knowledge and learn anywhere 24x7. The well-structured& Integrated Systems cater to better understanding and skilling for peak efficiency. The dissemination of information and its management need to be well integrated into an enterprise. The KM system sorts and stores the data in repositories and disseminates it to the learners in a well-structured manner for better understanding and skilling and quick data presentation for excellence.

In light of the above discussion, it becomes quite obvious that well-integrated systems are an essential need of the time The well-customized supporting architecture of KM- Integration Model-EL is the soul of an organization to satisfy its clients and keep the team members ever-growing in the present environment full of competition

5. KM & EL Integration Models

A review of various KM & EL Integration Models has been done. As discussed in the tables, only Context-aware Corporate Learning Model [Schmidt] is implemented till now but in a fundamental environmental condition. Tech-Integration Model [Woelk, Aggarwal] emphasizes on the EL and KM technology integration which is capable of delivering, capturing and organizing the traditional courses and large bodies of knowledge in EL, but it is incomplete.

Knowledge management would be used and analyzed in the organization to understand the role of knowledge flow and management life cycle. The KM Models namely: Skandia's Intellectual Capital Model of Knowledge Management, Hedlund and Nonaka's Knowledge Management Model, Kogut and Zander's Knowledge Management Model, Demarest's Knowledge Management Model, Boisot's Knowledge Category Models, Nonaka's Knowledge Management Model, Frid's Knowledge Management Model and Stankosky and Baldanza's Knowledge Management Framework.

Table1: Various KM-EL Integration Models

| Integration Model	Implementation	Features
1. Context-aware Corporate Learning Model [Schmidt]	Yes	Based on user context; used in basic ecosystem; Need further development
2. Tech-Integration Model [Woelk, Aggarwal]	Partly	Empowered with EL Tools

3. Knowledge dissemination framework Model [Siva Kumar]	No	Based on knowledge category; needs further development
4. Knowledge Maturing Conceptual Process Model [Maier, Schmidt]	No	Depends on knowledge maturity process; it needs further development
5. InterCog Sense- Making model [Mason]	No	Depends on dimension of knowledge; Need applicability support.
6. KM - EL Adoption model [Islam, Kunifuji]	No	Better KM strategy to enhance EL; needs further development.
7. Dynamic EL Model [Ungaretti, Tillberg Webb]	No	Better EL; needs further development

Each knowledge management phase of E-learning technologiesisto provide improvements. Knowledge management phases with E-Learning enhancements are shown in Figure 1. The knowledge holder can createexplicit knowledge and gather in a knowledge repository or provides his tacit knowledge to each knowledge seeker via socialization.
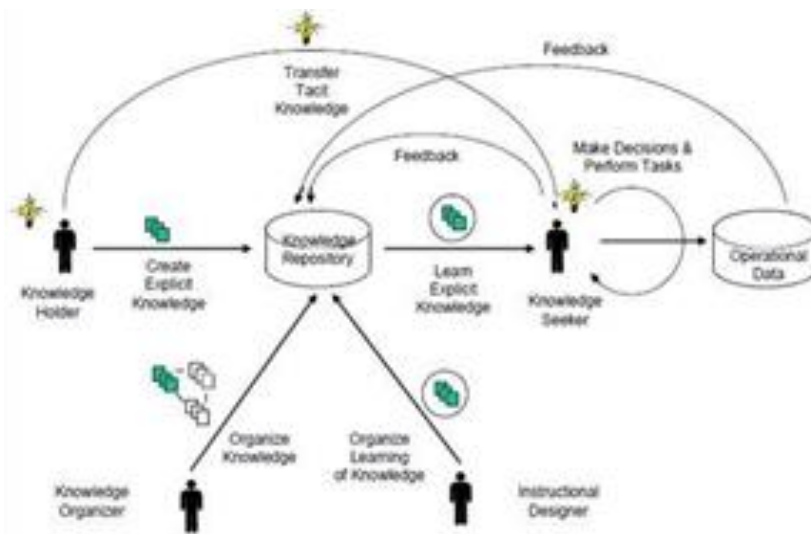
Fig. 1. Knowledge management phases with E-Learning

There is a knowledge organizer, and an instructional designer is a persons or software programs which are used in the Knowledge management phases. The Knowledge Organizer is handled to link knowledge bodies or other improvements. Learning needs knowledge has been prepared by the Instructional Designer to add assessments and assignments. Knowledge Seeker can obtain explicit knowledge to select the knowledge repository.
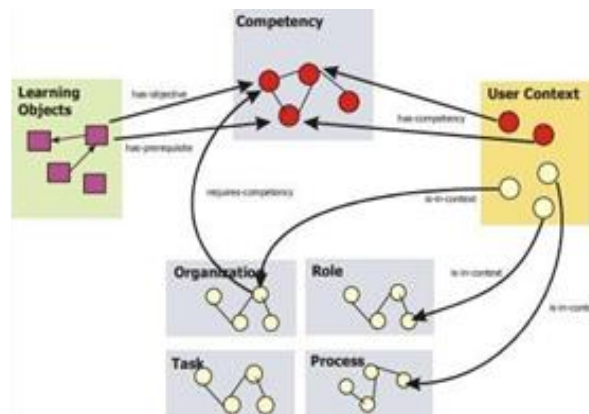
Fig. 2. Semantic glue between the context and learning resource

6.   An Integrated Framework Ofe-Learning System Design For Knowledge Dissemination

The key area of this research is to provide knowledge to an enterprise, and it may be beneficial for those organizations using the E-Learning System.It is mandatory for choosing the appropriate technology, communication types, learning styles, and pedagogical methods. In the Organization, the three types of design are used by E-learning environment development such as technical solution, communication and interaction, and design of training. Eachaspect haslearningmethods andstyles selected according to the need of the organization.

The E-Learning system must support all Nonaka and Takeuchi SECI model knowledge conversion phases so that it meetstheneedsof distributed employees geographically. Different Framework Designs devised for developing a framework for EL proposed from time to time are asfollows,

1.   Web-Based Learning Framework (Badrulkhan, 2001);
2.   The CSALT Networked Learning Model (Peter Goodyear,2001);
3.   The European CANDLEProject;
4.   The UNITE PedagogicalFramework.

Table 2 : Frameworks for designing EL System

Framework or Model	Specifications	Components
Framework for Web-based Learning -2001	Taking into account all aspects of educational system design	Technological, Pedagogical, Ethical, Institutional, Management, Interface Design, Resource Support, and Evaluation

| European CANDLE project-2003	Depends on Rhetorical Structure Theory, Activity Theory	Purpose, Structure, Context, Tools,
CSALT Networked Learning Model (V1.3a)- 2004	Keen observation on collaborative learning –the distinction between activities carried out by the learner and tasks are designed by the tutor	Philosophy, Pedagogy, Strategy, Tactics, Organizational Context
The UNITE Pedagogical Framework- 2009	E-Learning, M-Learning Design, implement and validate a pedagogical frameworkin the secondary schools	Pedagogical context, & approaches, assessment techniques, Current pedagogical practices, FDP

7. Knowledge Maturing Conceptual Process Model

It has been observed that the Knowledge maturing conceptual process model [Maier, Schmidt] is most suited to enterprise, andproposesthe integration of KM and EL based on designing different transitions of knowledge of the varying degree of maturity. This paper is based on conceptual foundations for Service-Oriented Knowledge & Learning Architecture such as Ontology Maturing, Supporting Content, and Process, based on this model there were two goals as follows,

- A personal learningenvironment
- An organizational learning environment

The structure of the knowledge maturing process model and this process is divided into five phases which depend upon the empirical study[Schmidt 2005, Maier and Schmidt2007, Maier 2007]):

☐ **Expressing ideas**. Innovative methods have been developed by individuals from their personal experiences or informaldiscussions.

☐ **Distributing in communities**: This phase emphasizesthe development of basic terminology which isshared with different communitymembers.

☐ **Formalizing. Artifacts:**This phase emphasizes other creation of purpose-driven structured documents such as design documents, project reports,and process models.

☐ **Ad-hoc learning**: This phase emphasizes on refinement for improving the under stability so that it uses with ease or re-use

☐ **Standardization**: This phase emphasizes onindividual learning objects for covering a broader subject area.
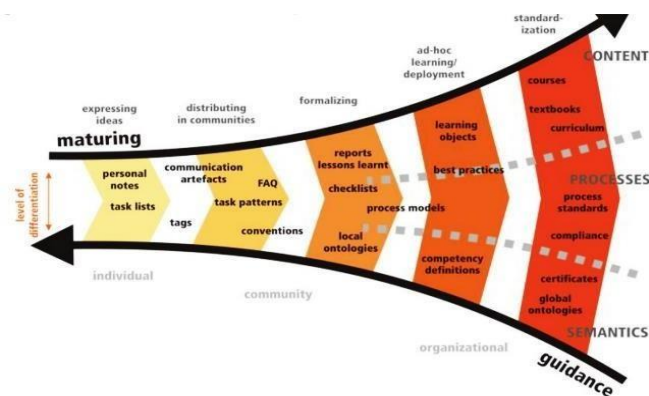
Fig: Knowledge Maturing Process Model

The maturing process is identified for content objects, which provide insightswith drawings and documents.However, it can also use for different types of knowledge representations to operate and develop in any enterprise. [Riss 2005]:

- **Contents:** It provides the best static picture of the world and is probably the best-managed type of knowledge asset.

- **Processes:** A number of giant organizations are already taken an initiative to support this by developing different business process models and workflows.

- **Semantics:** It connects the different assets and supports the individual learning processes depend upon mutual understanding. Without grassroots and semantic integration methods, it is difficult for people to understand the lengthy negotiation process.

It indicates that the following barriers are the successful integration of KM and EL:

Different fundamental approaches.:

Every discipline has its chief goals. Knowledge Management primarily concentrates on organization-level knowledge which is formed by individuals. EL is focused on individual learners while considering the impact on the whole organization. The learning is more focused to achieve some business goals which align with data management, individual learning with explicit knowledge, and externalization of tacit knowledge, etc. These goals allow the organization for developing a systematic approach for knowledge and learning processes. The primary purpose of DLS is used for evaluate measuring the impact on the enterprise produced by KM and EL. In this phase, the organization or learning program is evaluated the learning outcomes. The results may suggest that some improvements are needed in the learning system. In this way, a closed organization's development circle is developed. The primary target of the KM system is based on tacit and explicit knowledge, and how it will be preserved, shared, gathered, and captured.

The learning systems model combines the unique components of KM, EL and AoL. This model is primarily focused on the needs of each institution, individual, and enterprise. Therefore, a multilevel analysis of the learning system is providing knowledge for necessary

changes and improvements in each organization. This model may be effective for educational institutions and business organizations, but the AoL method is considered the best approach in the academic learning environment. However, we need to develop an appropriate approach for business organizations so that this model is demonstrating the KM and EL integration by adding a third element which is the assurance of learning. It is a purely theoretical model and requires practicality.

8. Results And Discussions

All seven well-accepted KM-EL Integration models were analyzed. Only Context-aware Corporate Learning Model [Schmidt] was implemented in the enterprise with fair acceptance by all workforce in a prototype environment. However, it needs help with user context management functionality, which is going to be an adventurous exercise requiring deeper research. Analysis of these models showed that both integration and adoption methods are useful. A number of researchers found that these models are beneficial, but they proposed to use additional components such as context, knowledge maturity level, and assurance of learning which are extremely useful for the integration of KM and EL. The Dynamic learning system model looks it is one of the efficient models for integration on learning as common ground. However, we assured that the learning model is specific to the academic environment and it may yet to be proved that this model is significant for the business environment.

9. Conclusion

The evolution of KM-EL has brought the two disciplines closer, encouraging the development of KM-EL Integration Models. The thorough analysis of various Integration Models put slight on various Integration methodologies and approaches. However, the development of new models is needed for a production environment as all the present modelslackthe necessary application support and technical specification. As a result, specific organizational goals need to be transformed into innovative models which employ different categories of adaption and integration methods. The common method is based on integration which was identified as learning.We think that this review paper provides general information for those enterprises wanting to employ the KM-EL model in a proper way.

References

[1] Liebowitz J, Frank MS. The Synergy between Knowledge Management and E-Learning. In: Liebowitz J, Frank MS, eds. Knowledge management and E- learning. Innovations in education and teaching internationally. CRC Press;2011:3-10.

[2] Benmahamed D, Ermine J-L, Tchounikine P. From MASK Knowledge Management Methodology to Learning Activities Described with IMS – LD. In: Althoff K-D, Dengel A, Bergmann R, Nick M, Roth- Berghofer T, eds. Professional KnowledgeManagement SE - 20.Vol3782.

[3] Lecture Notes in Computer Science. Springer Berlin Heidelberg; 2005:165-175.doi:10.1007/11590019_20.

[4] Brown JS, Collins A, Duguid P. Situated Cognitionand the Culture of Learning. Yazdan M, Lawler RW, eds. Educ Res. 1989;18(1):32-42.doi:10.2307/1176008.

[5] Brusilovsky P, Vassileva J. Course sequencing techniques for large-scale web-based education. Int J Contin Eng Educ Lifelong Learn.2003;13(1-2):75-94.Available at: http://www.scopus.com/inward/record.url?eid=2-s2.0-0037899573&partnerID=40&md5=d161cc0075c80816a 0c4693267c49b9a.

[6] Dunn P, Iliff M. Learning Light At Cross PurposesWhy e-learning and knowledge management don't get along. 2005:14. Available at:http://www.learninglight.eu/Register1/LearningLight E-learning andKnowledgeManagement.pdf.

[7] Maier R, Schmidt A. Characterizing knowledge maturing: A conceptual process model for integrating e- learning andknowledge-

[8] management. In: 4th Conference on Professional Knowledge Management. Experiences and Visions. Berlin: GITO-Verlag; 2007:325 - 333.Available at: http://publications.professional-learning.eu/Maier_Schmidt_KnowledgeMaturing_WM0 7.pdf. Accessed June 5,2013.

[9] Schmidt A. Bridging the gap between knowledge management and e-learning with context-aware corporate learning. In: Professional knowledge management. Third Biennial Conference, WM 2005, Kaiserslautern, Germany, April 10-13, 2005, Revised Selected Papers.Vol3782.

[10] Springer Berlin Heidelberg; 2005:203-213. doi:10.1007/11590019_23.Yacci M. The Promise of Automated Interactivity. In: Althoff K-D, Dengel A, Bergmann R, Nick M, Roth- Berghofer T, eds. Professional Knowledge Management SE - 24.Vol 3782. Lecture Notes in Computer Science. Springer Berlin Heidelberg; 2005:214-221. doi:10.1007/11590019_24.

[11] Sammour G, Schreurs J. The role of knowledge managementande-learninginprofessionaldevelopment. Knowl Learn. 2008;4(5):465-477.Availableat:http://inderscience.metapress.com/index/K072147148 7761P2.pdf. Accessed June 7,2013.

[12] Islam M, Kunifuji S. Adopting Knowledge Management in an E-Learning System: Insights and Views of KMandEL ResearchScholars.

[13]Knowl Manag E-Learning. 2011;3(3):375-398. Available at:http://kmel-journal.org/ojs/index.php/online- publication/article/viewArticle/126.Accessed March 19, 2013.

[14] Yordanova K. Integration of Knowledge management and E-learning – common features. CompSysTech 07 Proc 2007 Int Conf Comput Syst Technol. 2007;1:1-6. Available

at:http://portal.acm.org/citation.cfm?id=1330598.1330697.

[15] Woelk D, Agarwal S. Integration of e-Learning and Knowledge Management. In: World Conference on E- Learning in Corporate, Government, Healthcare, and Higher Education.Vol 2002.; 2002:1035-1042.Available at: http://www.editlib.org/p/15338/. Accessed June 13, 2013.

[16] Sivakumar SC. E-Learning for Knowledge Dissemination. In: Schwartz D, ed. Encyclopedia of knowledge management. Idea Group;2006:152-160.

[17] Mason J. A Model for Exploring a Broad Ecology of Learning and Knowing. In: Supplementary Proceedings of the 16th International Conference on Computers in Education, Asia-Pacific Society for Computers in Education (APSCE). Taipei; 2008:194-203. Available at:http://citeseerx.ist.psu.edu/viewdoc/download?doi=10 .1.1.153.9871&rep=rep1&type=pdf#page=203. Accessed June 5, 2013.

[18] Ungaretti AS, Tillberg-Webb HK. Assurance of Learning: Demonstrating the Organizational Impact of Knowledge Management and ELearning. In: Liebowitz J, Frank MS, eds. Knowledge management and E- learning. Innovations in education and teaching international.CRC Press;2011:41-60.

[19] Nonaka I, Takeuchi H. The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation. New York: Oxford University Press, USA; 1995:304.

[20] Maier R. Knowledge Management Systems:Information and Communication Technologies for Knowledge Management. 2nd ed. Berlin: Springer Berlin Heidelberg; 2004:635.Available at:http://books.google.lv/books?id=IQD8JCxsEyEC&printsec=frontcover&dq=inaut hor:"Ronald+Maier"&hl=lv&sa=X&ei=URuwUcGZCsbe4