THE MANAGEMENT OF KNOWLEDGE THROUGH OPEN SOURCE LCMS PLATFORMS

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ABSTRACT. In a dynamic society, focused on knowledge, knowledge management is linked with the leadership concept and the open source platform concept. Leadership is more intense and comprehensive thanks to knowledge, innovation and the ability of managers to use these platforms in their work. Complementary solution to classic learning, open source platforms are characterized by accessibility, ease of use and effective communication. The courses designed as modules are accessible anytime, anywhere, and the assessment of each student's performance is visible. Thus, economic considerations and the development of Web technologies justify the adoption of open source platforms in the knowledge management process.

Introduction

Nowadays, knowledge management is seen as one of the most important ways of running an organization. It is a very effective tool, that improves the productivity and performance in an era in which, if you’re not creative and innovative, you are no longer on the market. We can easily say that knowledge management is a process of acquisition, validation, utilization, sharing, storage and diffusion of knowledge. In recent years, knowledge management has gained dramatically importance within organizations. The need to constantly learn and innovate, globalizations, rapid change (making knowledge obsolete faster), downsizing, turnover, information overload, and the
need to share best practices - practices that have produced outstanding results in another situation (O’Dell, Carla, Jackson Grayson, 1998) - have been significant factors in this growth. Being able to effectively manage knowledge within an organization can yield great benefits, including the achievement of competitive advantage (Pearlson, 2001).

Although it seems not probable, many organizations have not yet implemented knowledge management in their strategic vision, mission and goals. Some organizations have articulated knowledge management, however, in an unsustainable way. One of the reasons is the limitation of leadership in accessing knowledge and the sources of knowledge (Salo, 2009).

Leadership facilitates the process of knowledge acquisition, audit, utilization, sharing, storage and diffusion. Leadership facilitates learning process in the organization. The main challenge many organizations face in taking leading roles in implementing knowledge management in the organizations is on how to learn and struggle in sustaining this practice (Wick, 2000).

Leadership has a central role in the management process within the organization. In the same time, knowledge management sustainability has many implications for leadership in the organization. Some of those implications are that knowledge management acts as a driving force for leaders in designing vision and mission in the organization, improving good governance, creating a conducive environment for knowledge management initiatives, empowering, creating knowledge management system and open to change (Salo, 2009). Leaders need these approaches for managing knowledge in the organization in a sustainable way and to remain competitive in this knowledge era. This way, the relationship between knowledge management, learning and leadership is a real and necessary one. Knowledge and its management are the outcomes of learning process in the organization. The results of these relationships are new changes, knowledge and innovation (Nonaka, 1991).

According to John Kotter, there are eight steps to transform an organization through leadership. These steps are:
1. Establish a sense of urgency
2. Form a powerful guiding coalition
3. Create a vision
4. Communicate the vision
5. Empower others to act on the vision
6. Plan and create short-term wins
7. Consolidate improvements and produce still more change
8. Institutionalize new approaches (Kotter, 1996)

Leadership and Knowledge Management (KM) combine the vision and influence of leadership with the available knowledge base within the organization. When effective leadership elicits and draws upon the myriads of experience, wisdom, understanding, and knowledge inherent in the work force in synergistic fashion creating shared vision, the organization sits like a space shuttle ready begging for launch. In the context of a rapidly changing world and an increasingly competitive marketplace, successful organizations of today and tomorrow must harness and align all its potential and knowledge.

At organizations’ level the knowledge management refers to organizational practices and different approaches to be considered for solving problems relating to technology and organizational management.

In terms of IT field, the knowledge management (KM) is the management of information and requires efficient implementation of a KM system.

In terms of human resources, KM intends to motivate employees to participate actively in updating of their knowledge bases, transforming intangible resources (implicit knowledge) in tangible resources (explicit knowledge), using and reusing these resources in order to increase competitiveness of the organization.

The knowledge transfer from the individual and groups level to the economic organization is based on individual and collective learning, ensuring thus the organizational learning. For an economic organization, the knowledge management is a process of creation, maintenance and building of knowledge within the organization, for their use, in a manner that ensures the creation of business value and generates competitive advantage.

**Knowledge management systems**

The definition of e-learning solutions for knowledge management involves: analysis of instructional needs, the general architecture of a modular educational system, specific issues for designing a system with instructional modules reusable educational and developing instructional design model for KM system.
The stages to define specifications for achieving model’s components are: defining the educational strategies used to learning management system (LMS) for the KM system, defining the structure of reusable learning objects and performance specifications statement for describing the format of module instructional.

The analysis phase involves the instructional needs based on objectives which will develop goals of instructional process. This phase will determine the characteristics of the learning environment and education, providing an analysis of knowledge requirements.

During the design phase are highlighted instructional strategies. Then will be selected and developed the educational materials. During the implementation is applied instructional model provided in design phase.

The formative and summative assessments provide the necessary inputs for phases which determining the changes initial model.

The knowledge management systems are a specific type of technological system designed to manage the functional integration of distributed components of hardware, software and network components into a functional whole; that supports production processes, acquisition and transfer of knowledge within an organization.

To be efficient, a knowledge management system must allow all employees the access to the knowledge base, to be integrated with business processes and to consider the organizational culture.

KM services are distributed services that support important areas of KM in virtual organizations: knowledge acquisition, knowledge storing, knowledge creation, distribution (dissemination) of knowledge, knowledge sharing and using knowledge.

The tools within a knowledge management system (KMS) have capabilities to: develop deposits of knowledge, development of neural systems, data and text mining. The first stage of implementing a KMS in a virtual organization shall be conducted within the organizational intranet.

The tools of knowledge management systems are involved in all major areas of KM in virtual organizations: purchasing, storing, creation, distribution, sharing and using knowledge.

The technology, which has led to distributed application development, is XML (Extensible Markup Language). XML functionalities are two of types: those that increase the degree of control over the presentation of documents on Web and those which explaining
the standards of information exchange that are structured for further processing.

Java isn’t used only as a programming language, but as a distributed technology. Software objects written in Java can communicate with other applications, WWW server via HTTP protocol, server CORBA (Common Object Request Broker Architecture) by protocol IIOP (Internet Inter-ORB Protocol), communication can be achieved by JDBC (Java Database Connectivity) – for access to relational databases or RMI (Remote Method Invocation), for implementation of distributed services.

**Facilities offered by LCMS platforms**

A learning content management system (LCMS – Learning Content Management System) allows to store, to manage and to reuse educational content, integrating the functionality of a database.

In Web-based training, the learning content management systems have a crucial role in building a common and centralized repository of learning content, thus making indexing, organization, classification, deployment and searching learning opportunities that can be physically located on different servers, thereby reducing costs and time by reusing content and reduce redundancy.

An LCMS is a multi-user environment, in which can be created, stored, reused, managed and sent digital educational content using a centralized repository of educational objects.

Successful integration of an LMS and LCMS (figure 1) requires an open and interoperable approach, the design complies with standard specifications for content metadata, packaging and communication. In such a solution, using standard formats for import/export of learning objects enables the creation and sharing of various tools and warehouse educational objects.

A LCMS learning platform offers a range of facilities, namely:
- Learning content creation tools;
- Flexible training delivery and design;
- Support for reusable learning objects;
- Administrative applications;
- Integration into business environments through strategies ERP (Enterprise Resource Planning), including support for planning, production, sales and marketing;
- Collaboration and communication functions;
- Corporate-level security;
- Facilities for migrating content;
- Various other processes implemented automatically.

One of the most used open source e-learning platform is Moodle (Modular Object Oriented Dynamic Learning Environment), dynamic training platform developed multi-modular in object-oriented environment. This is a course management system (Course Management System – CMS), designed to allow the quality of online courses and coordinating the results of learners. Often these systems are found as the LMS (Learning Management Systems) or LCMS (Learning Content Management Systems. Moodle runs without modification on Unix, Linux, Windows, Mac OS X and any system that supports PHP, including most Web providers. Information is stored in a single database: MySQL and PostgreSQL are best supported, but can be used with Oracle, Access, Interbase, ODBC and others.

ATutor open source platform, compatible W3C, allows maximum compatibility and communication with other e-learning platforms. There are different modules that can be installed in ATutor, and the purpose of these modules is to bring more functionality, and custom application platform as required.

Other open source LCMS platforms that can be used to transmit knowledge are: Claroline or Sakai Project.
Web services are new paradigm of Internet application development. This technology makes the transition from classical client-server applications to distributed applications, involving communication between multiple servers to solve a specific problem. Thus, the processes are modularized; each server is dedicated for a specific functionality.

Current web programming standards evolve towards a base of encapsulated software objects, with standardized information exchange opportunities.

In an innovative and efficient approach from cost point of view, KM systems architecture is based on: modularity and integration, configuration and customization, security, adaptability and availability. The modules of architectural structure are developed as an integrated collection of Web services that allow users flexible access to relevant knowledge resources of the system.

Learning progress and the results in real time are available in customized formats for all active persons of learning platform.

Conclusions

In the knowledge society, the web-based training is certainly an evolving phenomenon, so more institutions manifest their interest in this type of training.

The reusable learning objects architecture, methodology and the access path taken should support the organizations goals and determine their widespread use.

To be efficient, a knowledge management system should allow all members’ access to the virtual community of knowledge, to be integrated with business processes and consider the organizational culture.

REFERENCES


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