Chapter 1.19
A Survey of Internet Support for Knowledge Management/ Organizational Memory Systems

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ABSTRACT

Studies of organizational memory/ knowledge management, OM/KM, systems have found that using a common infrastructure to facilitate access to and utilization of knowledge and memory increases the usability and success of these systems. The solution to this is for organizations to have an integrated network. This paper discusses using the Internet as the integrated network. Several systems are described that use the Internet for the OM/KM infrastructure. Theoretical support from case study research for using the Internet as a common knowledge infrastructure is provided through DeLone and McLean's IS Success Model modified and analyzed for knowledge/memory based systems.

INTRODUCTION

Organizations are building and maintaining systems for managing organizational knowledge and memory. Users of these systems may not be at the same location. In many cases, they are distributed across large geographical distances and multiple offices. Key to this task is developing an infrastructure that facilitates distributed access and utilization of the retained knowledge and memory. Connectivity and easy-to-use interfaces are main concerns. Jennex (2000) found that using the Internet as a common communications platform (either as an Intranet or an Extranet) and web browsers as an interface is a viable, low cost solution. Newell et al. (1999) found that Intranets not only supported distributed knowledge processes, but also enhanced users' abilities to capture and control knowledge. Stenmark (2002) proposes that using a multiple perspective of the Internet—information, awareness, and communication—allows developers to build successful Internet-based Knowledge Management Systems, KMS. The purpose of this paper is to illustrate how the Internet can be effectively used as an infrastructure for Knowledge Management/ Organizational Memory Systems, KMS/OMS. This is based on an intensive analysis of a KMS/OMS, an action research study of a KMS, and a literature

review of KMS/OMS studies. For simplicity, this paper assumes that knowledge is a subset of Organizational Memory, OM, and the term OMS includes KMS, however, the term KMS will be used to generically refer to a KMS/OMS. This relationship will be illustrated later.

The paper begins by defining concepts used in the paper. This is followed by a discussion on the two types of KMS and the presentation of an assessment model based on DeLone and McLean's (1992) IS Success Model. The presented assessment model is used to assess the success of Internet-based KMS. This is followed by a discussion on enabling factors for a KMS and other tools and research for building an Internet-based KMS. This culminates in the presentation of examples of Internet-based KMS's followed by conclusions and limitations.

BACKGROUND

Organizational Learning

Organizational Learning, OL, is identified as a quantifiable improvement in activities, increased available knowledge for decision-making, or sustainable competitive advantage (Cavaleri, 1994; Dodgson, 1993; Easterby-Smith, 1997; Miller, 1996). Another definition refers to OL as the process of detection and correction of errors, Malhotra (1996). In this view, organizations learn through individuals acting as agents for them. Individual learning activities are seen as being facilitated or inhibited by an ecological system of factors that may be called an organizational learning system. Learning in this perspective is based on Kolb's (1984) model of experiential learning, where individuals learn by doing.

An organization can also learn if, through its processing of information, its potential behaviors are changed, Huber et al. (1998). This incorporates the concept of OM into OL (Huysman et al., 1994; Walsh, Ungson, 1991). In this view, OM is the process by which experience is used to modify current and future actions.

Organizational Memory and Knowledge

Organizational Memory is variously viewed as abstract or unstructured concepts and information that can be partially represented by concrete/physical memory aids, such as databases, and as concrete or structured concepts and information that can be exactly represented by computerized records and files. This paper views OM as a combination of abstract and concrete, where the concrete is the history and trend data collected in the memory and the abstract is the experience gained by the organizational member over time. Definitions by Stein and Zwass (1995) and Walsh and Ungson (1991) support this. Additionally, all agree that OM can include everything within the organization that is retrievable, including the set of documents and artifacts that forms the corporate record and the collection of shared and stored understandings and beliefs that forms the basis for organizational sense-making and social construction of reality.

OM has two principle goals: to integrate information across organizational boundaries and to control current activities and, thus, avoid past mistakes. OM functions are perception, acquisition, abstraction, recording, storage, retrieval, interpretation, and transmission of organizational knowledge (Stein, Zwass, 1995). OM retention facilities are individuals, transformations, structure, ecology, and culture (Walsh, Ungson, 1991).

Davenport and Prusak (1998) view knowledge as an evolving mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. They found that in organizations knowledge often becomes embedded in documents or repositories and in the organizational routines, processes, practices, and norms. Nonaka (1995) expands this definition by

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