

Chapter 7.15

Secure Knowledge Management

S. Upadhyaya

University at Buffalo, USA

H. Raghav Rao

University at Buffalo, USA

G. Padmanabhan

GE Transportation Systems, USA

INTRODUCTION

As the world is getting more and more technology savvy, the collection and distribution of information and knowledge need special attention. Progress has been made on the languages and tools needed for effective knowledge management and on the legal issues concerning the consumption and dissemination of critical knowledge. From a business perspective, a knowledge-management system (KMS) within a firm generally strives to maximize the human-capital utilization and profitability of the firm. However, security is becoming a major issue revolving around KMS; for instance, the KMS must incorporate adequate security features to prevent any unauthorized access or unauthorized dissemination of information. Ac-

quiring the information that one needs to remain competitive while safeguarding the information one already has is a complicated task. Firms must balance the advantages of openness against its inevitable risks, and maximize the efficiency of electronic communication without making it a magnet for intruders. One must integrate offense and defense into a comprehensive strategy, and scholars have suggested that it is time to integrate intelligence and security imperatives with other knowledge-management strategies and processes (Barth, 2001).

Since the widely reported attacks on knowledge repositories in 2001 (e.g., Amazon was hit by denial-of-service attacks and the NIMDA virus hit financial markets), many organizations, especially the U.S. government, have increased

Secure Knowledge Management

their concern about KMSs. With the advent of intranets and Web access, it is even more crucial to protect critical corporate knowledge as numerous individuals now have access to the assets of a corporation. Therefore, we need effective mechanisms for securing data, information, and knowledge as well as the applications (Thuraisingham, 2003, 2004).

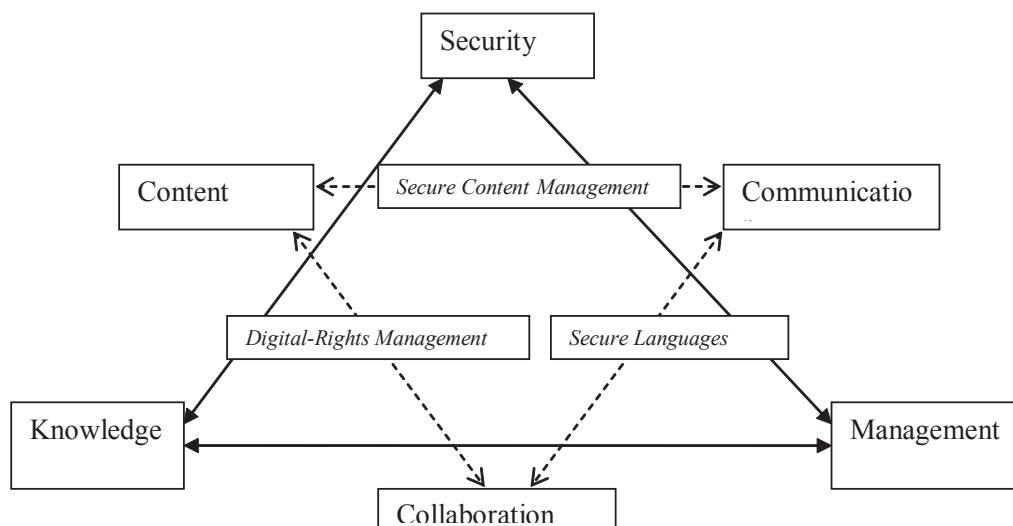
Security methods for knowledge-management systems may include authentication or passwords, cryptography programs, intrusion-detection systems, or access-control systems. Issues include insider threat (protecting from malicious insiders), infrastructure protection (securing against subversion attacks), and establishing correct policies, refinement, and enforcement. KMS content is much more sensitive than raw data stored in databases, and issues of privacy also become important (Thuraisingham, Chadwick, Olivier, Samarati, & Sharpston, 2002).

Asllani and Luthans (2003) surveyed over 300 knowledge managers about their job roles and found little or no evidence of security issues being considered in their jobs; their primary role was focused on communication within the organization. This article about secure knowledge management raises a number of issues in this critical area of research that need to be tackled by knowledge-management practitioners. The following sections focus on three important aspects of secure knowledge management: secure languages, digital-rights management (DRM), and secure content management (SCM).

BACKGROUND

A firm exists as a repository of knowledge over time (Zander & Kogut, 1995). Knowledge management is the methodology for systematically

Figure 1. A framework for secure knowledge-management systems



7 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/secure-knowledge-management/25324

Related Content

An Analysis of Student Performance in a Digital Electronics Design Course

Maria Vargas-Vera (2018). *Enhancing Knowledge Discovery and Innovation in the Digital Era* (pp. 107-125). www.irma-international.org/chapter/an-analysis-of-student-performance-in-a-digital-electronics-design-course/196507

Research on the Improvement Mechanism of College Foreign Language Teachers' Intellectual Education Literacy Under AI Empowerment

Ling Yu (2026). *International Journal of Knowledge Management* (pp. 1-17). www.irma-international.org/article/research-on-the-improvement-mechanism-of-college-foreign-language-teachers-intellectual-education-literacy-under-ai-empowerment/407406

Innovation and Its Role in Management

(2019). *Knowledge Management and Innovation in Network Organizations: Emerging Research and Opportunities* (pp. 26-54). www.irma-international.org/chapter/innovation-and-its-role-in-management/207458

AI-Based Solution for Sustainability Tracing for Companies

Galena Pisoniand Bálint Molnár (2024). *International Journal of Knowledge Management* (pp. 1-17). www.irma-international.org/article/ai-based-solution-for-sustainability-tracing-for-companies/340723

Examining Voluntary Engagement Barriers in Knowledge Sharing Practices for Supply Chain Innovation

Muhammad Fahad Anwar, Wai Peng Wongand Ming-Lang Tseng (2022). *International Journal of Knowledge Management* (pp. 1-23). www.irma-international.org/article/examining-voluntary-engagement-barriers-in-knowledge-sharing-practices-for-supply-chain-innovation/291099