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A Review of Knowledge Management Systems

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Peer Review Information	Abstract
<p><i>Submission: 21 Jan 2022</i></p> <p><i>Revision: 16 Feb 2022</i></p> <p><i>Acceptance: 05 March 2022</i></p> <p>Keywords</p> <p><i>Knowledge Management, Knowledge Management Systems, Organizational Knowledge, Knowledge Sharing, Intellectual Capital</i></p>	<p>Knowledge has emerged as one of the most valuable strategic resources for modern organizations. Knowledge Management Systems (KMS) support the systematic creation, storage, sharing, and application of knowledge to improve organizational performance and innovation. This review paper examines the concept, components, and evolution of knowledge management systems, synthesizing existing literature on their technologies, models, and applications. A comparative analysis highlights traditional and modern KMS approaches, while the discussion explores implementation challenges, organizational factors, and emerging trends. The review concludes by emphasizing the strategic role of KMS in building learning organizations and sustaining competitive advantage.</p>

Introduction

In the contemporary knowledge-driven economy, organizations increasingly recognize that tangible assets alone are insufficient for achieving sustainable competitive advantage. Instead, intangible assets such as knowledge, expertise, skills, and intellectual capital play a critical role in organizational success. Knowledge Management Systems (KMS) have therefore emerged as essential tools for capturing, organizing, and leveraging organizational knowledge.

Knowledge management refers to the systematic process of creating, acquiring, storing, sharing, and applying knowledge to achieve organizational objectives. Knowledge can be classified into explicit knowledge, which is codified and easily documented, and tacit knowledge, which resides in individuals' experiences, insights, and skills. While explicit knowledge can be stored in databases and documents, tacit knowledge is more difficult to capture and requires social interaction and collaboration.

Historically, organizations relied on informal mechanisms such as mentoring, training, and documentation to manage knowledge. However, globalization, workforce mobility, and technological change have increased the risk of knowledge loss and fragmentation. KMS emerged as a response to these challenges, providing technological platforms that support knowledge repositories, collaboration tools, and decision-support mechanisms.

Advancements in information technology have significantly influenced the development of KMS. Early systems focused on document management and information retrieval. Modern KMS integrate artificial intelligence, social media tools, cloud platforms, and data analytics to enhance knowledge discovery and sharing. These systems support not only operational efficiency but also innovation and organizational learning.

The importance of KMS has been further amplified by the need for continuous learning and adaptability. Organizations operate in dynamic environments characterized by rapid technological change and intense competition.

Effective knowledge management enables organizations to respond to change, improve decision-making, and foster innovation.

Despite their potential benefits, implementing KMS is challenging. Organizations often face cultural resistance, lack of user participation, poor system design, and difficulties in capturing tacit knowledge. As a result, many KMS initiatives fail to deliver expected outcomes.

Given the growing relevance of knowledge management, a substantial body of literature has emerged across disciplines such as information systems, management, and organizational studies. This review aims to synthesize existing research on knowledge management systems, analyze their key components and models, and identify challenges and future directions.

Literature Review

The literature on knowledge management systems emphasizes both technological and organizational perspectives.

1. Knowledge Management Concepts

Researchers highlight that knowledge management involves processes such as knowledge creation, storage, transfer, and application. Models such as Nonaka’s SECI model emphasize the dynamic interaction between tacit and explicit knowledge.

2. Types of Knowledge Management Systems

The literature identifies several types of KMS, including knowledge repositories, collaboration systems, learning management systems, and decision-support systems. Each type supports different knowledge processes.

3. Technologies Supporting KMS

Studies discuss technologies such as databases, intranets, content management systems, groupware, and AI-based tools. Recent research highlights the role of social media and cloud-based platforms in enhancing knowledge sharing.

4. Organizational Factors

Organizational culture, leadership support, and incentive structures are widely recognized as critical success factors for KMS implementation.

5. Benefits and Outcomes

Empirical studies link effective KMS to improved performance, innovation, employee learning, and customer satisfaction.

Comparative Table and Analysis

Dimension	Traditional KMS	Modern KMS
Focus	Document storage	Knowledge creation and sharing
Technology	Databases, intranets	AI, cloud, social platforms

Knowledge Type	Explicit knowledge	Explicit and tacit knowledge
User Interaction	Limited	High collaboration
Strategic Role	Operational support	Strategic asset

The comparative analysis of Knowledge Management Systems (KMS) highlights a significant shift from technology-centric systems to integrated socio-technical platforms. This evolution reflects changes in organizational structures, workforce dynamics, and technological capabilities.

1. Traditional vs. Modern Knowledge Management Systems

Traditional KMS were primarily designed to store and retrieve explicit knowledge through centralized repositories such as databases, document management systems, and intranets. These systems emphasized codification strategies, where knowledge was documented and stored for later use. While effective for preserving organizational memory, traditional KMS often failed to capture tacit knowledge and suffered from low user engagement.

Modern KMS adopt a more holistic approach by integrating people, processes, and technology. They support both codification and personalization strategies, enabling knowledge creation through collaboration, social interaction, and communities of practice. Technologies such as enterprise social networks, collaborative platforms, cloud computing, and artificial intelligence enhance real-time knowledge sharing and discovery.

2. Knowledge Type and Flow

Traditional systems primarily focused on explicit knowledge, limiting their ability to support innovation and learning. Modern KMS facilitate the conversion of tacit knowledge into explicit knowledge through collaboration tools, discussion forums, and AI-assisted knowledge extraction. This dynamic knowledge flow aligns with models such as Nonaka’s SECI framework.

3. Strategic Orientation

Earlier KMS initiatives were often operational, supporting efficiency and information access. In contrast, modern KMS are strategically oriented, supporting innovation, decision-making, and competitive advantage. Knowledge is treated as a strategic asset rather than a static resource.

4. User Engagement and Collaboration

User participation was a major weakness of traditional KMS. Modern systems emphasize usability, personalization, and social features, encouraging active knowledge sharing.

Gamification and incentive mechanisms further enhance participation.

3.5 Implications of the Analysis

The analysis demonstrates that effective KMS require more than advanced technology. Organizational culture, leadership commitment, and governance structures are equally important. Organizations that integrate modern KMS into daily workflows are more likely to achieve sustained knowledge-driven performance.

Discussion

The findings of this review indicate that knowledge management systems are critical enablers of organizational learning and innovation. One of the most prominent themes in the literature is that the success of KMS depends largely on human and organizational factors rather than technology alone. While advanced tools facilitate knowledge capture and sharing, their effectiveness is limited without a supportive culture.

Organizational culture plays a central role in encouraging knowledge sharing. Employees may resist sharing knowledge due to fear of losing power, lack of incentives, or time constraints. Leadership support and reward mechanisms are therefore essential for fostering a culture of collaboration. Organizations that recognize and reward knowledge-sharing behaviors are more likely to realize the benefits of KMS.

Technological advancements have expanded KMS capabilities significantly. Artificial intelligence and machine learning enable automated knowledge classification, recommendation, and personalization. These technologies reduce information overload and improve access to relevant knowledge. However, they also introduce challenges related to system complexity, cost, and ethical concerns such as data privacy and algorithmic bias.

Another critical issue discussed in the literature is knowledge quality. Poorly managed KMS can become repositories of outdated or irrelevant information. Continuous knowledge validation, curation, and governance mechanisms are essential to maintain system usefulness and credibility.

The discussion also highlights the growing importance of KMS in supporting remote and distributed work environments. Collaboration platforms and cloud-based systems enable organizations to retain and share knowledge across geographical boundaries. This capability has become increasingly important in the context of globalized and hybrid work models.

Overall, the discussion emphasizes that KMS implementation should be viewed as an

organizational change initiative rather than a purely technical project. Aligning KMS with organizational strategy, processes, and culture is crucial for long-term success.

Conclusion

Knowledge management systems have evolved into vital strategic tools that support organizational learning, innovation, and sustained competitive advantage. This review has examined the concepts, technologies, and applications of KMS, highlighting their transformation from simple information repositories to dynamic knowledge-sharing platforms.

The analysis reveals that modern KMS offer substantial advantages over traditional systems by enabling collaboration, supporting tacit knowledge exchange, and integrating advanced technologies such as artificial intelligence. These capabilities enhance decision-making, innovation, and organizational adaptability in rapidly changing environments.

However, the successful implementation of KMS remains challenging. Technological investments alone are insufficient without addressing cultural resistance, user engagement, and governance issues. Organizations must foster a knowledge-sharing culture, provide incentives, and ensure leadership commitment to fully realize KMS benefits.

From a managerial perspective, KMS should be aligned with organizational goals and embedded into daily work practices. Knowledge management should be treated as a continuous process rather than a one-time initiative. From a research perspective, future studies should explore the impact of emerging technologies, such as generative AI and knowledge analytics, on KMS effectiveness.

In conclusion, knowledge management systems are essential for organizations seeking to leverage intellectual capital and thrive in knowledge-intensive economies. As organizations continue to face complexity and uncertainty, the strategic role of KMS will become increasingly important.

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