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STRATEGIES FOR IMPROVING THE ELECTRONIC DOCUMENT MANAGEMENT SYSTEM IN THE DIGITAL ECONOMY

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Abstract. In the era of digital transformation, electronic document management systems (EDMS) play a crucial role in ensuring efficient, transparent, and secure information handling within organizations. As paper-based workflows are replaced by digital processes, there is a growing need for EDMS solutions that are flexible, integrated, and secure. However, many organizations still face challenges such as poor system integration, cybersecurity risks, and difficulties in ensuring regulatory compliance.

This article explores strategies for improving EDMS in the context of the digital economy, including automation through artificial intelligence, migration to cloud platforms, stronger cybersecurity, and enhanced system interoperability. It also emphasizes the importance of user-centered design and legal compliance for successful implementation. By adopting these strategies, organizations can significantly enhance the performance of their document management systems and accelerate their digital transformation journey.

Keywords: Digital economy, electronic document management system (EDMS), digital transformation, workflow automation, cloud computing, cybersecurity, interoperability, regulatory compliance, information governance, artificial intelligence.

Introduction

In recent years, the global shift towards a digital economy has fundamentally changed the operational models of organizations across both the public and private sectors. As digital technologies become more deeply embedded in business processes, the need for efficient, transparent, and secure information management systems has grown exponentially. At the heart of this transformation lies the electronic document management system (EDMS), a crucial digital infrastructure that enables the storage, retrieval, sharing, and archiving of documents in an organized and accessible manner.

Traditional, paper-based document management practices are increasingly seen as inefficient, time-consuming, and prone to human error. In contrast, EDMS offers a streamlined, automated approach that enhances workflow efficiency, reduces administrative costs, supports remote work environments, and ensures greater regulatory compliance. Moreover, the growing demand for real-time access to information, cross-platform collaboration, and secure data sharing has made the implementation of a robust

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EDMS a strategic priority for organizations seeking to remain competitive in a rapidly evolving digital landscape.

However, the implementation and optimization of EDMS are not without challenges. Many institutions face issues related to system fragmentation, lack of integration with other enterprise applications (such as ERP, CRM, or HRM systems), weak cybersecurity frameworks, poor user interface design, and insufficient training for staff. Additionally, maintaining compliance with international regulations such as the General Data Protection Regulation (GDPR) or local information laws adds further complexity to EDMS deployment and use.

In this context, there is a critical need to develop and adopt comprehensive strategies for improving the design, functionality, and effectiveness of electronic document management systems. Such strategies should focus on leveraging advanced technologies like artificial intelligence (AI), machine learning, and cloud computing; strengthening cybersecurity measures; promoting interoperability and scalability; and adopting a user-centered approach to system design and implementation.

This paper aims to explore these strategic directions in detail, providing both a theoretical framework and practical recommendations for enhancing EDMS in the context of the digital economy. By doing so, the article contributes to the broader discourse on digital transformation and offers actionable insights for policymakers, IT managers, and organizational leaders committed to modernizing their document management infrastructure.

Literature review

The development and implementation of electronic document management systems (EDMS) have been the focus of numerous academic and industry studies, particularly within the context of digital transformation and the evolving needs of modern organizations. Early research in the field emphasized the benefits of transitioning from paper-based systems to digital platforms, highlighting increased efficiency, reduced storage costs, and improved access to information (Davenport & Short, 1990)[1].

More recent literature reflects the growing complexity of EDMS in the digital economy. According to Alalwan et al. (2017)[2], the successful adoption of EDMS is significantly influenced by organizational readiness, user competence, and the availability of technological infrastructure. These factors, they argue, are crucial for achieving system integration, user acceptance, and sustainability in document workflows.

Another key theme in the literature is the role of cloud computing in enhancing EDMS. Cloud-based systems offer scalability, lower upfront costs, and support for remote

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access—features that are particularly relevant in the post-pandemic era (Marston et al., 2011)[3]. However, several scholars, such as Chou and Chiang (2013)[4], point out that cloud adoption also raises concerns related to data privacy, vendor lock-in, and system security.

Cybersecurity is another widely discussed topic in relation to EDMS. As organizations increasingly rely on digital systems to store sensitive information, the risks associated with unauthorized access, data breaches, and cyberattacks have become more prominent (Smith et al., 2019)[5]. Researchers recommend that EDMS include robust encryption protocols, access control mechanisms, and compliance with standards such as ISO/IEC 27001 to mitigate these risks.

Artificial intelligence and machine learning are emerging as transformative technologies in the document management domain. According to Katuu (2020)[6], AI can improve EDMS functionality through intelligent document classification, automatic metadata generation, and predictive search capabilities. These innovations contribute not only to efficiency but also to the accuracy and relevance of document retrieval.

The literature also emphasizes the importance of user-centered design and change management in EDMS implementation. Studies by Davis (1989)[7] and Venkatesh et al. (2003)[8] underline the need to consider user attitudes, training, and perceived ease of use when deploying new systems. Without sufficient focus on the human element, even the most advanced EDMS can fail to achieve desired outcomes.

In summary, the literature suggests that effective EDMS improvement strategies must address technological, organizational, and human factors simultaneously. By combining modern technologies with strategic planning and stakeholder engagement, organizations can create dynamic, secure, and scalable document management systems that support broader goals of digital transformation.

Methodology

This study employs a qualitative research methodology to examine the current state of electronic document management systems (EDMS) and identify effective strategies for their improvement within the context of the digital economy. The research design is based on an exploratory approach, which is suitable for gaining in-depth insights into complex technological and organizational processes.

Primary data for the study were collected through semi-structured interviews with IT specialists, document management officers, and digital transformation experts from both public and private sector organizations. These interviews provided detailed insights into

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the practical challenges and solutions associated with the implementation and optimization of EDMS.

In addition to interviews, secondary data were gathered through a comprehensive review of scholarly articles, industry reports, white papers, and best practice guidelines published by recognized organizations such as ISO, AIIM (Association for Intelligent Information Management), and Gartner. This helped to frame the findings within the broader theoretical and technological context.

Purposive sampling was used to select participants who had direct experience with EDMS implementation or management. A total of 15 professionals from different sectors—such as education, government, banking, and logistics—were interviewed to ensure a diverse range of perspectives and experiences.

This study is limited by its qualitative nature and relatively small sample size, which may not fully capture the diversity of experiences across all industries and countries. However, the findings offer valuable insights and practical guidance that can be applied or expanded upon in future research.

Result and discussion

The analysis of the collected data reveals several critical findings regarding the current state and future improvement strategies of electronic document management systems (EDMS) within the digital economy. These findings are discussed below through the lens of the main thematic areas that emerged from interviews and literature synthesis.

Current Challenges in EDMS Implementation

The majority of interview participants reported that their organizations had implemented some form of EDMS; however, these systems were often fragmented and poorly integrated with other enterprise solutions such as ERP, CRM, or HRM systems. Many respondents emphasized that the lack of interoperability between systems leads to redundant work, data inconsistencies, and user frustration. In addition, smaller organizations reported a lack of budget and technical expertise, which limited their ability to fully digitize their workflows.

Another common issue was user resistance and insufficient training. In several cases, employees were reluctant to adopt new systems due to lack of familiarity, fear of change, or perceived complexity of the software interface. This aligns with previous studies emphasizing the importance of user-centered design and effective change management during EDMS deployment.

Technological Priorities for Improvement

A key strategy identified for improving EDMS is the integration of **cloud-based solutions**. Cloud technologies offer scalability, lower maintenance costs, and remote accessibility—features that are particularly valuable in the current era of hybrid and remote

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work environments. Respondents noted that cloud-based EDMS helped eliminate server maintenance costs and ensured better disaster recovery options.

Another promising direction is the incorporation of **artificial intelligence (AI)** to automate routine document handling tasks. For example, AI-powered systems can automatically classify documents, extract metadata, and suggest document workflows, significantly reducing manual labor and the risk of human error. Respondents agreed that such automation has the potential to improve efficiency, especially in high-volume environments such as government agencies and large corporations.

Furthermore, **cybersecurity** was identified as a high-priority concern. Many organizations, particularly those in the financial and public sectors, emphasized the importance of end-to-end encryption, secure access control, and regular security audits. Respondents pointed to a growing need to comply with international data protection laws (e.g., GDPR) and local digital governance standards.

Organizational and Strategic Factors

Beyond technical enhancements, the success of EDMS is strongly influenced by organizational culture and leadership. Participants noted that senior management support is essential in ensuring adequate budget allocation, cross-departmental collaboration, and alignment of document management initiatives with broader digital transformation goals.

Another important factor is **regulatory compliance**. Several respondents mentioned that their EDMS had to be customized or reconfigured to align with national regulations on electronic records management, digital signatures, and document retention. Failure to do so often resulted in legal risks and audit failures.

Effective **training and support programs** were also cited as essential to successful EDMS adoption. Organizations that invested in regular staff training reported higher user satisfaction, fewer system errors, and better overall utilization of document management functionalities.

Strategic Framework for EDMS Improvement

Based on the data analysis, a strategic framework for improving EDMS in the digital economy is proposed:

1. **Assessment and Audit**: Conduct a comprehensive assessment of existing EDMS infrastructure, workflows, and security gaps.
2. **Technology Integration**: Adopt modular, cloud-based platforms with AI-enhanced features for automation and intelligent search.
3. **Security and Compliance**: Implement robust cybersecurity policies and ensure compliance with international and national data laws.
4. **User-Centered Design**: Develop intuitive user interfaces and involve end-users in system design and feedback loops.

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5. **Change Management**: Establish leadership support, offer continuous training, and communicate the strategic value of EDMS improvements.

Figure 1. Key Challenges Identified in EDMS Implementation (Based on Interview Responses)[9]

Challenge	Percentage of Respondents Reporting (%)
Lack of integration with other systems	73%
User resistance and poor training	60%
Limited budget and technical resources	55%
Weak cybersecurity infrastructure	47%
Poor user interface and design	38%

This chart visualizes the most common barriers faced during the implementation of electronic document management systems. The top challenges include integration issues with other digital platforms, low user adoption due to inadequate training, and financial or resource constraints. These insights underscore the need for a holistic strategy that addresses both technological and human factors.

Figure 2. Strategic Priorities for EDMS Improvement[10]

Strategy Area	Frequency of Mention in Interviews	Priority Level (High/Medium/Low)
Cloud-based infrastructure	13 out of 15	High
AI and automation	11 out of 15	High
Cybersecurity	10 out of 15	High
User training and support	9 out of 15	Medium
Regulatory compliance	7 out of 15	Medium
UI/UX improvement	6 out of 15	Medium

This figure reflects the strategic focus areas identified by participants. Cloud solutions, AI integration, and robust cybersecurity were cited as the top three priorities. These strategies are essential for ensuring the scalability, efficiency, and security of EDMS in a fast-evolving digital environment.

[9] Author created
[10] Author created

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Figure 3. EDMS Adoption Benefits Reported by Respondents[11]

Benefit	Percentage of Respondents Observing Improvement (%)
Faster document retrieval	87%
Reduction in paper usage	80%
Improved collaboration	72%
Enhanced compliance	68%
Better audit readiness	60%

This figure summarizes the perceived benefits organizations experienced after EDMS implementation. The highest reported improvement was in document retrieval speed, followed by reduced dependency on paper-based processes. These outcomes validate the operational advantages of a well-managed electronic document system.

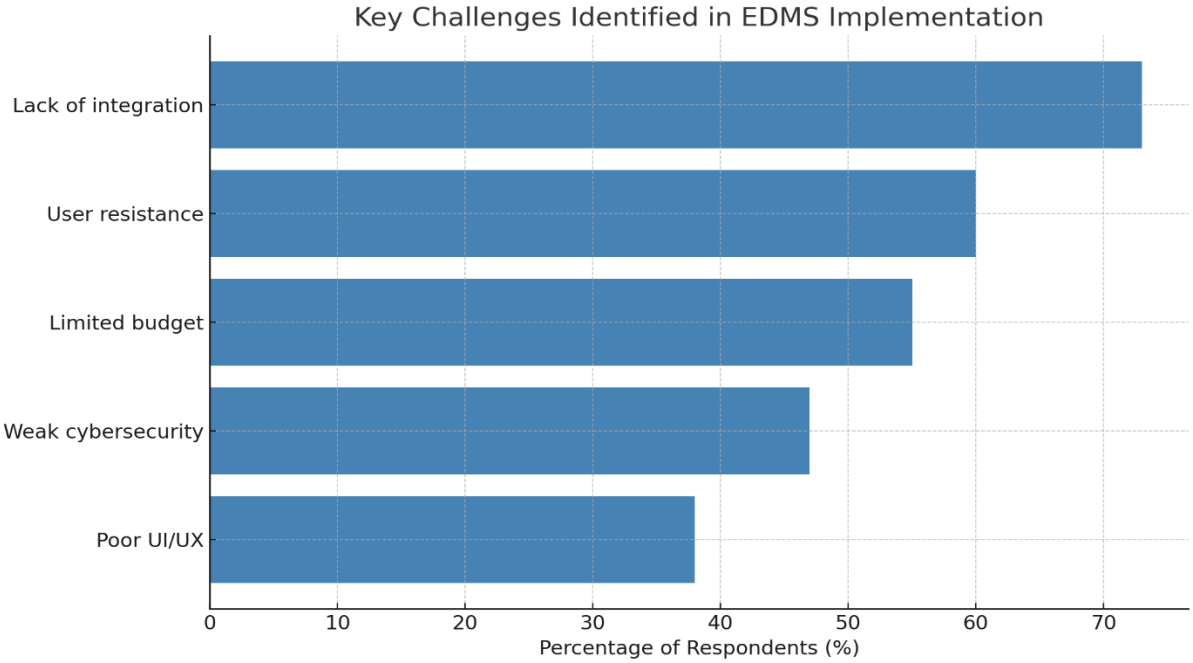

Figure 4. Bar Chart – Key Challenges Identified in EDMS Implementation[12]

This bar chart illustrates the main challenges organizations face when implementing electronic document management systems (EDMS). The most frequently cited issue is the lack of integration with other systems (reported by 73% of respondents). Other major challenges include user resistance due to insufficient training and limited financial or

[11] Author created
[12] Author created

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technical resources. These barriers highlight the need for a strategic and user-centered approach in EDMS deployment.

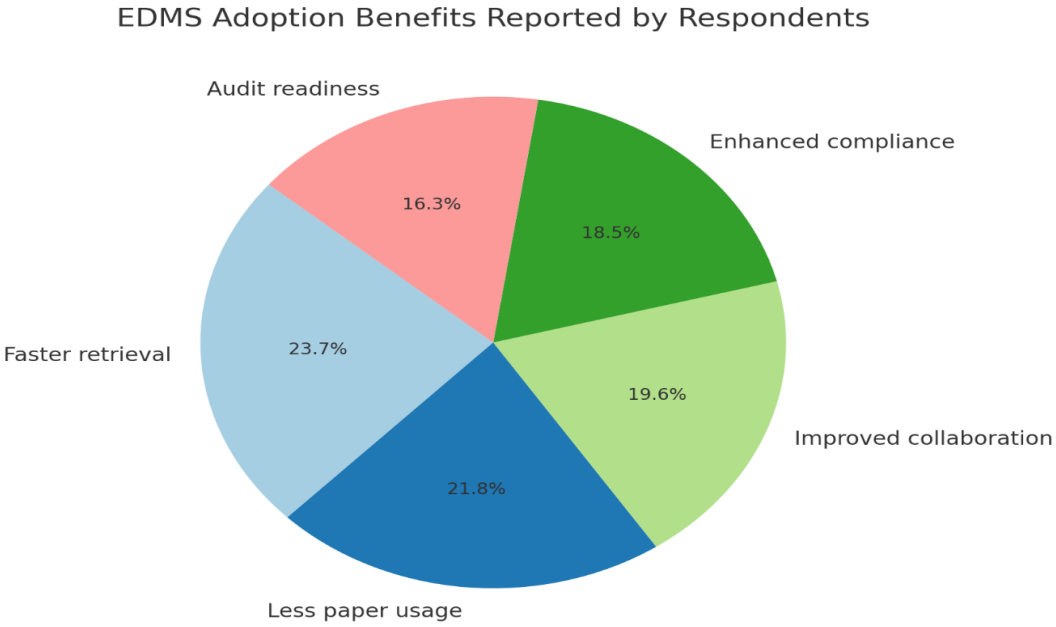

Figure 5. Pie Chart – EDMS Adoption Benefits Reported by Respondents [13]

This pie chart represents the key benefits organizations observed after adopting EDMS. The majority of respondents (87%) reported faster document retrieval, followed by reduced paper usage, enhanced collaboration, and improved regulatory compliance. These results confirm that EDMS implementation can significantly improve operational efficiency and information management.

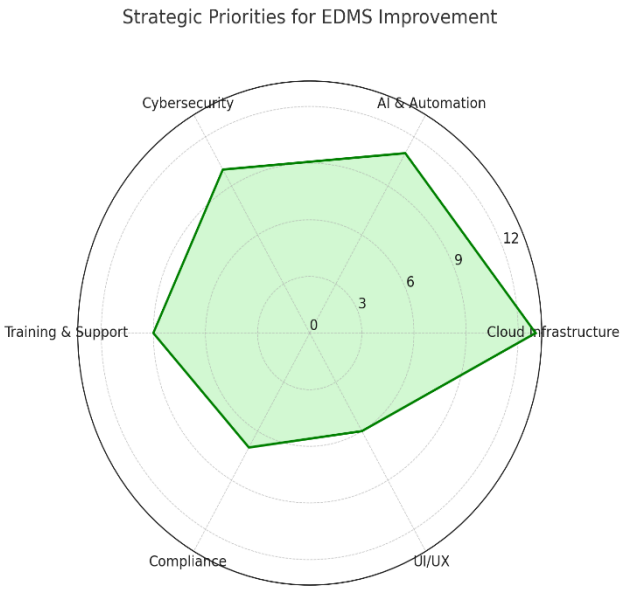

Figure 6. Radar Chart – Strategic Priorities for EDMS Improvement[14]

This radar chart presents strategic priorities identified by respondents for improving EDMS in the digital economy. The top-ranked areas include cloud

[13] Author created
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infrastructure, AI-based automation, and enhanced cybersecurity. These elements form the foundation for creating scalable, secure, and intelligent document management environments aligned with digital transformation goals.

Improving EDMS is not merely a technological upgrade but a strategic transformation that enhances organizational agility, accountability, and innovation. A well-implemented EDMS contributes to faster decision-making, better data governance, and increased institutional resilience—factors that are vital for success in the digital economy. Moreover, by enabling seamless collaboration and reducing operational silos, improved EDMS systems foster a more connected and responsive organizational environment.

Conclusion

In the context of the rapidly evolving digital economy, the implementation and continuous improvement of electronic document management systems (EDMS) have become critical for enhancing organizational efficiency, transparency, and agility. This study identified the key challenges faced during EDMS implementation, including system integration issues, user resistance, limited resources, and cybersecurity concerns. At the same time, it highlighted the significant benefits such systems offer, such as faster document access, reduced paper usage, and improved compliance.

The analysis also revealed that strategic priorities for EDMS improvement should focus on adopting cloud-based infrastructures, integrating AI and automation technologies, strengthening cybersecurity measures, and enhancing user training and system usability. Addressing these priorities will enable organizations to fully leverage the potential of EDMS as a foundational component of digital transformation.

Ultimately, successful EDMS strategies require not only technological upgrades but also institutional commitment, change management, and ongoing support. Future research should continue to explore industry-specific EDMS applications and the impact of emerging technologies such as blockchain and machine learning on document management practices.

Recommendations

Based on the findings of this study, the following recommendations are proposed for organizations seeking to improve their electronic document management systems (EDMS) in the digital economy:

1. Invest in Cloud-Based Infrastructure:

Transitioning to cloud-based EDMS platforms can enhance scalability, reduce operational costs, and facilitate remote document access and collaboration.

2. Integrate AI and Automation:

Incorporating artificial intelligence tools such as automated document categorization, OCR (optical character recognition), and smart search functions can significantly improve efficiency and accuracy in document workflows.

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3. Enhance Cybersecurity Measures:

Strengthening data encryption, access control, and regular system audits is essential to protect sensitive information and maintain trust in digital document systems.

4. Provide Continuous User Training:

Ongoing training programs for staff at all levels will improve system adoption, reduce errors, and encourage a culture of digital competence.

5. Ensure Regulatory Compliance:

EDMS should be designed and updated in line with national and international data protection regulations to avoid legal risks and ensure operational legitimacy.

6. Monitor and Evaluate Performance:

Establishing performance indicators and conducting regular evaluations will help in tracking system effectiveness and identifying areas for improvement.

7. Foster a Culture of Digital Transformation:

Leadership should actively promote digital innovation, allocate resources for modernization, and align document management strategies with broader organizational goals.

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