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A Review of Enhancing Government Offices Experience and Operational Efficiency of Knowledge Management Systems depending on Information Technologies

R.H. Hussan[1], and N.H. Hussan[2]

[1]Department of Computer Science,Collage of Education, Mustansiriyah University Baghdad, Iraq, ragheed1968@uomustansiriyah.edu.iq

[2]Chief seiner Engineer,Irrigation and Drainage Department, Ministry of Wate Resources, Baghdad, Iraq, neiran_2014@yahoo.com

A B S T R A C T

In the middle of the remarkable increase in data and information obtained through reliable search sites for the purpose of increasing operational efficiency and improving experiences in the business world and in government departments. It has become difficult to reach accurate information that benefits the user due to its abundance, as well as it is difficult to obtain the accumulated experiences and the obstacles that the customer faces in order to find similar solutions that the employee needs to obtain in order to solve a specific problem or how to increase production and improve expertise. Despite this, knowledge management systems have faced great obstacles, the most important of which is data security and how to preserve it. In this review, some experiences of governments were highlighted randomly from all over the globe, which used knowledge management systems for information technology, including American, Singaporean and Australian experience. It also reviewed the different processes on how to acquire and generate knowledge and how to capture, store, exchange and apply this knowledge by means of information technology while maintaining data security. These experiences of these countries were considered a decisive tool to solve, improve and increase the efficiency of productivity and were also considered a good way to get out of these obstacles when faced by government employees in the absence of cumulative and informational experience, due to lack of experience or recent work in these departments. So that KMS plays a huge role in addressing these problems.

Keywords: *Information Technology, Knowledge Management Systems, Develop Knowledge Management, Sharing Knowledge Management, AI, Data security.*

1. Introduction

Organizations are seeking for ways to increase their operational efficiency and customer experience in the fast-paced, fiercely competitive business world of today. By enabling businesses to collect, store, and exchange knowledge internally, knowledge management systems (KMS) have emerged as a crucial tool for achieving these objectives (Zand et al., 2018). KMS can boost productivity by giving staff members rapid and simple access to the data they want for decision-making (Desouza & Paquette, 2011). In this review, we'll look at how KMS is used in government offices to improve customer service and operational effectiveness. Delivering services to citizens presents special difficulties for government agencies. Government agencies

need to implement creative solutions to improve the customer experience and operational

efficiency in response to rising citizen demands for more efficient and effective services. By giving government personnel access to the information, they need to make educated decisions and cooperate more successfully, KMS may play a big role in addressing these issues.

By enabling quicker responses to citizen queries and increasing the precision of regulatory compliance, KMS can enhance the customer experience (Pusaksrikit, 2006). KMS can increase productivity by enabling employees to obtain the information they demand quickly and easily, which decreases the time and effort needed to complete activities. Additionally, by giving staff members access to the pertinent data and analytics tools, KMS may facilitate data-driven decision-making (Leachman & Scheibenreif, 2023). Government agencies have trouble installing and adopting KMS despite the systems' many advantages. These difficulties include data security, user acceptance, and organizational culture. It takes strong leadership, training programs, and proper security measures to address these issues.

2. Benefits of Knowledge Management Systems in Government Offices

Improved Knowledge Sharing and Collaboration Improving teamwork and knowledge sharing in government offices is one of the most important advantages of KMS (Tseng, 2016). KMS offers a single platform where staff members can access and exchange information in real-time, improving teamwork and communication. By sharing their knowledge and skills, many departments may collaborate more effectively to solve issues and enhance procedures (Al-Ahbabi et al., 2017). Better decision-making and problem-solving results from this, which eventually improves the customer experience. KMS can support collaboration in a number of ways. They first offer a consolidated area for storing data, making it simpler for staff members to locate and access the data they require. In government workplaces where information is frequently dispersed across various departments and systems, this can be especially helpful (Groff & Jones, 2012). Employees can cooperate and work together more easily with KMS since they have access to all the necessary information in one location.

Second, KMS offers features and tools that facilitate collaboration, including tools for project management, file sharing, and instant chat. Regardless of their location, these tools can help workers communicate and collaborate more successfully. Employees can collaborate on projects and work more effectively together by sharing files and documents in real-time, for instance. Third, KMS can encourage knowledge sharing by giving staff members chances to contribute their information and perceptions (DATE, 2009). Online forums, communities, and other social technologies that promote cooperation and knowledge sharing can be used for this. Employees can learn from one another by imparting their knowledge and skills, which improves decision-making and problem-solving. KMS can facilitate improved interaction and coordination with external stakeholders, including customers,

suppliers, and other governmental organizations (McEvoy & Ragab, 2017). KMS can optimize the flow of information and the overall customer experience by offering a central hub for communication and collaboration.

More rapid response to citizen requests KMS can assist government agencies in speeding up their responses to citizen queries. The conventional method of responding to citizen requests and complaints can be cumbersome and ineffective, especially if the data needed to respond to the request or complaint is dispersed across various departments or systems. Delays in response times and a bad customer experience may follow from this. However, KMS can assist in overcoming these difficulties by giving staff members a consolidated platform via which they can quickly obtain the data they require to handle citizen inquiries (Debnar, 2023). This may consist of pertinent policies, practices, and other data needed to handle the request or complaint. With KMS, staff members can easily search for and retrieve the necessary data, enabling them to more rapidly address a citizen's request or grievance. Additionally, KMS can help automate some procedures, such as sending requests or grievances to the proper division or worker. The whole customer experience can be enhanced and response times can be further decreased as a result.

One significant advantage of adopting KMS in government offices is improved accuracy of regulatory compliance. It can be difficult for government employees to stay up to date with the most recent laws and regulations given the constantly shifting regulatory landscape. KMS can assist by giving staff members a single point of access to the most recent information on regulatory compliance (Mittal, 2022). Employees will always have the most up-to-date information because it is simple to update and distribute this information. By giving staff the instruments and resources necessary for compliance, KMS can also assist government offices in improving their adherence to regulations. Checklists, templates, and workflows in KMS may help employees follow the compliance process and make sure all necessary actions are taken. Government agencies can reduce the cost of fines and penalties associated with non-compliance by increasing the accuracy of regulatory compliance. This ensures that the government office can continue to offer citizens high-quality services while also protecting its financial resources. Additionally, providing services in accordance with regulations can improve client satisfaction, foster trust, and boost the office's brand.

Enabling Making Decisions Based on Data for ensures the successful of strategies and plans, government employees must use data-driven decision-making (Massaro et al., 2015).The large flow of data gives the government worker a flexible way to find quick and effective solutions to solve immediate obstacles. This enables them to shed light on exploited and unexploited or misused resources. KMS, also, can improve customer experience. In addition to, provides the possibility of following up and monitoring developments or obstacles that occur clearly over a period of time (Dudhane & Pitambare, 2015).In this way, they can control their plans and make the required improvements or modification, due to the abundance of data that enables them to determine their future paths in a well-considered way. For instance, KMS can

assist government agencies in monitoring the effectiveness of their initiatives, gauging their social impact, and pinpointing opportunities for development.

Greater Productivity By lowering the time and effort needed to perform activities, KMS can help increase productivity in government agencies (Liebowitz, 2016). Employees that have access to a single platform may find and exchange information quickly, saving time and effort on tasks. Improved productivity and efficiency follow from this. Data input and document filing can be automated with KMS, freeing up personnel to work on more difficult activities that call for their expertise. This may result in better judgment, more creative thinking, and enhanced customer support. KMS can also assist government agencies in streamlining their procedures to cut down on duplication and delays (De Andrade & Tumelero, 2022). As a result, the government may become more effective and efficient, which will ultimately benefit the people it serves by delivering better services and spending less money.

3.Challenges in Implementing Knowledge Management Systems in Government Offices

The successful adoption of Knowledge Management Systems (KMS) in government offices is frequently fraught with difficulties, despite the many advantages they provide. In a simplified manner, knowledge management systems for information technology can be described as a tool used by companies to help organize documents, frequently asked questions, and other information into accessible formats for internal and external customers while maintaining data security.

This section will go over some of the typical obstacles that government agencies may run into when putting KMS into practice, as well as solutions to those obstacles. Organizational culture is a significant obstacle (Pee & Kankanhalli, 2016). When knowledge management systems (KMS) are implemented in government offices, organizational culture presents a considerable obstacle. This is so because government offices often have set protocols and procedures inside hierarchical structures. Employees in these firms may be used to doing things the old-fashioned way and may be reluctant to adopt new technological solutions like KMS (Martinez-Conesa et al., 2017).

Organizational culture challenges can take many different forms. Employees may, for instance, be reluctant to collaborate with others or share their knowledge because they fear doing so will undermine their standing within the company. Employees could also be dubious about the advantages of KMS and want to remain with conventional knowledge management techniques like emails and hard copies. The organization's leadership must give clear direction and support for KMS implementation in order to address this difficulty. This can be accomplished by implementing training sessions that emphasize the advantages of KMS and how they complement the goals of the organization. The significance of sharing knowledge and cooperating to accomplish shared objectives can be emphasized by leaders as they try to foster a culture of cooperation (Muqadas et al., 2017). Employee participation in the implementation process is also crucial. This can increase buy-in and ownership of

the new technology solution, increasing the likelihood that it will be used successfully. Employees should have a say in decision-making so they may offer suggestions and criticism on how the KMS is being implemented.

Moreover, it's critical to have a precise strategy in place for gauging the installation of the KMS. By doing so, you can strengthen accountability and show how valuable the new technological solution is. Utilizing metrics like usage rates, engagement levels, and productivity gains, one may assess the effectiveness of the KMS deployment and pinpoint opportunities for development. User adoption presents another difficulty. The effectiveness of KMS implementation in government offices depends heavily on user uptake. If employees don't make advantage of KMS, even the most effective ones won't be able to provide the desired benefits. The multidimensional task of encouraging user adoption necessitates addressing a number of crucial elements.

First and foremost, KMS needs to be simple and intuitive. Employees should be able to easily traverse the system and find the data they require fast. For the complicated and burdensome systems, employees may be less interested from using KMS, chiefly if they were exposed to additional training or technical expertise (Shrivastava, 2017). So that it's essential to produce KMS that is easy to use and spontaneous, as well as clear direction and functional of search. Second, KMS tends to be suitable for the requirements of employees to develop their regular work so that they are more tending to do so. To make KMS helpful and friendly to all users, it should be developed to address all the requirements of various departments and workers.

Third, KMS should be easy access to all staff members, which is critical to government offices as the staff members could operate remotely or in different places. KMS should use various platforms like computers, laptops and mobiles devices to assure using the system from anywhere. In addition to, KMS should built in accessible way that make disable staff members to use the system by using screen readers and other assistive technology .Finally, And from what has been mentioned, the KMS must be adopted in many areas, and to achieve these goals, it must be clarified and specified for employees on how the proper and effective use of KMS on an ongoing basis. It is also the responsibility of the companies' departments and leaders to define training programs to support the main objectives and topics that serve the requirements of those companies and to overcome the potential technical problems.

One of the big hurdles when using KMs is how to keep the data security (Chamunorwa et al., 2016). The loss of this sensitive data is a security breach of public safety and national security, and in particular it is also considered damage to the institution's reputation and financial and legal liability. Therefore data security must be given the first consideration when designing a KMS. as is custon all government agencies to abide by data protection laws like the data protection laws like Accountability Act (HIPAA) , the Health Insurance Portability and

Accountability Act (HIPAA) and the General Data Protection Regulation (GDPR) (Massingham, 2019).

Multi-factor authentication, user role-based access control, and encryption can all be used to accomplish this (Holsapple, 2013). KMS must be able to send reports to authorized persons, to view these reports clearly and quickly through multiple authentications, in addition to protecting these data and reports from any piracy via the Internet. Implementation of several protection programs for systems originally designed to protect computers and their systems, such as firewall, anti-virus software, and protection from access to unauthorized information. Additionally, government agencies must have a thorough security plan in place that describes how to handle and safeguard sensitive data. To maintain compliance with data security laws and standards, this policy must be made apparent to all workers and strictly enforced.

4.Case Studies of Successful Knowledge Management Systems Implementation in Government Offices

Case studies of effective KMS implementation in government offices offer useful insights into the advantages, difficulties, and implementation tactics. Three case studies are from: the Australian Department of Defense, the Government of Singapore, and the US Department of Transportation.

4.1 US Department of Transportation

A KMS was introduced by the US Department of Transportation (USDOT) to enhance communication and information exchange among its staff and stakeholders. The KMS assisted in streamlining communication channels, speeding up response times, and improving information accuracy (Bedford & Harrison, 2015). Additionally, the KMS facilitated decision-making based on data and raised productivity. The KMS's deployment encountered a number of difficulties, including user adoption, change resistance, and data security (Moulton & Wilt, 2022). The USDOT put initiatives including leadership buy-in, training, and user interaction into place to address these issues. To address worries regarding data privacy and security, the USDOT also created a thorough data security plan. The operational effectiveness and customer experience both significantly improved as a result of the KMS's successful implementation. Reduced response times, enhanced communication, and higher production allowed the USDOT to improve customer satisfaction.

4.2 Government of Singapore:

To enhance employee collaboration and knowledge exchange, the Singaporean government built a KMS (Pee & Kankanhalli, 2016). The KMS facilitated improved decision-making, quicker response times, and streamlined communication routes. Additionally, the KMS facilitated decision-making based on data and raised productivity. Numerous obstacles, such as user adoption, data security, and cultural reluctance to change, were encountered during the KMS's implementation. The Singaporean government put leadership buy-in, training, and user interaction into

practice to address these issues (Hislop et al., 2018). To address concerns about data privacy and security, the Singaporean government also created a thorough data security plan. The operational effectiveness and customer experience both significantly improved as a result of the KMS's successful implementation. The Singaporean government was able to shorten response times, enhance communication, and boost output, which raised consumer satisfaction.

4.3 Australian Department of Defense

A KMS was established by the Australian Department of Defense to enhance employee communication and knowledge exchange. The KMS facilitated improved decision-making, quicker response times, and streamlined communication routes. Additionally, the KMS facilitated decision-making based on data and raised productivity. Numerous obstacles, such as user adoption, data security, and cultural reluctance to change, were encountered during the KMS's implementation (Moulton & Wilt, 2022). The Australian Department of Defense put initiatives including leadership buy-in, training, and user interaction into place to address these issues. In order to address issues regarding data privacy and security, the Australian Department of Defense also created a thorough data security plan. The operational effectiveness and customer experience both significantly improved as a result of the KMS's successful implementation. Customer satisfaction grew as a result of the Australian Department of Defense's ability to shorten response times, enhance communication, and boost production.

5.Future of Knowledge Management Systems in Government Offices

As new technologies continue to develop, enabling more effective and efficient knowledge exchange and collaboration, the future of Knowledge Management Systems (KMS) in government offices is bright. KMS will be essential in helping government offices reach their objectives given the increased demand for improved customer experience and operational efficiency (Ali et al., 2020). We'll talk about the newest developments in KMS in this section and how they might change how government agencies run. Machine Learning (ML) technology is one of the most important trends in KMS (Gaviria-Marin et al., 2018). The generation, categorization, and retrieval of material are just a few of the knowledge management operations that these technologies have the ability to automate and expedite. Government agencies can use ML to get insights into the data kept in the KMS, allowing them to make data-driven choices and enhance their operations.

Integrating blockchain technology with KMS is another new trend. Blockchain is a perfect answer for government organizations that need the highest levels of data security and secrecy since it offers a secure and transparent means to store and share information. Government agencies may guarantee that their data is safe, tracable, and unmodifiable with the help of blockchain technology. Other cutting-edge technologies, besides ML and blockchain, are probably going to have a big impact on KMS in government offices (Soto-Acosta et al., 2017). These technologies include

virtual reality (VR), augmented reality (AR), and the Internet of Things (IoT). Government agencies now have access to a lot of data thanks to the development of the Internet of Things (IoT), which can be utilized to enhance operations. Government staff are able to monitor and evaluate data fast because to IoT devices like sensors, wearables, and cameras that can gather and transmit data in real-time. IoT sensors, for instance, can assist in tracking traffic patterns and modifying traffic lights accordingly to ease congestion and improve traffic flow.

Other cutting-edge technologies like augmented reality (AR) and virtual reality (VR) are also going to have a big impact on KMS in government offices (Holsapple, 2013). Government workers can collaborate regardless of their physical location thanks to AR and VR's immersive and engaging experiences (Hislop et al., 2018). For instance, a government worker can use augmented reality to obtain real-time data and work with coworkers to solve complicated challenges, like responding to natural catastrophes. The engagement of citizens can also be improved by using AR and VR. Government agencies might employ augmented reality to give citizens engaging experiences like virtual tours of official buildings or historical sites. Similar to this, VR can be utilized to give citizens immersive experiences, such as virtual town hall meetings or neighborhood gatherings. Furthermore, the use of blockchain technology in government offices has the potential to transform KMS (Sheth, et al., 2023). Only authorized users will have access to sensitive data thanks to blockchain's secure and transparent data access. Blockchain can also facilitate safe data sharing and cooperation across various government entities, enhancing coordination and minimizing effort duplication.

KMS can also be applied to improve citizen participation in public institutions. By facilitating efficient and effective communication between citizens and government personnel, KMS can transform citizen involvement in government offices. Governments may improve the delivery of public services, increase transparency, and foster citizen confidence by leveraging KMS to offer citizens pertinent information and services. Using chatbots is one example of how KMS might improve citizen engagement. Computer programs called chatbots are made to mimic conversations with real users. They can be included into social media and government websites to give citizens instant access to information and services (North & Kumta, 2018). Chatbots can also be used to respond to questions from regular citizens, freeing up government workers to concentrate on more difficult jobs. KMS can also be used to build online communities where people can communicate with each other and with public servants. Citizens have a platform to express their experiences, viewpoints, and feedback on government services through online communities. Concerns raised by the public can be addressed by using this feedback to enhance service delivery. KMS can also facilitate citizen involvement in decision-making and policy creation, giving people a voice in the governing process.

Another area where KMS can have a big impact is regulatory compliance (Soto-Acosta et al., 2016). Since breaking rules and policies can have major repercussions, regulatory compliance is a crucial concern for government agencies. KMS may lessen

this risk by giving government workers access to the most recent rules and guidelines in one convenient spot. By doing this, it may be made sure that workers have the knowledge necessary to make judgments that are legal (Del Giudice & Della Peruta, 2016). KMS can also assist government agencies with swift policy and regulation adaptation. KMS can make it possible for government offices to stay current with the most recent developments by having the capacity to instantly update and distribute new rules and policies. This can make managing regulatory compliance more effective and efficient while lowering the risk of non-compliance and the accompanying fines. KMS can also assist government agencies in tracking compliance and proving that they are following rules and guidelines. KMS can help government offices prove that they are in compliance with regulations by offering an audit trail of their actions. This can help to increase the government office's reputation and foster confidence with stakeholders and residents.

Finally, KMS can help government offices draft policies more effectively (Ølnes et al., 2017). Government agencies must adopt policies because they determine how resources and services are distributed. By giving government workers access to a variety of data and information, KMS can significantly improve policy creation. In addition to information on effective policies and best practices from other government agencies or jurisdictions, this might also include information about the needs, opinions, and behavior of citizens. KMS can also help government workers collaborate, helping them to create policies that deal with complicated problems and satisfy the requirements of citizens (Gaviria-Marin et al., 2018). KMS can help government workers create policy more quickly and effectively by giving them a forum to share information and ideas. Additionally, KMS can assist government agencies in tracking and assessing the efficacy of policies over time. KMS gives government agencies the ability to pinpoint areas for improvement and change policies as necessary by monitoring data and metrics relating to policy results. This can assist in ensuring that policies continue to be applicable and successful in satisfying societal needs.

Table 1. Comparison of Study

Study	Focus	Methodology	Key Findings	Implications
Al-Ahbabi et al. (2017)	Developing a knowledge management framework for the public sector	Literature review and interviews	Developed a conceptual framework for knowledge management in the public sector. Identified enablers, barriers, and impact	Provides insights for practitioners and policymakers in the UAE public sector and contributes to theoretical advancement in the field.

			on public sector performance.	
Al-Hashemy (2022)	Developing a secured knowledge management system	Design and programming languages	Developed a comprehensive IT model for knowledge management system with security features.	Provides a model for developing knowledge management systems using IT and emphasizes the importance of security.
Ali et al. (2020)	Exploring the role of social media and knowledge management	Partial least squares analysis	Social media positively influences knowledge management, trans active memory system, absorptive capacities, and team innovation performance.	Highlights the positive impact of social media on knowledge management and its potential for enhancing team innovation performance.
Bedford and Harrison (2015)	Identifying knowledge management activities in transportation	Environmental scanning and interviews	Identified common business drivers for KM in transportation sector. Shared KM practices effectively based on common business drivers.	Highlights the effectiveness of environmental scanning in identifying KM activities and encourages sharing of KM practices based on common business drivers.
Bolisani et al. (2016)	Comparing deliberate and emergent KM approaches in small KIBS	Case study and analysis	Emergent KM approach was found more suitable for managing client-supplier knowledge in small KIBS.	Suggests that small companies may benefit from adopting an emergent approach to KM in managing client-supplier relationships.

Chamunorwa et al. (2018)	Developing an intermediary node in indigenous knowledge management	Co-design and community perspective	Focuses on developing a community-driven approach to indigenous knowledge management in Namibia.	Highlights the importance of involving indigenous communities in the knowledge creation, collection, and sharing process through co-design and community perspectives.
Darvishi and Darvishi (2019)	Assessing the effectiveness of knowledge management	Analytic Network Process	Used Analytic Network Process to assess the effectiveness of knowledge management in universities.	Provides a tool for assessing the effectiveness of knowledge management in universities and offers a comparison model for evaluating KM in the university sector.
De Andrade and Tumelero (2022)	Investigating the contribution of AI to customer service	Data content analysis	AI integrated with IBM's Watson system contributed to customer service efficiency and improved attendances.	Highlights the benefits of AI integration in customer service and its potential to enhance efficiency and service quality.
Del Giudice and Della Peruta (2016)	Assessing the impact of IT-based KM systems on innovation	Survey and structural equation modeling	IT-based KM systems were perceived as important for supporting internal venturing and improving performances within business processes.	Provides insights into the importance of IT-based KM systems in supporting innovation and internal venturing within organizations.

6.Conclusion

The review proved that knowledge management systems have the ability to develop employees, as well as develop systems that work in this field in a large way in government offices. However, its successful implementation requires facing challenges related to keeping pace with developments in the worlds related to technology, culture and organizational structure. The review also highlights the importance of leadership buy-in, user involvement, and training when implementing KMS. Overall, the article provides insights into the benefits, challenges, and future trends of KMS in government offices, enabling readers to make informed decisions about their adoption.

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