Implementation of a Knowledge Management System (KMS) in Small and Medium Enterprises (SME)

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Abstract. Most knowledge management (KM) and knowledge systems (KMS) articles have been through in recent years. Although Nonaka has long presented the Theory of Knowledge Management (KM) through his paper since 1994, the research in this field is still intensively discussed. The phenomenon of dynamic research related to this often occurs in parallel with the development of technology, culture, needs and conditions of implementation. The technological development is becoming more and more advanced and also able to solve the problem that always being faced by a human being.
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1   Introduction

Small and medium-sized organizations (SMEs) of approximately two hundred personnel or much less (Chan & Chao, 2008) are particularly susceptible to demanding situations with the implementation of know-how control. Knowledge management implementations for small and medium-sized groups do no longer different from applications for large agencies. Edvardsson and Durst (2013) found that small and medium organizations gain significantly from the implementation of knowledge management systems, which they determined make contributions to employee development, innovation, creativity, and advanced consumer pleasure and external relationships with other companies. Below are have a few studies that mentioned the concept of KMS in small and medium enterprises.

Based on Vukasinovic, N. et al. (2018), in their study on "Application of knowledge management system to injection mold design and manufacturing in small enterprises." There are several commercial software solutions for knowledge management. The implementation of any software solution includes a detailed analysis of the enterprise's needs. It is easy to justify investment in information

systems and better knowledge management in a large order. Small and medium-sized enterprises also face the challenge of engaging in information solutions that do not offer the same value compared to large systems

This source is beneficial in this study because the author stated that, there is several of the system or software can be used in the organization to running their business. The knowledge system that needs to be used in the organization must relate to their organization's objective, and then the system can give knowledge and benefits to the organizations. This source also provides several key elements in a small and medium-sized enterprise should consider when implementing a knowledge management system. In particular, the study points to the need for strong managerial support of a KM implementation as a critical success factor.

According to Lisanti, Y. et al. (2014) in the study of "The Knowledge Management System Model For SME (Small and Medium Enterprise)" A knowledge management system for small and medium-sized businesses, or named SME portal, which has the potential and functions of communicating SME employees, experts, vendors, and investors as well as media to improve communication, open up new possibilities and share information such as product marketing, quality improvement, distribution channels, etc., should be built based on a particular SME industry such as computer, retail, and manufacture.

This study also has an essential point about KMS in SME. The author mentioned that the SME portal that developed is one of the examples of the knowledge management system (KMS) in the SME. The primary function of KMS can make share the knowledge with others, and at the same time, it can give an advantage to the organization. For example, is KMS can improve communication between the seller and customers. While Floyde, A. et al. (2013) pointed that a KMS implemented in the enterprises or organization should be rational, flexible, efficient, and may be designed to meet the nature and nature of the organization and its particular risks. The Occupational Health and Safety Management (OSH) management system may be easy, appropriate for small and medium-sized enterprises, or much more flexible to accommodate a larger company.

The study above mentioned that to implement the KMS in organizations or enterprises, the system must be useful and valuable to the organizations. So, it can improve the performance of the organization. According to Kramer, F. et al. (2017), KMS can be described as "information systems that are designed to enhance the efficacy of knowledge management in the organization" and as the process of using previous knowledge to make decisions regarding existing and future organizational functionality and effectiveness.The author describes the importance of KMS implementation in the SME Because it can help the organization to make its decision making and also improve the organization's knowledge. It can be concluded that the factor that drives organizational success, such as increased productivity, process improvements, and increased sales and less costing, is by implementing the knowledge management system in their organization. As we all know, the implementation of the knowledge management system will lead to workforce growth, productivity, increase customer satisfaction, creativity, and also enhanced external relationships with other organizations. The information in this source gives credibility to the need for outcomes that can be obtained through the implementation of a knowledge management system in small to medium-sized businesses.

2   Benefit of KMS in SMEs

The study on "Application of knowledge management system to injection mold design and manufacturing in small enterprises" by Vukasinovic, N. et al. (2018) stated that KMS could give many advantages to the organization. The example benefits of knowledge management system is, KMS can enhance the accessibility of information and references, KMS also can Learn from mistakes and continuous improvement of the procedure, promotion of excellent practice, quicker and improved decision-making within the enterprise, better environment and engagement of staff, KMS can reduced impact of lack of skilled workers, prevention from duplication of expertise, Reduced time needed to develop a product and sell it, KMS can increase brand awareness, and also can faster in identification of potential changes in the market¨ Better detection of new business opportunities.

Based on Norek, T. (2013), in his study, "The Knowledge Management for Innovation Processes for SME Sector Companies," has consistently mentioned that it is essential to connect the knowledge management system with information systems in the enterprises or organization. It is particularly visible in the fields of information sharing, analysis and storage. Connections between the knowledge management system in the enterprise and the IT infrastructure follow the process of creation, processing, sharing, and applying knowledge. The author is trying to deliver the point about the benefits of the KMS in the organization. KMS can give an advantage in the process of knowledge sharing, analysis, and also storage of the information. Another article that stated the benefits of KMS in the organization. Sharafat, F., D. (2017) has pointed out that KMS can give several benefits to the organization, such as cost reduction, enhanced decision-making, and increased productivity, market share, creativity, and competitiveness. This source describes several benefits that will get to the organization if they are implementing the KMS. The common interests in terms involved technology and system are cost reduction, enhanced productivity, and easy to make the decision making. It is the same as the advantage of KMS. It can be summarizing that KMS can give many benefits to the organization to improve its performance. All the benefits of KMS can drive organization success. The various study has been conducted and stated the benefits of KMS. Knowledge Management System can help the employees or customers to make decision making and also solving a problem.

3   Implementing KMS in SMEs

Most of the article that had been selected is a case study and also developing a KMS in the organization. According to Vukasinovic, N. et al. (2018), some of the SMEs do not implement KMS in their organization. This leads to misunderstanding through communication among their employees. Activities are taking place that is not

in accordance; the information is not stored way inaccurately and trying to retrieve. The best way to solve the problems is by developing a KMS in the organization. After developed and implementing a KMS, the documents that already being stored are captured easily and quickly and also accessible to multiple users. If a specific document is not available, KMS will indicate that the records are missing. The KMS will make it possible to check the records. It is beneficial to enable editing of the documents in the program. From the data contained in the submitted documents, new materials are produced in KMS, with a higher density of useful information. If required, some sections of the KMS may be exported to the document in the standardized format. The author also had mentioned that after developed and implementing KMS, the communication between the staff and customers becomes more smoothly. Previously, the staffs and customers communicate using e-mail. It is not too suitable because the staffs need to open the e-mail and read one by one request from the customers. After implementing KMS, the staff can communicate efficiently with the customers. The staffs also can receive a quick notice from the customers via KMS. It can be concluded that, after the organization developing and implementing KMS in the organization, their business process become smoothly, easy to make decision making and also enhance organizations performance.

Cagnazzo, L. (2014) mentioned that nowadays, every organization has to adapt to ever-changing and rising customer demands in order to maintain a stable marketplace. Cooperation between organizations is one of the most effective approaches for enhancing global competitiveness. In order to achieve successful collaboration in the sense of a collaborative environment, the implementation of a Knowledge Management System is now necessary as it addresses the current knowledge-based sector. The development and implementing KMS in an Enterprise Network Environment is very necessary. For the successful implementation of KMS, it is identified a number of Critical Success Factors confirmed through the evaluation of the most relevant Key Performance Indicators linked to both the global network and the single company dimension. A Knowledge Management System has been introduced in an organization belonging to a specific form of the Enterprise Network, the Virtual Development Office (VDO). This form of the network has a very positive impact on the deployment of a successful KMS. The author also mentioned that there are several benefits that gain from developing and implementing KMS in the organization. The benefit of developing and implementing KMS in the organization is, cost reduction, give benefits to the internal business such as technical information share and support information sharing, share projects with partners and also network development and others. What can we concluded from this article, in order to improve the business process, developing and implementation KMS is vital. But to using a KMS in an effective way, networking must be strong. As we all know that KMS can give benefits to the organization to increase its business performance but the organization must know how to use KMS in the right and effective way.

Based on A. Royde et al. (2013) has explained about development and implementation of OSH Management System for SMEs. In order to provide more information to staff, the International Labor Organization has developed a document entitled OSH Management System. The purpose of such a KMS is to set up a process to improve the performance of risk assessment and to prevent accidents and incidents at work. This process is defined in the document as ' a systematic, step-by-step system

' which seeks to define what needs to be done and how best to achieve it. It must also be adaptable to take account of changes in the sector of the company and to comply with legislation. One of the key features of the OSH management system is its ability to perform audits. It promotes a cycle of continuous improvement and evaluation of the efficacy of the program in the safety of workers and in the avoidance of injuries and incidents. This system is flexible and logical to be used in the organization. According to the author, it is simple to be used and this system is able to improve the organization's performance.

The conclusion that can be made about the developing and implementation of the KMS in the SME is, it is very vital to the small and medium organizations to developing a KMS to help them to run their business process. KMS will allow the organization to stay even more competitive. The knowledge will increasingly be seen as the SME's most critical asset and key resource and the need to develop collaborative work teams, as new knowledge creation and innovation engines will be recognized as critical.

4   KM Tools in SMEs

Knowledge management tools can be in various types. According to several studies, they have mentioned that small and medium enterprises can use other KM tools to replace with KMS. KM tools also have the ability to manage the knowledge needed to successfully carry out its business activities. According to Kramer, F. (2017) claimed that Wikis is one of the KM tools that most popular to the small and medium enterprises. Wikis need to be very helpful as central sources of information and to reduce corporate dependency on e-mail. Understanding sharing knowledge culture requires easy tools to codify and located knowledge as well as manner to perceive knowledge at some stage in mission execution. The author also mentioned that Wiki or social software systems generally support the creation of a knowledge-sharing society because they flatten the corporate structure and allow workers to exchange rather than maintain expertise. Using a wiki as the KM tools may additionally reduce time had to retrieve relevant records. However, person-education desires to be conducted, safety and confidentiality problems should be cautiously taken into account and content material migration may be a truly hard challenge. In order to leverage its complete capacity, a KM device for SME has to provide smooth get entry to its content material and desires to be smooth to use in the standard. Cross company and go-boundary integration competencies, tracking and revision functions in addition to suitable, ideally (semi-)computerized indexing are also required. Finally content clustering features and superior seek functionality are critical. However, establishing an information-sharing culture is a prerequisite to correctly leverage every KM device and one of the topmost critical crucial achievement factors for every knowledge management.

The useful of the wiki as KM tools also discuss by Bolisani, E. & Scarso, E. (2016). They mentioned that wikis can give a several benefits to the SME which is We are simple to use; function as a central and clear source for knowledge, provide

monitoring and revision functions; promote cooperation between organizations, reduce the negative impact of information overload generated, for example, via e-mail and lead to building a culture of confidence. In fact, wikis have been introduced as a way to effectively address the well-known issue of exchanging Tacit Information in organizations by creating a platform for collaboration.

It can be concluded that there is no problem to create and share knowledge with others. They are various types of KM tools that can be used by SMEs in conducting their business activities. The effect of wikis on knowledge sharing and, more broadly, on people's KM practices can be crucial for their growth. Wikis also can have both beneficial and undesired impacts on how people engage in KM and their performance will rely on their ' sustainable influence ' on the so-called ' employee life environment, ' a concept introduced to define shared beliefs, ideas, behaviors and communication mechanisms in a group culture or family.

5   Challenges

Many of the organizations have faced difficulties in integrating effective knowledge management systems and related processes common issues involve challenges in collecting the maximum amount of knowledge produced by the enterprise, inadequate storage of knowledge collected, insufficient time devoted to analyzing the information, and insufficient resources to manage the project. Due to a lack of knowledge in implementing the KMS, the KMS that as being developed and implement can be used effectively. There are several of KMD development that is not effective to the SME.

According to Lisanti, Y. et al (2014) it is vital to develop and improve the KMS in the organizations to grow the business. In their study is focused on developing a web-based knowledge management application and the name of the KMS is the SME portal. The system was implemented in a more secure cloud environment. The knowledge management system for small and medium-sized enterprises (SMEs) or the SME portal has the ability and functions to link SMEs, experts, vendors, and customers as well as media to improve communication, open up new possibilities and share information such as product marketing, quality improvement, distribution channels, and it should be designed on the basis of the different small and medium-sized businesses. On top of that, the author also introduced a social media networking feature in the application as cooperation would definitely help spread information and enhance the content as it would allow members to extend their networking. But, this SME portal has an issue and bad response from the users. The author stated that the team of developing this KMS are expected that the SME portal is to be successful and will receive good feedback from users. However, the feedback that has been received by the users was a bit disappointing. The author also gives their opinion and observation that the unsuccessful of the SME portal is because of the lack of knowledge during the developed KMS. It can be concluded that the lack of knowledge and skills in the process of developing KMS can cause major setbacks in the successful use of the knowledge management system.

It can be concluded that enough knowledge and skill is required in order to develop a successful KMS. Based on the several articles that focused on developing

and implementing the system also mentioned that there are various types of challenges during the process of implementing the KMS. In order to overcome the challenges, we must have enough knowledge integration and also training about the KMS. This is also supported by Vukasinovic, N. (2018) successful implementation of KMS includes a strategy a plan that needs a practical approach. Persons, systems and technologies should be concerned with together, not in a single element. Most companies fail at this stage because they see KM as a technical implementation. The successful implementation consisted of three key components which are the creation of a knowledge-sharing environment, implementation of KM processes and implementation of a KM information system. All of these elements should be built together in order to produce an efficient system for data capture and management.

6   Practice and Key Success Factors

Knowledge management researchers recognize leadership engagement as essential for the successful implementation of knowledge management systems. According to Lisanti, Y. et al (2014) involvement of the experts, vendors, suppliers or other parties that related is needed to produce successful knowledge management systems. This is because they have knowledge that can be shared while developing knowledge management systems. Leadership knowledge of the organization's adoption plays a significant role in the effectiveness of the implementation. The involvement of top management help assists in efforts to gain approval and active participation from the remainder of the organizations. Based on Cagnazzo, L. et. al (2014) in order to produce the successful knowledge management system, the promotion of successful KMS in the enterprise network is essential to foster a culture of sharing stimulated by partner motivational aids from the network central actor using a common or diffuse IT system implemented and powered by the Human Resources component. It is also mentioned about several elements in critical success factors need to be validated after the performance assessment is done. The examples of critical success factors are first, give training and education from the central actor, second is impacts and third is coordinated marketing and image of the network.

Floyde, A. et al. (2014) has opined that the factor of successful SIMPLE their knowledge management system that had been developed is depending on the design for evaluation, maintain an open dialog between the internal and external, assign different levels of engagement for participants such as leadership or key rules, build public and private community areas and also apply the laws of society. It can be conclude that, in order to achieve success factor in implementing KMS, there are requires a variety of perspectives and aspects. This is because it is not easy to developing and implementing KMS in an organization and requires a variety of insights and knowledge from the experts and other parties that relate to producing a successful KMS.

7   Conclusion

Knowledge acquisition is becoming more of an important than a gain in sustaining a competitive advantage in any sector. The review of previous studyidentifies key factors to inform the successful implementation of knowledge management. Resources are presented that advise the discussions of specific obstacles that the organization can encounter when adopting knowledge management systems, best practices to be used and main performance factors to maximize implementation and knowledge management in small and medium-sized businesses. This article review has mentioned about the concept of the knowledge management system (KMS), benefits of the KMS in the small and medium enterprises (SME), the famous KM tools that being used by the SMEs, the development of KMS in small and medium enterprises (SME), the challenges of implementing the KMS and also had discussed about the best practices and key factors in implementing KMS. All the information is gained from the previous study and being discussed and give some perspective and opinion about the topic that had been mentioned. Lastly, the implementation of KMS in SME is very vital to increase business performance.

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