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Challenges and Benefits of Knowledge Management Practices in Electronic Government

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ABSTRACT

Electronic government or e-government is an information and communication technology application that aims to provide more open communication between governments, citizens, businesses, and other non-profit companies. In those interaction processes, there are knowledge transfer or exchange methods that must be covered and managed to accomplish the goal of e-government application. Moreover, knowledge, rapidly evolving, is increasingly recognized as a robust strategic resource for efficiency by all types of organizations and institutions either private or public. As the recommended solution, those processes can be covered by knowledge management (KM) method. This paper directs to present insight into benefits and challenges for KM implementation in e-government. A total of five research papers have been reviewed by using a systematic literature review method mentioned Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA). As a conclusion, there are five benefits and six challenges for KM implementation in e-Government.
Keywords : Systematic Literature Review, PRISMA, Knowledge Management, E-Government

I. INTRODUCTION

Nowadays, we are in an era of knowledge in which knowledge is produced massively in the form of tacit and explicit knowledge. If it is managed well, then it will be a significant factor to support value-added (Choy & Suk, 2005; Kareen, Indra, Cahyaningsih, Noprisson, & Giri, 2017)

Information technology (IT) has become the supporting tools for managing data, information and knowledge (Sadikin, Fanany, & Basaruddin, 2016). By using IT, knowledge management process can be effectively worked to deliver the competitive advantages for an organization, including public sector. Government as a public sector delivers public service to civilians, enterprises, non-profit organizations, and other governmental organizations (Leidner, Alavi, & Kayworth, 2006)(Singh, Goyal, & Sharma, 2012).

In the perspective of knowledge management, the government has different traits with enterprises (Fitrianah, Hidayanto, Zen, & Arymurthy, 2015). Consequently, knowledge management practices to support government aims is different from knowledge management implementation for enterprises. This study aims to analyze the challenges and benefits of implementing KM in government.

II. LITERATURE REVIEW

Knowledge points to information that facilitates action and decisions or information with direction. Therefore, knowledge is marked as the strongest and the most valuable among data, information, and knowledge (Fernandez & Sabherwal, 2015). Knowledge can subsist within people (individuals or groups), artifacts (practices, technologies, or repositories), and organizational entities (organizational units, organizations, inter-organizational networks) (Fernandez & Sabherwal, 2015).

Knowledge has become a worthy resource for organizations. It is the most meaningful resource for achieving competitiveness of a business. (Fernandez & Sabherwal, 2015; Leidner et al., 2006; Singh et al., 2012) There are a couple of types of knowledge view, tacit and explicit. Tacit knowledge includes insights, intuitions, and hunches remain inside individual brains, while explicit knowledge typically refers to knowledge that has been formed into words and numbers. Mostly, knowledge is owned by individuals in the form of tacit knowledge which is difficult to be shared and altered (Fernandez & Sabherwal, 2015).

To be arranged and organized easily, tacit knowledge needs to be changed into explicit knowledge. On the other side, explicit knowledge needs to be absorbed in the form of tacit knowledge by organization people to be implemented to an organization process. SECI is a model for transforming between tacit and explicit knowledge. SECI stands for Socialization, Externalization, Combination, and Internalization (Ansari, Youshanlouei, & Mirkazemi, 2012; Lin & Dalkir, 2010). Figure 1 shows the alteration between tacit and explicit knowledge in the SECI model.

Knowledge management is the processes required to generate, capture, codify, and transfer knowledge across the organization to obtain a competitive advantage (Fernandez & Sabherwal, 2015). The goal of KM in the digital age is to provide online, a real-time path to knowledge, information, and data throughout the organization and to its clients which serve as enablers and catalysts for innovative application in government services (Tsui, Lee, & Lee, 2009).

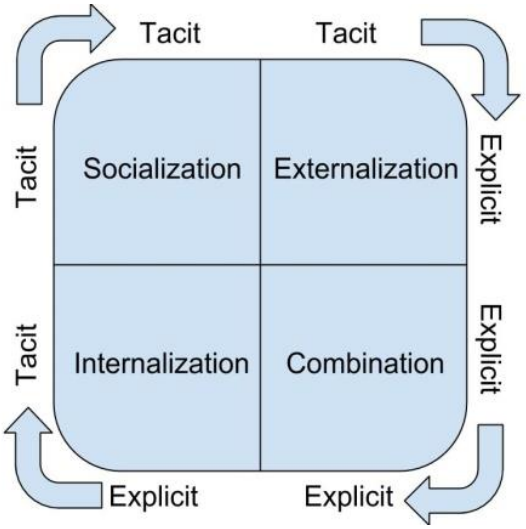

Figure 1. Nonaka SECI Model (Fernandez & Sabherwal, 2015)

According to (Fernandez & Sabherwal, 2015), there are four main knowledge management processes:

1) Knowledge Capture

In knowledge capture, there is no production of new knowledge. Knowledge capture is the process of regaining either tacit or explicit knowledge that remains within individuals, artifacts, or organizational objects (Fernandez & Sabherwal, 2015).

In this process, current knowledge is captured and then stored, usually in various knowledge patterns. Externalization including internalization is the KM sub-processes related to knowledge capture. Externalization is used to acquire tacit knowledge from people's thoughts and then transform them into explicit knowledge. In contrast, internalization is the process of learning explicit knowledge, for example from a paper or a manual, and locates them as tacit knowledge in individual minds (Fernandez & Sabherwal, 2015).

2) Knowledge Discovery

Knowledge discovery is interpreted as the growth of new explicit or tacit knowledge from data and information or the synthesis of prior knowledge (Fernandez & Sabherwal, 2015).

Knowledge discovery can be achieved during combination and socialization. Combination expects to form a new explicit knowledge by blending or synthesizing multiple explicit knowledge, while socialization purposes of stimulating new tacit knowledge by giving other tacit knowledge (Fernandez & Sabherwal, 2015).

3) Knowledge Sharing

Knowledge sharing is the process through which explicit or tacit knowledge is transferred to other individuals. Sharing implies effective two-way knowledge transfer. Knowledge sharing could happen across individuals, groups, or organizations. Tacit knowledge sharing is achieved through socialization, while explicit knowledge sharing is accomplished through the exchange process. Knowledge sharing is one of the fundamental processes in knowledge management because it concentrates on the involvement of people. Excellent knowledge sharing could commence to effective knowledge management (Fernandez & Sabherwal, 2015).

4) Knowledge Application

Knowledge application is the process through which knowledge is employed within the organization to make decisions and perform tasks, thereby providing to organizational performance (Fernandez & Sabherwal, 2015).

It is the top process where the knowledge that has been captured and synthesized is employed as the decision-making sources. In other words, knowledge application depends on the availability of knowledge obtained through other KM processes. High-quality knowledge combined with qualified knowledge application leads to high-quality decisions for an organization. Knowledge utilization can be in the form of direction or routines. Direction comprises the transfer of instructions or decisions and not the transfer of the knowledge needed to make those decisions, while routines involve the utilization of knowledge rooted in procedures, rules, and norms that guide future behavior (Fernandez & Sabherwal, 2015).

In e-government perspective, knowledge is observed as a strategic resource for enhancing administrative processes in all types of organizations either private or public. With the emergence of e-government as an approach for setting an efficient and open government, the role of knowledge shifts more prominent and predominant. As its function for ensuring the social establishment, the government has a very crucial role in decision-making at the official level (Wimmer & Traunmüller, 2004).

In general administrative action, (Wimmer & Traunmüller, 2004) sees governmental work involves manifold types of knowledge :

- Knowledge of legal regulations and their use in processes of an administrative decision.
- Knowledge concerning the elements to which the actions of the administration are directed.
- Knowledge about the possible effects that the communication of an administrative act entails on the environment of the administrative body. This also includes knowledge about the own resources and abilities to influence this environment as well as to enforce the law.
- Knowledge of the internals of the administrative system in general. This is almost in the sense of internal accounting and evaluation.
- Expertise knowledge when implementing the general knowledge of particular cases.
- Knowledge how to shield basic civil rights.

III. RESEARCH METHODOLOGY

The research methodology is adapted the PRISMA protocol. PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) as follows

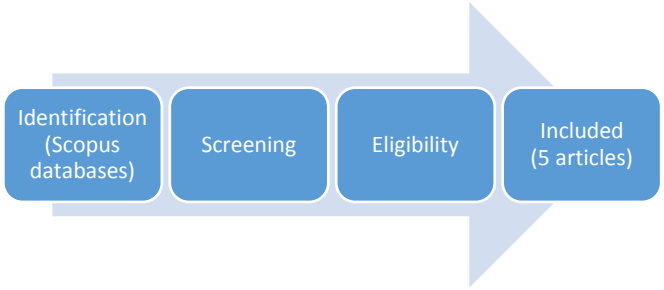

Figure 2. Research methdology

Based on the figure above, there are four-phases of research methodology, i.e., identification, screening, eligibility, and included. The reason to choose PRISMA as a research method is it provides a checklist that can be used to direct track of the detailed items that should be drafted in the report to guide systematic reviews and meta-analyses. (Liberati et al., 2009). The five paper are:

1. Dewah, P., & Mutula, S. M. (2014). Knowledge retention strategies in public sector organizations: Current status in sub-Saharan Africa. Information Development, 32(3), 362–376.
2. Horta, A., Mader, I., & Schultz, P. (2016). "Wien Mags Wissen" - The Knowledge Management of the City of Vienna. Procedia Computer Science, 99, 220–222.
3. Singh, A., Goyal, D. P., & Sharma, S. (2012). Knowledge Management & e-Governance: A Case Study of e-Kiosk in India. 2012 Seventh International Conference on Knowledge, Information and Creativity Support Systems (KICSS), 111–117.
4. Young, N., Nguyen, V. M., Corriveau, M., Cooke, S. J., & Hinch, S. G. (2016). Knowledge users' perspectives and advice on how to improve knowledge exchange and mobilization in the case of a co-managed fishery. Environmental Science & Policy, 66, 170–178.
5. Zhou, Z., & Gao, F. (2007). E-government and Knowledge Management. 7(6), 285–289.

IV. RESULT

A. Challenges

While performing knowledge management carries many advantages for e-government, there are still a lot of barriers and challenges encountered in developing KM for e-government. Figure 3 shows the challenges lined in implementing knowledge management in e-government.

Figure 3. Challanges of KM implementation in electronic government

Based on several sources, there are six challenges of KM implementation in electronic government:

1. Unorganized governmental knowledge (Singh et al., 2012)
2. Digital literacy (Singh et al., 2012)
3. Lack of high quality ICT resources (Dewah & Mutula, 2014; Young, Nguyen, Corriveau, Cooke, & Hinch, 2016)

4. Lack of strong leadership (Singh et al., 2012)
5. Lack of good policies (Singh et al., 2012)
6. Budgetary constraints (Dewah & Mutula, 2014; Singh et al., 2012)

Governmental knowledge is usually disorganized. There are various knowledge standards among departments so that combining them will be difficult. The knowledge is also not renewed regularly, not available entirely, or might be obsolete (Sensuse, Prima, Cahyaningsih, & Noprisson, 2017).

Digital literacy shifts another challenge in KM implementation in e-government. Citizens' educational backgrounds are diverse. They are often unable to cope with the logic of administrative thinking and did not comprehend the legal language. They often need active assistance because little textual information does not satisfy. Not only from the perspective of citizens, but e-government also demands a high quality of ICT human resources. The quality of ICT people plans the quality of KM implementation in e-government.

There is still a lack of sufficient policies and legislation to provide roadmap or action plan to manage knowledge in e-government. It should be supported by strong leadership so that the policies are implemented. The policies should govern the standard of knowledge management in e-government for the whole country.

The other significant challenge related to KM implementation in e-government is the budgetary constraint. Technology, as well as high-quality resources, also cost a lot. The government requires drawing the complete implementation thoughtfully in order to avoid losing money.

B. Benefit

Knowledge has become a robust resource for organizations nowadays. Managing knowledge will bring many benefits, including for government sectors. Figure 4 depicted the benefits of implementing KM in e-government.

Figure 4. Benefits of KM implementation in electronic government

Based on several paper, there are five benefits of KM implementation in electronic government:

1. Enhance governments' competence (Singh et al., 2012)
2. Enhance partnerships among stakeholders(Singh et al., 2012)
3. Connect citizens and government (Singh et al., 2012)
4. Promote healthy development of e-government (Singh et al., 2012) (Singh et al., 2012)
5. Raise public service quality (Horta, Mader, & Schultz, 2016; Singh et al., 2012)

In general, the advantages of KM implementations in e-government can be viewed from pair perspectives, internal and external. Internally, KM implementations enhance governments' competence and partnerships among stakeholders. Competence is advanced both for the staff and the institution. The

staff's quality is improved because the knowledge sharing process promotes learning for every staff (Sensuse et al., 2017)

Knowledge sharing also improve interaction among stakeholders and thus perform the decision-making process easier. The institutions' quality is also developed because knowledge application supports the effectiveness of business processes. Externally, KM implementations in e-government could unite citizens and government, support healthy e-government development, and thus elevate the public service quality. Knowledge management makes public service more accessible to citizens. This drives to a more healthy and transparent government.

V. CONCLUSION

Study related to KM implementation in e-government has been produced for more than ten years ago and has been overgrowing in recent years. Public sectors have now considered knowledge management as an integral part of e-government.

The benefits of KM implementation are perceived by both government and citizens; government processes become more efficient and thus public service delivery become more transparent. Challenges encountered in implementing KM in e-government include unorganized knowledge, digital literacy, lack of intellectual ICT resources, lack of strong leadership, lack of good governance, and budgetary constraints.

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