

VOLUME 4, NUMBER 1, JUNE 2014 ISSN 2231-8836

JOURNAL OF INFORMATION & KNOWLEDGE MANAGEMENT



UNIVERSITI
TEKNOLOGI
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JOURNAL OF INFORMATION AND KNOWLEDGE MANAGEMENT
Volume 4, Number 1, June 2014
ISSN 2231-8836 (E-ISSN 2289-5337)

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- to assist academicians from local and foreign universities, business and industrial sectors, government departments and academic institutions, on publishing research results and studies in the areas of information management, records and archives management, library management and knowledge management through scholarly publications.

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Suggested Cataloguing-in-Publication Data

Journal of Information and Knowledge Management

Vol.4, no. 1, (2014) -

Shah Alam : Faculty of Information Management

ISSN 2231-8836

1. Library Science – Periodicals 2. Library Science Malaysia – Periodicals I. Z671

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IMPLEMENTATION OF ELECTRONIC RECORDS MANAGEMENT SYSTEM (ERMS) AT NATIONAL ARCHIVE OF MALAYSIA (ANM)

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Abstract: *Electronic Records Management System (ERMS) is one of the most important aspects in managing electronic records. It was not only mend for digital forms of records but also be able to monitor both types either in physical or electronic forms. In this research, it was shown that the use of ERMS becomes a compulsory thing in managing the records in organizations. National Archive of Malaysia (ANM) was being chosen as an organization for a case study in this research. Then, the use of TRIM Context as a platform in managing the records at ANM becomes the strength of this research. While testing the software performance, ANM comes out with the standard and works in line with the ISO. Then, acceptance level of users towards the software was also being identified and discussed in the data analysis. Finally, this research has proven that an implementation of ERMS at ANM gives a positive impact to the organization, staff, and the software as well.*

Keywords: *Implementation, Record, Records Management, Electronic Records Management System (ERMS), National Archive of Malaysia (ANM).*

INTRODUCTION

In Malaysia, the improvement or development in the ICT becomes the main focus of the government to come out with the standard and policy and get a lot of activities to be involved in the fulfillment of e-government. Then, each of the government agencies should look forward to this matter in order to comply with the standard of ISO 15489. In other words, the activities of each government agencies in Malaysia should be able to link with other agencies electronically. This will encourage or improve the business transaction in daily operation without having any problem towards the end of the process. This is because of most of the solution or software has already being tested and used by first world countries.

STATEMENT OF PROBLEM

The development of ICT resulted in changes within the organization in terms of managing their records. The main changes were on the adaptation of printed form to digital form. This issue becomes the main focus of all organizations in having one solution that can handle and manage their record properly through their entire business environment. Therefore, public or private organization must take actions on this matter in order to support the development of the ICT and government policy in managing all the records. However, there are several of things that need to be done to ensure the implementation of the system meets the government's objective.

Besides that, based on the previous research, the use of electronic record management system was not implemented properly and it caused many problems in managing and handling all the records in organizations. One of the reasons of failure is because of they do not have the actual system that meet the standard of ISO and thus, it is not comply with the record management concept and policy. The lack of knowledge in record management becomes the crucial problem in implementing the ERMS solution in the institution. This will be the major challenge for the ERMS solution to be fixed in the institution. Therefore, the knowledge in record management will lead to a better process and understanding on the importance of managing the record from the implementation until the disposal part.

In this institution, most of the users or staffs who deal with the system do not have the knowledge in records management. This is because of they do not have the interest to use this system in managing their record. Other limitation is, the facilities that are being used in supporting ERMS solution are not meeting the proper specification and thus, it will affect the entire system. The hardware specifications also bring the limitation of this study in getting the actual result of using the ERMS. In other words, most of the hardware should have a greater specification and can work in line with the system performance and functionality.

For instance, Arkib Negara Malaysia (ANM) is one of the examples of public institution that deals with the use of ERMS. ANM itself governs the standard and policy to ERMS solution and uses the system based on their policy and standard. By having their own policy, most of the activities are based on their need and workflow. The ISO standard and system standard have already stated in the organization, but there is a lack of effort in deriving and monitoring the system that already complied with those ISO standards.

OBJECTIVES

The objectives of the study are as follows:

- i. to study the implementation of ERMS among ANM's staff in terms of system implementation.
- ii. to identify out the factors that influenced the implementation of the ERMS solution.
- iii. to determine the ERMS specifications for ANM in terms of standard compliance with ISO.
- iv. to identify the benefits of using ERMS solution among ANM's staff.

RESEARCH QUESTIONS

- i. How does the implementation of the ERMS solution in ANM?
- ii. What are the factors that influenced the implementation of the ERMS solution?
- iii. What are the ERMS specifications that suite to the ISO?
- iv. What are the benefits of using the ERMS solution among the ANM's staff?

SIGNIFICANCE OF THE STUDY

- o This research can give some overviews in handling problems and act as a platform in bring any solution to the problem occurred.
- o The finding of the research can be used as a reference for any record manager in managing and handling the record more effectively and efficient.
- o The finding of the research also can be used as a reference for software developer to develop the system that must be complying with the ISO standard.

LIMITATION OF THE STUDY

- o This study is limited to 5 departments only at ANM.
- o This data was collected from selected people and not to the all users.

- o This study focussed on the ERMS experiences on the system performance and not to the development and architecture of the system.

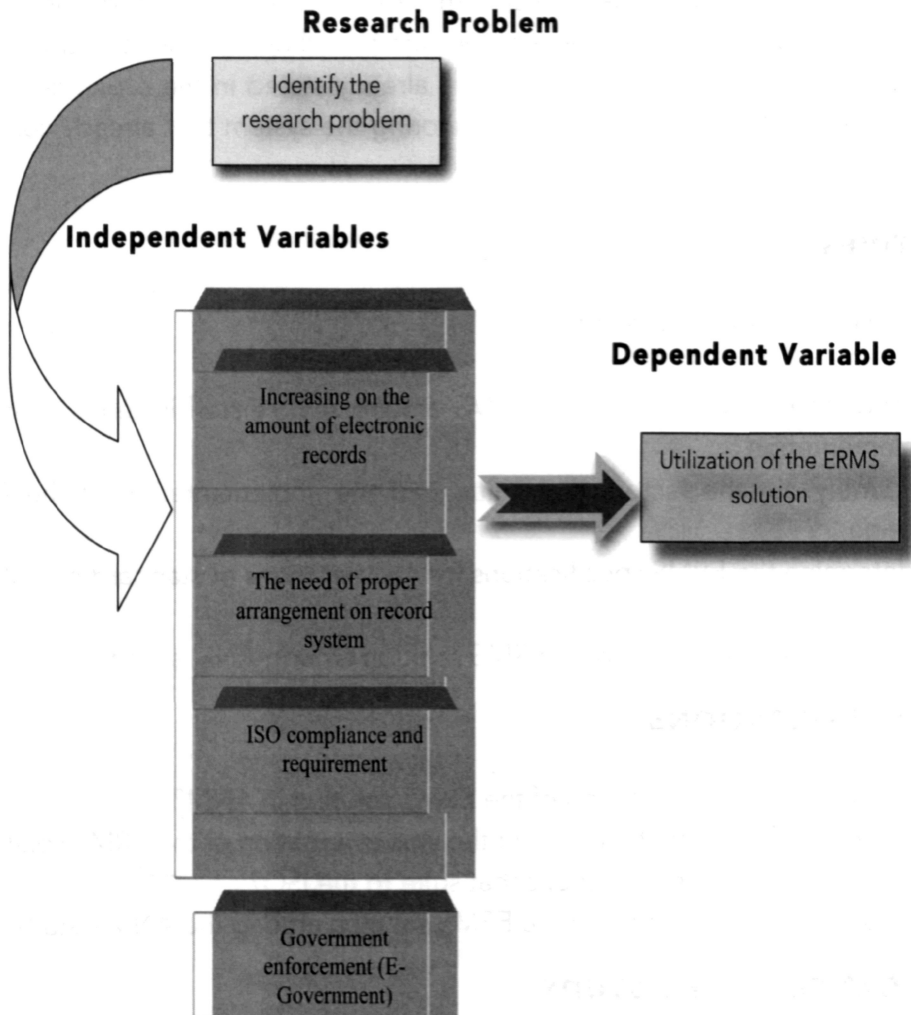


Figure 1: *Theoretical and Conceptual Framework*

The figure 1 above shows the framework of this research from the beginning stages of research until the last process. The first stage is identifying the research problem that includes the problem statement and ways in finding the solution to solve the problem. In the second stage, the framework shows on the independent variables that are based on the objectives of the research. These independent variables become the main focus for this research in terms of gathering all information and data that is needed in the research. Independent variable can stand on its own without depending on any variable.

On top of that, independent variables seem to cover the problem that has been identified in the first stage. By having these variables, the problem can be solved and a solution can be formulated that can bring more relevance to the development of the system. The next stage is focusing on the dependent variable. The dependent variable depends on the independent variables and needs to be fulfilled based on the achievement or completion of independent variables. Then, after every element has been critically analysed and identified, research questions were designed to achieve the objective of the research in order to identify the problem that occurred in the system. To make use of this framework, each step must be followed accordingly to ensure the comprehensive output can be produced.

LITERATURE REVIEW

There are numerous articles, books and journals that were reviewed in order to create an authentication of this research in generating and integrating the ideas with the previous research or study.

According to *Reed, Barbara, (1997)*, the ERMS solution becomes a tool in designing and evaluating the electronic record keeping system and it shows the importance of the storage. For ERMS solution, it includes the portion or function of the electronic recordkeeping system because it comes together in one solution. The way of designing and implementing the solution is based on the policy or business rule of each organization. By handling the electronic record in electronic form, all records can be kept or stored in a proper storage area with the specific location that has been assigned.

This is the area that needs to be highlighted for any organization that deals with the ERMS solution. In this case, the learning and understanding process on the record itself is very important. This review falls under the categories of factors, influencing the usage of ERMS solution in the organization. By experiencing the functions and features of the system, each activity can be done in less time in a proper way.

According to *CITU (2000)*, the concept of electronic records management must become the strength of the organization in managing and implementing the system. In any approach or system, the records management should be able to manage and organize the records effectively without having any problem in the process of appraising and disposal. Therefore, ERMS solution must become the best platform in everyday transaction to ensure all organizations use the same solutions and activities in managing their records.

By enhancing the system that is already being used in the system, it will generate the new environment in the system without facing much problem and miscellaneous

during the system implementation. The research or analysis on the existing system should be conducted in order to ensure there is no repeating error comes into user screen during the process of using the ERMS solution. This issue will fall under the factors that influence the use of ERMS solution in the organization.

This has been stated by *U.S. Department of Energy (2000)*, which insists that the records management system or application must have the standard to be applied to an ERMS solution. All the ERMS solutions must comply with the standard to ensure each of the aspect in record management is being fixed and can be used in managing the records. The word "mandatory" means that it is compulsory. Meaning that the architecture on any ERMS solution must comply with the standard that provided by the ISO. Most of the solutions were already complying with the ISO but, it seemed like they must be able to comply with other specific standard on ERMS standard such as NARA or Moreq. These two standards are the pioneers in the records management concept and understanding because they have involved in record management field for too many years. In this review, it falls under the category of standard that must be complied by any ERMS solution before it can be used by the organization.

The use of *ERMS* might become limited because there is no way to escape from complying with the standard and practices of records management. According to *Yakel, Elizabeth (2001)*, it shows the awareness on the benefits that are finally being realized by the people, especially on the importance of the electronic records management system. In the beginning of ERMS use, it is only focus on the specific organization until everybody realizes that there are lots of benefits and advantages that can help them in handling their job effectively and efficiently. The ability to handle and manage all records in any format is the strength of ERMS. The traditional or conventional process may take a longer time to be completed or achieved. By having the ERMS, all the information and records can be classified and filed in the proper arrangement and manner.

These are the things that the author wants to point out in terms of relevancy in using and handling the record in electronic format. In this research, this review falls under the benefit of ERMS and the importance of ERMS towards the development of the system in the organization. *Jaana, Kilkki, (2002)*, described that the ERMS solution helps the organization in handling all the records effectively. It also shows that the record can be accessed through or from anywhere without facing and having a problem. The problem of the system is not directly on the system itself but rather on the way and how people manage the system.

The ERMS solution also helps department to do an appraisal and disposal process without having or facing any problem. In this case, the ERMS solution is the main

activity that needs to be done or used effectively without arguing on changes or development. The records and information can be delivered easily and faster than before. This is because the means of handling the system are based on the basic understanding on the records management. As mentioned *Karen Handel & David W. Carmicheal (2003)*, the use of electronic record could help the organization and the business transactions operated in much easier and faster way. However, this activity or method must have the standard and act that can manage and preserve the needs effectively information.

RESEARCH METHODOLOGY

The research methodology includes the way of data is captured and analyzed. The specific software that has been used in this study becomes a tool in identifying each of the method that is already being used in the study. The sample of population, research method and data analysis design represent on how the data or information was collected and captured later. The aim of this research is to identify the significance of ERMS solution in managing all the records either in a form of paper or electronic at the National Archives of five Negara Malaysia. Therefore, 5 departments were selected, based on its functions and activities in order to identify the implementation and efficiency of the ERMS solution that has being used by them in managing the record throughout the entire organization. The methodology on this research was questionnaires. The questionnaires were distributed to 20 staff from the 5 selected departments. Each department provided 4 people to answer the questionnaires. The questionnaires were presented in the combination of open-ended and close-ended questions in order to share with the respondents on the system performance and functionality.

SAMPLE OF POPULATION

Questionnaires

One set of questionnaires had been distributed to the staff of ANM. It consisted of close ended and open ended questions which comprised the questions on the concept, system use, and the implementation of the system towards achieving ISO standard. The 20 staff from 5 different departments was being selected in answering all the questions. The questionnaires were being used to identify the experience of ERMS implementation through the entire organization.

Review on research paper

In this method, the way of users handle and experience the ERMS has being identified in this research based on the literature review from other research paper and readings from related journals.

RESEARCH DESIGN

In this research, the quantitative approach was being used in order to have a better input in having the precision on the information. This approach acts as a main tool in collecting the data in this research. Then, the questionnaires were distributed in order to collect the specific data. It was ensured that the data and information that have been collected from the respondents were given the maximum input on the research without missing any important point.

DATA COLLECTION

The process of collecting data is based on the questionnaires that have being distributed to 20 respondents from The National Archives of Malaysia. The questionnaires sought the respondent to give answers that describe their own experience in using the system. The questionnaires also consisted of open ended part that enables the respondent to give their opinion and suggestion.

DATA ANALYSIS

Data analysis process includes qualitative data analysis using computer program, Data Statistical Package for the Social Science software (SPSS). SPSS is one of the tools used to generate the statistic of the research which is not only for close ended question but also on the open ended question. This software is widely used by most of the researchers because it contains diagrams, charts, percentages and able to identify variables of the research. There are two categories of statistics under SPSS which are descriptive statistics and inferential statistics. In this research, the inferential statistics is used to analyze the data as questionnaire output is suitable to come out with the statistic information.

There is a description on the data analysis that comes out from the questionnaires which have being distributed to 20 users of ERMS at Arkib Negara Malaysia (ANM). In this case, the data collected shows that each respondent has their own interest and experience in using the ERMS (Electronic Records Management System) that is called TRIM Context. In other words, there are many advantages and disadvantages in using ERMS solution.

In this research, data collection has been shown in the form of graph and table. Most of the answers or data analysis are described by using graph. This is because of graph or figure is more precise compared to other methodologies as it is able to create more indicators in order to ensure the implementation of the system can be achieved. But, there are some questions which are not answered by the respondents

Table 1: ERMS Suitability

		Frequenc	Percen	Valid	Cumulativ Percen
Vali	Ye	1	90,	94,	94,
	N	1	5,	5,	100,
	Tota	1	95,	100,	
Missin	Syste	1	5,		
Tota		2	100,		

The suitability of the system can be viewed based on the use of ERMS through the entire organization of ANM. This is because the use is not only focused on the registration department but also on the overall department at ANM. This is where the ERMS showed the availability of the system in terms of business rules and standard. The system becomes the most suitable system because ANM requires the system that has compliance through a records management concept and also to the ISO standard. This is where this system becomes the most suitable system that is being used by ANM. The specification of the system is also being recognized as at connects and builds a great relationship with all activities at ANM.

The table above shows that 18 respondents agreed on the suitability of ERMS at ANM. This situation shows that the use of ERMS brings benefits the organization. Most activities at ANM are directly related to the records management. The ability on each system functionality showed that ERMS is suitable to be apply within their working environment in ANM. The environment which enables and includes the implementation of ERMS, seems very important to ANM to manage both types of records either in a form of physical or electronic.

There is one respondent who felt that the system is not suitable to be applied in ANM. This is because he might not use ERMS in all activities within his working environment. This result shows that ERMS is the most suitable application that should be used in managing all the records in the organization. Meanwhile, some of the activities visualized that ERMS is a right application that should be used in monitoring the movement of records. The flexibility of the system brings the implementation and suitability of the system.

Table 2: Importance of ISO 15489

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	12	60,0	63,2	63,2
	Sometimes	5	25,0	26,3	89,5
	Seldom	1	5,0	5,3	94,7
	Never	1	5,0	5,3	100,0
	Total	19	95,0	100,0	
Missing	System	1	5,0		
Total		20	100,0		

The importance of standard compliance also contributes to the implementation of the system. The ability in managing ERMS, based on the standard and compliance brings an important issue to ANM. The awareness on the importance of ISO 15489 is not being fully understood by all workers and users. This is because they are generally focused on the act and policies that govern by ANM. The policies that are being stated and assigned by ANM showed the activities that need to be completed by each individual in the organization.

The standard and policies give them guidelines in ensuring every activity and transaction can be performed and managed according to the business rules. Based on the table above, it shows that 63.2% of the users always think and feel the importance of standard, especially on ISO. This is because ISO is the main standard that needs to be complied in order to have an excellent system in managing documents and records. ISO is the major standard that must be used in generating any ERMS solution in order to protect the record effectively. The effective system can be clarified based on its standard. The system that comply with the ISO will become the priority in managing the record in the organization.

In this case, more than half of the ANM respondents were aware about this matter. This is because, most of them were from records management field and deal with records management in their daily operation. The main point on having the standard is the means of protecting and securing the information from being stolen or lost. The standard will generate the access control in ensuring each of the activity brings the implementation on the use of system. The implementation in this point of view might be focused to the ability of the system in tracking the records. The system can also monitor movement for records by having the standard on each type of records.

The response on the system is different from one respondent to another. This is because most of them are aware about this matter, only 2 or 3 respondents do not think about this matter at all. The problem is, when there are some activities done in the system; they do not complete the activity according to the standard. They only complete the work based on their conventional working style. The possible output that is generated is not parallel with the top management needs. This is the situation where some of the records cannot be viewed or managed well by the system. The system is already being connected to the records management standard and the problem will occur if the user avoids following the rules and procedures in managing the records in the system.

The main aspect that needs to be emphasized is on the standard itself. Users more or less understand the system; and this affect the use of ERMS and the implementation of the system. One of the most important activities that need to be emphasized is on the use of the system, especially in the functional activities. The functions and features of the system can be more effective to be used if the user is particular on the standard. Then, the system can operate well according to the organization policy and objective

CONTRIBUTION TO RECORDS MANAGEMENT

This study has come out with several outputs and could become the reference to public agencies in understanding the business rules of the organization, especially for the public agencies. A midst the advance of ICT the government has stated that each organization must apply the system on electronic records management. This is where the ANM can play pivotal rolein the implimentation of records management. The advantages in the implementation of each activity must be well performed and managed in the organization

The public agency such as ANM, has an authority in managing and implementing the system. This means that all activities must be tied up to the records management concept. The purpose of this study is to evaluate the level of understanding which can be taken from user's response. Then, as far as benefits and advantages that they have experienced in the system, it will lead to the implementation of the system. The output of the system can summarize each activity that is already been done by the system. ANM should lead to become the first government agency that apply the electronic records management. The nature of their working environment also becomes a reference to other users in different organizations.

There are several contributions of this research to the records management:

- This study can be used as a reference by agencies embarking on electronic records management system within their working environment.
- The staff in public and private agencies can use this study as a guide in monitoring their organization's activities.
- The organization can bring this study as their reference material in order to give a deep understanding on records management to their staff.
- This study contributes to the ANM collection in their project implementation.
- This study act as a tool in solving the problem in the organization that they have already being involved in ERMS.
- This study provides awareness for the users in understanding standard and its compliance.
- ANM can bring this study as their main output on the first phase of their implementation.
- ANM can also use this study to train their new staff.
- This study also helps the records manager and administrators to manage the system effectively.

CONCLUSION

The implementation of ERMS at ANM has being analyzed and it can be concluded that as a successful output on the system implementation. This means that the use of ERMS at ANM is effective in various ways. The major output showed that ANM users were satisfied with the system and it showed the implementation of the system is achieved. The major problem that occurs in ANM system is not on the system itself, but also through the networking infrastructure. This means that ERMS application is capable enough in managing all types of transactions in the ANM environment.

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