

Digital Transformation from Paper to Electronic Records at Government Linked Company (GLC)

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To Link this Article: http://dx.doi.org/10.6007/IJARPED/v12-i3/19236

DOI:10.6007/IJARPED/v12-i3/19236

Published Online: 20 September, 2023

Abstract

This paper highlighted the digital transformation practices from paper-based records into digital format in Government Linked Company (GLC). Technology immensely changing from time to time which affected widespread concern around the world widely in various fields which includes the management of records in organizations. Globally, recordkeeping has transformed from paper-based to digital formats with a patchwork of achievements, failures, and difficulties However, it is undeniable that most organizations are still not aware of the changes of technologies and managed to practice traditional method of records keeping due to certain conditions. Numerous sectors will continue to adapt and develop as technology advances to move in accordance with the changes of technology and boost efficiency. Improper planning of record management in an organization can led to difficulties of longterm preservation and information retrieval in future use. This is where this study tends to measure the perceptions of staff towards the transformation from paper-based into digital format of record preservation in Government Linked Company. The perception of staff acts as an indicator to identify the factors that contribute to the failure of implementation of digitization in an organization. Thus, it is believed that this study can improve the issues of implementation of digitization of records and enhance the high quality of information retrieval for future reference in an organization.

Keyword: Digitization, Record Management, Digital Transformation, Record Keeping

Introduction

Technology growth tremendously in the twenty-first century as the development of technology resulted in changes within the organization, especially in terms of managing the records. This newer development is allowing preservations to secure information that will still be accessible to future generations (Perry, 2014). Even though digitization and digital preservation are quickly becoming the normal means of preservation for organizations and other cultural heritage institutions, there is still a lot of misunderstanding about what they mean and how they should be used. It is undeniable that some organizations are not aware

or given any exposure towards the changes of technologies nowadays and practicing the traditional method of records keeping due to certain circumstances.

As technology evolves, numerous industries will continuously undergo change and development towards globalization and digital to further increase efficiency. The growth of technology changes from time to time and every organization must be aware to keep update their practices in managing their records for long term preservation so that it can be accessible for future use. Practicing proper records management is crucially important in every organization. Basically, organizations have significant contributions towards the growth of the country in many aspects. Due to the fact that, organizations help in smooth transition in accordance with the dynamic business environment. It brings adaptability to the table in various fields and nature of businesses. The rapid growth of the digital economy has captured many corporate organizations in recent decades. The adoption of digitization is significant as they growth along with the changes of technology today.

Digitization of records has shown the emergence of new innovations that help most organizations to be efficient and systematic in terms of records management. Implementation of digitization towards record keeping can give benefits towards the growth of the organization for their future planning. Improper planning for managing the records management can lead to difficulties of information retrieval and information loss. This is because inappropriate records management in certain organizations might cause loss and be unavailable for future references.

Based on prior research by (Aladejebi & Oladimeji,2019), they stated that identification, classification, summarization, storage, transmission, retention, and disposal of records are all aspects of record keeping. This prior research also highlighted the record keeping Act as an aid in decision making and significant to business survival and success. Thus, it proved that the conversion from the paper- based records into the digital records in organizations is an effective way in managing the records that collected and gained in organizations from various field. Due to this fact, digitization of records plays an important role in improving way to meet the needs of the emerging digital era.

Literature Review

For the further on the implementation of digitization, these are the required details to be discussed thoroughly.

Concept of Digital Transformation

Almost every industry has undertaken several projects to investigate emerging digital technology. Due to these changes, digital transformation involves transformations of business operation, including the structure and management concept (Matt and Benlian,2015). The terms of digital records can be best defined as the conversion from the traditional method which is the printed records into the digital records. The process of transforming digital and electronic materials into digital records by scanning or otherwise converting them. The resulting digital copy, or digital surrogate, would subsequently be classified as digital content and faced the same basic issues as "born digital" resources in terms of protecting access to them (Dpconline, 2012). According to (Azim et al,2018), digitization is the process of converting information into digital format. In today's era, the management of the record keeping in any organization and cultural heritage like archival institution must be in accordance with the growth of technologies which changes rapidly from time to time. Digital records require appropriate skills and competencies (Moswen and Ngoepe, 2018). It is to

ensure that the management of records that preserved in the was securely preserved for long-term preservation. Thus, the conversion from paper-based records into the digital format seems relevant to be practice in the management of records.

Organization in Malaysia

It is undeniable that organizations produce countless numbers of records and information each day. However, most organizations are still not aware with the role of records management affects their daily operation although the existence of records might be old as the organization itself. Basically, organization refers to the collection of people that are involved in pursuing the same objectives. Any company created to carry out business is referred to as a "business entity." Malaysia consists of various type of business entity, and it can be divided into government, non- government, private sector, Government Linked Company (GLC) and statutory body. Each of the organization under specific types play vital roles in improving the economic and development of Malaysia.

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Concept of Record Management

Proper management of records and information is crucially significant to any organization for countless reasons (Bednar,2018). Good management of record keeping is needed in maintaining the high quality of organizational performance. According to Dikopulou and Mihiotis (2012), they opined that many organizations do not pay much attention toward record management. Proper record keeping gives numerous advantages in many aspects such as management, society, and the growth of the organization itself. Thus, these issues must be taken seriously to achieve higher development of the organization.

Record management is concerned with the generation, receipt, processing, storage, retrieval, and retention of records. Past research that has been conducted in Africa by (Mosweu & Rakemane, 2019) which stated that Sub Saharan Africa has enjoyed donor funding to promote in government accounting system but ended as failure due to poor records management. This can be clearly seen that improper record management can lead to failure of management because records management is a systematic control start from their creation, receipt, maintenance, usage until their disposition schedules. It indirectly helps in capturing evidence for any transaction for businesses. (Asogwa, 2012) pointed out that the culture of keeping and management of physical records today is being taken over by records in electronic formats to enhance performance, transparency, and accountability in government.

Types of Record

Records consist of various type, and they are administrative records, legal records, fiscal records, historical records and other. Records also can be found in digital format which is electronically such as email. Thus, brief definition is explained as defined by Southern Connecticut University (2022) as below:

Administrative Record

Administrative records can be defined as the records relating to the agency's beginnings, evolution, pursuits, and successes.

Legal Record

Records with evidence of the State's legally enforceable rights or obligations are considered to be of legal value and they may include records that related to the right of property, records that related to the right of citizenship and others.

Fiscal Record

Financial transactions are the subject of records with financial value for an organization.

Historical Record

According to (Senturk, 2011) through her prior research stated by Pederson (1987) archival institution that consists of non-current records of an organization, institution, or individual that are chosen for preservation due to their ongoing value.

Electronic Record

As computer hardware and software become more user-friendly, the number of electronic records is growing quickly. This is due to the rising usage of email systems, the simplicity with which records may be accessed straight from the Internet, and the shift from paper-based to electronic formats. Electronic record management is the same as ERMS (Adam, 2007).

Needs of Record Management in an Organization

Records management is an essential component in an organization. This is because records can be considered as the memory of the organization. Records are being used as the future references for organization to conduct their business. That is where proper handling of record management is crucially important as it can provide legal defensibility, increased efficiency, and productivity of the organization. Prior research that has been conducted by Zawiyah (2000) highlighted that the life cycle of records begins when records are first organized, maintained and actively used by the creator.

Research by Charman in 1984, he summarized that the life cycle of records includes several phases starting from their creation until their final dispose. The process includes current records, semi current records, and inactive records. According to this prior research, current records can be defined as the records that are actively used in conducting the business of the organization, while semi current records is a record that are infrequently used to conduct business of the organization. These kinds of records usually transferred to records center while pending their ultimate disposal and lastly is the inactive records which means that, records that no longer used to conduct the business of the organization that often being transferred to archival institution if they hold value or destroyed.

Concept of Digitization of Records

Digitization of records is the process of converting from hard copy and non- digital records into digital format (Azim,2018). This definition is supported by National Archives and Records throughout an article entitled Strategy for Digitizing Archival Material for Public Access which clarified digitization as the process of preserving records for long term use in virtual form. As stated by Routhier (2014), she addressed digitization as the conversion from traditional, analog material such as books, maps and any other paper-based format of records into an electronic and digital copy. According to Conway (2010), digital preservation is the conservation of all digital materials, whether they were born digital, like emails and other electronic files, or have been digitized from analog materials.

Comparison of Digitization and Traditional Method

Large organizations mostly produced high volume of records on their daily basis. Most of these creations of records were shared within the government units to increase the growth of the organization and used to measure the organizational performance. According to ISO (2016) relevant records that have been created and collected must be properly arranged. Each of the records that are produced by the organization help to increase the productivity and must be properly arranged and preserved so that it can be used for making high quality of decision making that help the improvement of the organization indirectly. A record provides evidence of any transaction because records 21 and information are the sources of power to exercise control over citizens (Mosweu, 2019). United Nation Record and Archives (2010) stated that records are the vital resources that every organization needs to conduct their operation effectively. Thus, it is proven that proper management of records is the root of the sustainability of the organization.

Paper-based format of records keeping seems irrelevant to be implemented and practiced these days because technologies changes rapidly and this will cause the record keeping in organization become outdated and consume to difficulties to retrieve information. This supported by Fich and Castellanos (2018) which stated that paper-based system is not only irrelevant and cumbersome for retrieval and maintain but also exposed to natural or manmade disasters. As mentioned by (Azim et al., 2018), digitization is the process of converting information into digital format. It is the process of converting hard copies or non-digital records into digital formats. In other words, digitization can also best define as the conversion from the traditional and analog material, for example books, maps, and other paper - based items into digital copy. This is different compared with the term digital preservations which purposely conservation of digital materials either they were born digital like emails, videogames, and other electronic files. according to (Perry, 2014), throughout her research, the only to retrieve the information in fastest way and remotely by practicing digitization. Most of the cultural institutions such as libraries and archival institutions have moving out from paper based into digital format accordingly. This is because the management of records must be preserved securely for the future generation, that is why it must follow with changes of technologies so that they will be updated from time to time and reduce the possibility of becoming outdated.

Importance of Digitization of Records

Today, digitization can dramatically increase accessibility and new methods in keeping the records for further lifetime existence. Based on the past research that has been conducted by (Azim et al., 2018), researchers have pointed out which aligned with the Malaysian Standard,

the implementation of digitization increased the productivity of organization. Digitization can be accessible remotely at any location as long as the management has accessibility towards the materials and collection. This indirectly improves the productivity of the organization as the information can be retrieved and used on the spot without time consuming. This helps staff to less burden to be compared with traditional method which they need to retrieve one by one which may lead to time consuming, and they need to obtain physically to gain the information that fulfill with their need. It is undeniable that nowadays, the whole world faces an epidemiological attack that affects social and economic life. Natural disasters often happen without any alarming and our cautious. Thus, digitization plays an important role in preserving the information is essential to guarantee the long-term preservation of records since the disaster management strategy deals with the administration of an organization's resources and obligations to handle all humanitarian elements of calamities.

Record Management Skill and Knowledge

Human resources in any organizations, institutions, libraries play an instrumental role in transforming paper-based records into digital format. This statement supported by the past research that has been conducted by (Rafiq and Ameen, 2017), from this study researchers found that, one of the main barriers that blocks the implementation of digitization in university libraries of Pakistan from the perspectives of developing country was lack of skill among librarians to conduct this practice. It is undeniable that implementation of digitization in an organization requires staff that are equipped with skill and knowledge on how to conduct the process effectively. This statement is supported by previous research by (Huda et al., 2022) opined that, the digital requirement for digital transformation experience ought to consider the appropriate use of technological advancement. Since records management will require more focus on discipline and creativity than in the past, professionals in the field of records should be equipped with the necessary skills to effectively contribute to the digitization project. Prior research by Vrana (2011) found that, lack of additional education among the staff for implementing digitization crucially needed to perform the task successfully. This is because digitization needs skill and knowledge to achieve the high quality of work to be done.

ICT Infrastructure

Through study by (Rafiq and Ameen,2017) in university libraries in Pakistan, they found that, one of the barriers of implementation of digitization in university libraries of Pakistan is lack of technological resources and infrastructure. The implementation of digitization requires specific and special technology to conduct the project. Thus, this will make the digitization remain unexplored as this leads to achievement of the perceived outcome that are expected of digitization project. Moreover, Digitization project consists of both hardware and software. This can be challenging for the organization to adapt because format and data changes rapidly. Previous research by (Azim et al.,2018) both software and hardware changing at any time. Despite difficulties with the longevity of digital materials, the rapid changes of technology also lead to problems in implementing digitization in record management.

Policies

Policy or guidelines are crucially important in any process of digitization. Prior research by (Kalusopa and Zulu, 2009) summarized that lack of national policy framework on digital

heritage material preservations. Thus, this research recommends the need of national policies on digital material should be provided based on relevant legislation. Past research that has been conducted by (Azim et al.,2018) addressed policy of digitization consists of six (6) significant components for the digital imaging project such as Selection policy, Conversion, Quality Control Programme, Collection Management, Presentation and Maintaining Long Term Access. Based on previous research by (Norolazmi et al., 2018), In Malaysia, government departments do not have an electronic record management policy that is universally accepted.

Research Framework Model

Several frameworks that have been constructed through prior research have been revised thoroughly by the researcher. Thus, based on Figure 1, In the social sciences, researcher found that structural equation modeling (SEM) is a popular and effective method for multivariate analysis Beran and Violato (2010). Thus, this model delivers a flexible framework to develop and analyze complex relationships among the multiple variables which allow researchers to test the validity of theory by using the empirical model.

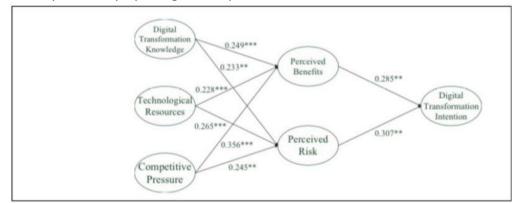


Figure 1. Structural Equation Modelling (SEM) statistical model diagram Tsai and Su (2022)

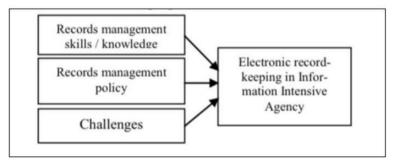


Figure 2. Conceptual Framework (Nurzeelawati Norolazmi et al., 2018)

According to prior research conducted by (Nurzeelawati Norolazmi et al.,2018), has illustrated the conceptual framework for the effect on the electronic record keeping in Information Intensive Agency. Thus, based on Figure 2, dependent variables are the effect on the electronic record keeping in Information Intensive Agency while independent variables focused on records management skills and knowledge, records management policy and challenges.

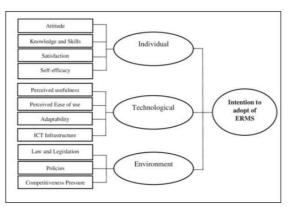


Figure 3. Electronic Records Management System Adoption (Mukred et al., 2019)

Based on the proposed framework by using UTAUT and TOE in Figure 3, the individual dimension refers to a set of four factors and there are, knowledge and skills, satisfaction, and self-efficiency while the technological dimension denotes to a set of four factors specifically perceived usefulness, perceived ease of use, adaptability and ICT infrastructure. Meanwhile, the environmental factors refer to a set of three factors including law and legislation, policies and competitiveness pressure. Thus, the proposed framework in prior study were illustrated using UTAUT and TOE model.

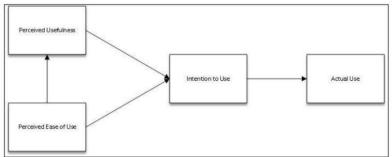


Figure 4. Technology Acceptance Model (TAM) (Naeini, 2012)

Researchers found that, Technology Acceptance Model which also known as TAM is the theoretical framework that are well-related to information technology. According to (Naeini,2012), Technology Acceptance Model (TAM) is the modification of the Theory of Reasoned Action (TRA) in the scope of Information System (IS). Based on the figure above, this framework described the individual's intention to practice a system that will be verified by the perceived usefulness and perceived ease of use towards the system.

Methodology

In examining and exploring the specific field of study, there are numerous numbers of techniques that are being applied by research to obtain data and information. According to (Bunawan, 2021), several techniques that are commonly applied are systematic, metaanalysis and scoping review technique. Reviews from research literature are carried out for several purposes such as to access and improve the state of current knowledge. Based on the research by (Aromataris and Pearson, 2014), they stated that the systematic review which also known as the "research synthesis" focused on providing complete, unbiased synthesis of many relevant studies in single document. They added, systematic review refers to uncovering all of the evidence and focus on research that report data rather than the concepts or the theory.

However, prior research by (Elliot et al.,2017) highlighted that it is challenging to keep systematic reviews current, yet doing so prevents a decline in the reviews' usefulness, accuracy, and currency. Meta-analysis is a method which combines statistical analysis of the quantitative finding of independent and similar studies and the results of the studies in consistent way (Demirel and Dagyar,2016). According to (Peterson et al., 2016) scoping review is as methodology designed that allow assessments of emerging evidence as well as a first step in development of research. The scoping review has increasingly become popular as a form of knowledge synthesis. Based on research that conducted by (Colquhoun et al.,2014) they opined that, scoping reviews represents a form of knowledge synthesis which combines a variety of study designs to thoroughly summarize and synthesize the available data to inform practices, programmes, and future research.

Through the explanations and definition of each of the methodologies applied, it can be clearly seen that the scoping review technique is selected and applied instead of systematic and meta-analysis. This is supported by (Hariharasudan and Kot,2018), which they highlighted that finding materials on the subject without any limitations on the available material resources is the goal of the scoping review. Thus, based on the discussion, the selection of scoping review technique in this paper is justified accordingly.

Result

In presenting the overall finding gathered from the prior research, this section is designed. This section is presenting the findings that accumulated based on prior research in digitization which is the digital transformation of paper-based records into digital formats in an organization, presented in this paper. In ensuring the entire findings are adequately presented, the proposed framework below in Figure 5, illustrated below is the findings that obtain throughout the framework from prior research in related field of study.

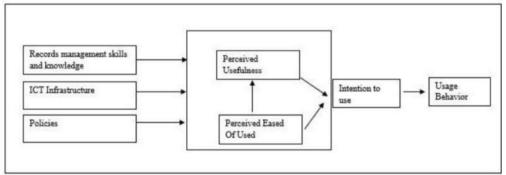


Figure 5. Digital Transformation in Record Management in An Organization

Based on Figure 5, the proposed framework was illustrated by adopting Technology Acceptance Model (TAM), which is commonly used in information technology. Basically, the variable of this framework is based on past research thoroughly as explained in Literature Review section. Hence, there are three (3) variables formed to be included to investigate the issues of implementation of digitization. The figure begins with presenting the issues in implementation of digitization based on prior research which includes the Records management skill and knowledge, followed by the ICT Infrastructure and policies. Therefore, all the variables that stated in Figure 5 were Linked and mapped with the process of TAM Model.

Conclusion

The rapid changes in technology have triggered the organization in various aspects, especially in terms of record management. Good management of record keeping is needed in maintaining the high quality of organizational performance and their growth. Each of the organization under specific types play vital roles in improving the economic and development of Malaysia. Depending on their roles and responsibilities towards nation, surely they have produced innumerable of records for their daily basis of operations. Overall, there are three (3) issues that arise in implementing the digitization in Government Linked Company which includes Record management skill and knowledge, ICT Infrastructure and Policies. By having proper management of records, it can ensure the security of data and information are secured and can be used for long term preservation for future use. It is believed that implementation of digitization in managing records enhances the high quality of information retrieval for future reference in an organization as the management of records were updated with the current changes in technologies accordingly.

The Digital Transformation paradigm also applies to the conversion of paper records to electronic records, which is a theoretical contribution. It can be applied to other academic fields as well, such as those that involve the electronic conversion of tangible papers or other information resources. In terms of the study's contextual contributions, the variables and aspects included in this investigation could be used as a remedy for any problems arising from the information society's transition to a digital economy. As a matter of fact, the two (2) categories of contribution agents that emerged from this research have the potential to facilitate the acquisition of new competencies and the transformation of information resources into more useful formats.

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