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## Records Management and Big Data Environment: The roles of records professional in managing big data

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### Abstract

The increase of big data lead to the need of an effective records management system. This study aims to provide the best guideline or practices suitable for managing big data through records management standards. The study will apply qualitative case method using interview as the tool to collect data from experts from the organization contributing to big data. This study set is to identify which records management practices are suitable and able to manage big data. This paper offers a new view and research by seeing Records Management standards as a method of handling big data issues.

Keywords: Records Management, Big Data, Records Professional, ISO 15489

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### 1.0 Introduction

Big data is about extensive data that arrives from various formats and sources. Big data consists of lots of information that needs to manage to get valuable data. Big data is crucial to organizations. The increase of big data due to the increase of data on the Internet of things (IoT) gave challenges to big data. Therefore, it is vital to have good management in dealing with big data. Records Management also plays a significant role today. Some study believes Records Management can help in decision making, provide rights and valuable information, and protect rights and interest in the information. In this paper, the writers would like to show the relationship between big data and Records Management that can be merged in dealing with big data. Moreover, this study will explore the roles of records professionals in Records Management in controlling big data issues. In the end, this paper will come out with the best guideline suitable for managing big data.

Records Management is known for a critical role in dealing with organizations today. Records management helps capture transactions or daily events to ensure the integrity of organizations. Records Management can help provide the correct information and decision-making (US Department of Energy, 2016), leading to the mission's accomplishment, thus protecting the interest and right of records in the creation and maintenance. The increase of information today that leads to the emergence of big data should be controlled. This paper believes that Records Management can be one solution suitable for managing big data. It is essential to know the relationship between records management and big data to determine the suitability of records management.

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According to Kibe (2019), records are essential elements in organizations. She stated that records need to systematically control organization from side creation of records, use, maintenance, and disposal. Besides, Green (2015) believes that records management has a significant role in managing big data. He further mentioned that the technologies created today to support the increase of big data rather than controlling it. Moreover, Hemlata, (2016) also believes that sound records management standards or practices can also be considered a method of handling big data (big data analytics). Big data analytics is the method used to analyze vast data or information (Hemlata, 2016).

The idea of choosing records management to see whether it is suitable or not for managing big data comes from previous research that sees records management as an essential item in managing information. Even though the previous research did not specifically study the ability of records management to manage big data, this paper believes that records management can do it. Moreover, the emergence of big data due to the increase of information, especially on the Internet of Things (IoT), needs a satisfactory solution in dealing with big data. Records management seems a suitable solution for managing big data. Moreover, Green (2015) believes that the Records Manager has been in the storage battle longer than IT persons. This shows that records management is involved earlier than other fields of managing information.

## 2.0 Big Data Environment

Big data has been changing how organizations and businesses perform and operate. The increase of information due to the technology and Internet of Things (IoT) sped up the increase of big data. Every year there is approximately 40% volume of data created and will continue to increase fifty times by the year 2020 from the current volume (Waal-Montgomery, 2015, as cited in Siti Aisyah Ismail et al. (2018). Moreover, the increase of the big data era is also due to the explosion of technological advances in today's world (Siti Aisyah Ismail & et al., 2018).

The literature review shows that big data is about large data sets that need to be analyzed. Green (2015) and Almeida (2017) support this. They stated that big data is a large amount of structured or unstructured data that can affect the business. Davenport & Dyche (2013) mentioned that big data is about dynamic volumes of disparate and large data. Tools, machines, and people also create big data. Tengku Adil & Mohd Shamsul (2018) further stated that big data is related to large datasets that traditional applications cannot manage anymore and cannot fit into a single server.

Big data is divided into two types which are structured and unstructured. Mawed & Al-Hajj. (2016) explain that structured data is related to fixed information and is easy to store and analyze. In contrast, unstructured data is additional information that emerges during the maintenance of the project. Gulia & Chahal (2020) believe that structured data is those data that have a relationship with each other's and are stored together in tuples. In contrast, unstructured data is stored separately and not in one table or tuple. Unstructured data also do not have a relationship with the data.

Yaswanth Sai (2017) considers unstructured data as the Internet of Things (IoT) data. He added that IoT is where people are connected and thought IoT data is produced rapidly in large-scale development. The statement is supported by Bomatpalli & Vemulkar (2016) acknowledge that IoT spread in various fields, including health, retail management, and many more. They point out further that through the Internet, nothing is impossible where the IoT is strongly associated with human life, for example, in emails, e-learning, and many other applications.

The study conducted by Su (2018) reveals that the application of big data is also applicable to semi-structured data situations. She explains that semi-structured data is situated between structured and unstructured. She added that semi-structured data may be incomplete and have structure at the beginning but can change unpredictably and rapidly at the end. It is not a fixed schema such as Web Logs (Su, 2018).

## 3.0 What Is Records Management?

The International Standard Organization (2016) defines records management as a field responsible for managing information efficiency. The records management also includes the use, maintenance, receipt, and disposition of records. Besides, the records management function is to capture the process and maintain evidence. This includes evidence in the information related to the transaction in the form of records and business activities.

The National Archives (2010) points out that records management is a regime that is made up of procedures, policies, processes, systems, and behaviors that helps in controlling records. The records management is also responsible for making sure the reliability of the evidence of actions and decisions is always available when needed and can be used as a reference. The National Archives (2010) also explains that records function to ensure evidence's reliability and remain available for use and reference when needed. The National Archives (2010) also believes that records are critical assets for effective management.

Alwi Mohd Yunus and Nik Azliza Nik Ariffin (2013) believe that records management is vital to the organization's work process. They also believe that, without records, the organization will face the consequences of losing its proof of conduct, transactional evidence, probable litigation, and many more.

The National Archives (2010) also explains that poor records management will lead to a few negative impacts if the organization has poor records management. For example, poor management of records will affect the incomplete information that is needed for decisions making; pecuniary loss due to reliable evidence is not available; and the organization also will fail to manage the confidential and vital information if there is no proper management of records. Good records management can allow the authoritative information, including past

activities can be found and used for current business. Good records management can also help support compliance with other rules and legislation (National Archives, 2010).

#### 4.0 The Relationship Between Records Management And Big Data

To overcome issues in big data due to the emergence of data on the internet, it is crucial to have proper management in managing big data. Almeida (2017) believes that to develop a solution for managing big data, it is vital to consider a few key points, including the governance of data, quality of information, manipulation, and integration. Moreover, Wulff & Wunck (2016) also stated that challenges today in big data are not only at a technical level but also at the data level itself. Therefore, he believes that having appropriate information or data processing can be an excellent solution to the efficiency and effectiveness of data integration.

Therefore, in this study, Records Management was chosen to see whether Records Management Standards can manage big data. Based on the problem of failure in capturing opportunities and insight due to the increase of big data in IoT, this paper would like to see how Records Management can manage big data. This is because Kundhavai & Sridevi (2016) mentioned that the solution of big data analytics today, such as SQL in Hadoop, Streaming Big Data Analytics, Hive, and many more in more on support the increase of big data and improvement of IoT rather than control and manage the emerging of big data. This showed that big data will keep increasing and give more challenges in the future if the big data is not appropriately managed and controlled.

To manage the big data, the Records Management standard, ISO 15489-1:2016(E), was chosen to see whether it is suitable for managing big data. The reason for choosing this standard is because this standard is a necessary standard that is well-known and recognized worldwide as an excellent baseline established in records management. (Pember., M. 2006). The standard also helps provide a blueprint for establishing, monitoring, structuring, and auditing best practices in records management programs. Besides, this standard also allows any organization in this world to be more efficient and effective in the retrieval of information. This includes decision-making, productivity, accountability, and reducing information risk.

Records Management, ISO 15489, applied in various records formats created from various media, either involving public data or individual data. Xiaomi & Jiao (2004) also believes this standard is significant since it is the first international standard related to Records management. They stated this standard is also needed and important in setting the parameter within the records management program.

Due to the strength of this ISO 15489 standard. The latest edition, ISO 15489-1:2016(E), was selected to manage and control big data. The previous ISO 15489 is AS/ISO 15489-1:2001 Information and documentation - Records Management Part 1 and 2, which is a standard that sets out the principles, processes, and practices associated with records management and sets out accepted good practices within the industry.

ISO 15489-1:2016(E) is the latest standard that is also part of International Standards, and Technical Reports that capture and manage records. (ISO 15489, 2016). However, based on Convery, N (2016), the latest version focuses more on records systems and controls. The latest standard is also more theoretical than the previous version in 2001 and more practical. Besides, he also mentioned that some of the terminologies in the latest standard were changed, such as "Appraisal," which focused on the value of records for continued support in the business. The methodologies used in the new standard are seen as the most significant change to help establish the records management program (Convery, 2016). This new standard seems can contribute to managing and controlling big data. As stated by Convery (2016), the new standard can help manage structured and unstructured data that can be invaluable to all organizations by applying a theoretical framework that helps in each business activity, including the contexts and process.

#### 5.0 Records Professional

This paper would like to see whether either Records Management Standard is suitable or not in managing big data issues. Therefore, this study will investigate the suitability of each records practices element that can manage big data through records professional view of Records Management standards and big data issues. According to InterPARES Trust (2019), a Records professional is a person with the knowledge and training in the field of information and managing records. The Records professionals are also familiar with the administrative, ethical, fiscal, legal, and governance contexts of record keeping. (InterPARES Trust, 2019).

Liu & Murphy (2014) see the importance of Records Management by suggesting a solution in their research to offer a curriculum for electronic document (records) management among undergraduate information systems students. According to Liu & Murphy (2014), the issues in unstructured data that are stored electronically need to be addressed. Records Management was seen as an essential way to manage issues related to big data. This is because document management was becoming essential in the big data world where records play as substantial evidence. Therefore, Liu & Murphy (2014) believe that to establish the importance of electronic records, it is important to train young professionals that can support and manage any such system. This is because it is crucial to have qualified professionals who can collect and manage structured and unstructured documents to meet the government and industry requirements in the big data world. (Liu & Murphy 2014). Based on those reasons, we can see how essential Records Management is and the roles of records professionals in big data. Through good record professionals, Liu & Murphy (2014) believe it can help to give some knowledge on the role of data custodians, retrieval process, recommend solutions on big data issues, describe, and evaluate documents software used for organization.

In fulfilling the aims of this study, it is important to have an in-depth discussion with the records professional as an informant to give a view of and ways a professional manages big data through Records management practices. It is imperative to choose the correct informant to achieve the aim of this study. A few criteria based on ISO 15489-1:2016(E) will look through to identify suitable informants for this study.

According to The International Standard Organization (2016), records professionals can be any professional in any field that deals in managing records, such as Records Managers, Records officers, and Document controllers. These professions involve people who are responsible either wholly or partly for managing records. This includes the design, implementation, and maintenance of the records system.

Besides, The International Standard Organization (2016), also explains that the Records professionals can be Information Technology professionals, Business Managers, and Legal professionals. This is because, Records professional is also a professional staff involved in developing, implementing, and maintaining metadata schemas and other control.

The informant also can be the Seniors Managers in any field. According to The International Standard Organization (2016), the Senior Manager is responsible for providing and ensuring support for the development and implementation of policies on records management.

The International Standard Organization (2016) also believes that the informant can be a Systems administrator, Admin Executive, or Project Coordinator. This is because Systems Administrators are responsible for ensuring the continuity of records operation and control and ensuring the systems documentation is always up to date. The International Standard Organization (2016) also explains that the informant can be from any other profession as long the person understands and participates in creating and keeping accurate records of business activities at any organization.

## 6.0 Research Design

The writers narrow this study into three (3) phases of research design that will use the same method of data collection, which is qualitative data that results in different items. Through phase one (1), the objective of this study has emerged. In this phase, qualitative data collection is used as a guideline in developing the research questions. Some preliminary studies followed by surveys and literature review took place to identify more about big data and Records Management. This phase helps in conducting the matrix analysis that contains the big data and record elements that will be presented in the conceptual framework for this study.

The next phase is data collection. The data collection is the second phase of the research design for this study. Again, in this study, qualitative data collection will be used by conducting purposive sampling. In this phase, the writers must find a suitable sampling or informant. Therefore, in this study, the case study research will be focused on giving a clear view of the research sampling through selected organizations. Only organizations that contribute to the emergence of big data will be selected; from that, the research sampling will be chosen to be an interview. In this phase, the writers can come out with a guideline on the research questions that will be used to ask the informant.

Lastly is phase three (3). In this phase, the data gained from phase two (2), the interview, will be analyzed and interpreted. This phase will allow the writers to discuss the results from the interview to fulfill the objectives of this study. This last phase is also an important phase where the best suitable guidelines in records management will be generated to manage big data issues.

## 7.0 Findings

The finding aim of this study is to come out with the best guideline in Records Management that is suitable for managing big data. To achieve the aim of this study, the writers will focus on gaining data through qualitative data collection by having some surveys and analyses about Records Management and Big Data. It is vital to identify the critical relations between records and big data. As mentioned in the literature review, the writers found a relationship between Records and Bid Data. This has been proved by research from Kibe (2019), which believes big data and records are crucial elements that organizations need to take care of. The writers also take seriously Green's opinion that sees Records Management as a crucial element in handling big data issues. From this part, the writers will see the view of the Records Professional itself about the relationship between Records Management and Big Data whether it is related to each other or not. This paper will come out with the roles of Records professionals themselves regarding the issues of big data and whether it can be managed with Records Management or not. At the end of this paper, the most important finding is to identify appropriate guidelines for managing big data through Records Management practices.

To get this finding, the writers need to follow all the steps in the research design. All results from each phase can lead to this study's goal. It is crucial to have proper methods and analysis to gain data that can answer the research problem. Moreover, at the end of this study, the writers believe that Records Management is also able to manage big data issues based on current records management elements implemented in Malaysia. This can be answered by in-depth discussions or interviews with records professionals who deal with and understand big data and records management. New elements can also be discovered through in-depth discussion and analysis; only the best elements will be chosen as a guideline for managing big data through the Records Management standard.

## 8.0 Conclusion

This essay has discussed the reasons Records Management is suitable or not for managing big data since it is close and related to big data. The choice of Records Management will help to manage the big data issues. The failure to manage big data will have a significant impact on organizations. The current solution in managing big data is more on supporting the emergence of big data rather than controlling it. This research believes that the Records Management standard can help in managing big data by keeping valuable information only. Besides, there are a few elements in the Records Management standard that will explore through this study to see whether it is suitable for managing big data or not. As a result, this study will come out with the best practices or guidelines in Records Management standards in managing big data issues.

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