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Development of function-based classification model for electronic records

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ABSTRACT

Classification is central for effective and efficient records management. However, it has not been addressed accordingly since records management initiative has not received priority despite of its importance in the current information-based world. This study has attempted to propose a function-based classification for managing electronic records at public agencies in Malaysia. The study was initiated by conducting a case study at the Department of Syariah Judiciary Malaysia which serve as a snapshot study. It is a requirement to carry out the snapshot study as the information gathered is useful for proposing a functional model to be used by the public agencies in the country. A function-based classification model is then proposed since it could ease the process of classifying records for retrieval, appraisal and disposal. Function-based classification is depicted since it provides context for records rather than content other than support proactive management of records. The development of model is derived from Integration Definition for Function Modelling (IDEF0) technique and validated by experts academically and professionally. The proposed model is comprehensive, consistent, relevant-scope, customise, and flexible.

1. Introduction

Classification is the arrangement of information items into manageable and logical categories. Records classification (RC) is different from library classification (Pearce-Moses & Davis 2008). Librarians classify materials from many different sources by subject into a single system, collecting related materials together for convenient access. On the contrary, records managers do not reorganise records, but maintain the original order abiding by the theories of provenance and *respect des fonds*. Such an approach is to ensure that the evidentiary value of records is preserved and the structure or functions of records remain intact.

This study adopts function-based classification (FBC) as suggested by Orr (2005), the National Archives of Australia (2003), and Mitchell (2003) because it is more stable compared with subject-based classification. FBC could also ease the process of classification and retrieval; provides context for records rather than content (Robinson, 1999; International Standard Organization, 2001;Library and Archives Canada 2006;National Archives of Australia, 2003;Shepherd & Yeo 2003) and could aid appraisal and disposal activities and support the proactive management of records (Bantin, 2002;National Archives of Australia, 2003).

2. The development of a functional model for the study

A model is a substitute for a real system, used when it is easier to work with a substitute than the actual system (Ford 2009). A model is more abstract than the system it represents, eliminates unnecessary detail, and focuses on the most important or related elements within the system (Hillston 2003). The model presented in this paper has been developed both from records management (RM) principles and archival science theory. RM principles are focused on the management of current records, from creation to maintenance. The primary purpose of RM is to help organisations organise records for retrieval and storage, and to protect them from misuse. Since this study focuses on classification and its application to current records, the RM principles of *respect des fonds* and provenance are noted, along with a brief reference to archival science theory. Examples of other studies that have adopted the same theoretical foundation are Orr (2005), Xie (2007), Foscarini (2009), and Krahn (2012).

The proposed model, later referred to as the Records Classification Model (FRCM), focuses on the first phase of recordkeeping functional requirements, namely 'Create'. The main concern when creating records, from the RM perspective, is to ensure that records

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are created in context by ensuring its metadata, management of aggregations, and classification tools. The creation of records requires a disposition schedule, capture methods, metadata elements, forms and structure, and technology solutions. Records are controlled through processes such as registration, classification, selection, access rules, authorising use, disposition, transfer, removing, destruction and administration of records systems. Therefore, the classification of records occurs at the 'Create' phase, which is the focal interest of this study.

A number of existing resources can be used to guide good RM. These include ICA, MoReqs, and InterPARES, all of which address the management of records from creation until disposal. None of these resources includes a method to conduct functional modelling, and none focuses solely on the classification of records. Therefore, a new model is proposed for the following reasons:

i. To date, there is no model for the classification of records in Malaysia; and
ii. There is a need to classify records in Malaysia by function because records are acquired and described in context in natural relationship between the creator and its creation (Cook 2007).

Moreover, the classification of records by function has been widely adopted by many countries including the US, Canada, UK, New Zealand, Australia, and China, and Malaysia (paper records only).

The development of the proposed model (FRCM) has been achieved using a tool (IDEF0) that consists of Node Index, Context Diagrams, and Decomposed Diagrams. The FRCM is a foundation guideline designed to identify functions in organisations for the purpose of classifying records. It is not a classification scheme; however, the development of a classification scheme can be referred from this model.

2.1. ICAM (Integrated Computer Aided Manufacturing) Definition for Modelling (IDEF0)

IDEF0 has been used to produce a functional model of the FRCM. A functional model is a structured representation of the functions and activities within the modelled system or subject area (Federal Information Processing Standards Publication, 1993). The model was developed using the *Concept Draw PRO* software. The IDEF0 model has been constructed level by level, beginning with the node index, followed by the context diagram (A-0). Levels are then decomposed to more detail diagrams (A0, A1 and A2). IDEF0 consists of inputs, controls/constraints, outputs and mechanisms ('ICOM'). Definitions for these terms are provided by IDEF0 (2010).

Input is defined as information or objects that originate outside the main activity being modelled and result in output, or the outcomes of an activity. Activities have control/constraint on processes.

i. Control/constraint is a form of input, seldom changing, may direct or affect activities associated with a process.
ii. Mechanisms are the resources and tools required to complete the process.

2.2. Node index for the design of a Records Classification Model (FRCM)

The development of the FRCM was completed by constructing a node index. A node index is used as a guide or index to list the related functions, which are then drawn in the context diagram. The context diagram is the highest level diagram and is made up of all inputs, controls/constraints, outputs and mechanisms. The node index provides a quick index for locating details within the hierarchical structure of diagrams, as shown in Fig. 1.

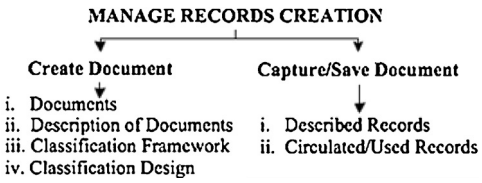

Fig. 1. Node index.

Fig. 1 depicts the FRCM that consists of two core processes involved in classifying records: (i) create documents and (ii) capture/save documents. The first process is document creation. The attributes of a document are composed of records elements derived from archival science theory and constructed using IT tools to become electronic documents or records. The first process produces outputs including classification framework and design. This is because the process of classification should occur when documents are created. The second process is about capturing and saving documents into the system, to describe them as records and circulate them for use.

Fig. 2 is a summary of the FRCM with the aim of facilitating an understanding in visualising the complex process. It comprises the context diagram (A) decomposing the processes into three further levels in separate diagrams (B). It begins with a node index that acts as a road map to the flow of processes. The node index shows the processes and their outputs. The context diagram, labelled in box A, shows the management of records creation at the highest level. The diagram is simple however; it is difficult to understand its function without decomposing their processes into different levels. Box B consists of three levels of processes, described in Figs. 4–6 .

The first level describes in detail the content of the context diagram. It depicts both processes involved, namely the creation of documents and capture/save of documents. The creation and capture/save documents steps are further broken down into second and third levels.

The second level depicts the process for creating documents. Once the document is created or received, all details such as information about its author, actions involved in creating the document, contents, structure and context are composed into descriptions of documents. A document produced is not only about its contents, but comes together with its descriptions. The descriptions of documents are presented in a structured form, normally known as metadata. All information such as inputs, constraints, and mechanisms needed while creating a document will be gathered to form a classification framework and design.

The third level shows simpler processes involved in the capture/save documents. The classification occurs at the beginning of documents creation. The documents retrieved are captured, while the documents created are saved. Both have similar function which is to save the document into the system. Then, the documents are assigned and described either document or records, and then distributed or used. The classification of documents allows documents that have been received or captured and identified as records to be assigned classification codes from the classification scheme; for these codes to be added the identifying metadata; for registration numbers to be assigned to documents based on the registration scheme; and for these numbers to be added to the identifying metadata. All of the outputs from the second and third levels are depicted in the box B.

The FRCM explains all the processes involved, as pictured in boxes A, B and C. Although boxes C and D are not explained, they relate to the processes included in those three boxes. Box D shows the arrows from the box D to box C, addressing the busi-