Management of Court Records: Functional Requirements Framework for Electronic Recordkeeping System

RUSNAH JOHARE, rusnahj@salam.uitm.edu.my
NURUSSOBAH HUSSIN, nur_huss@yahoo.com
ADNAN JAMALUDIN, adnanj@salam.uitm.edu.my
Faculty of Information Management, Universiti Teknologi MARA

ABSTRACT

This paper highlights the need for electronic court records management in the Judiciary. The aim of the study is to develop a functional requirements framework for electronic recordkeeping system in the Superior Courts of Malaysia. This paper discusses the results of the data analysis of the various international and national best practices of functional requirements for electronic records management and courts management across selected organizations in Australia, Canada, UK, US, Singapore and Malaysia. The framework development for the execution phase are based on three steps i.e. identify, analyze and development. The method of the data collection is document analysis. Findings of the analysis shows that all of the civil records management functions that have been identified comply with the functional requirements of electronic records management. With regard to the functional requirements specific to recordkeeping system of the courts, there were no comprehensive functional requirements developed which integrate the functions of electronic records management in the functional requirements of the courts. Therefore, the researchers have to analyze sixteen functional requirements to successfully identify the functions of electronic records management and civil cases/records management that are relevant to the study. It is hoped that the development of the framework requirements will contribute to automated recordkeeping functionality, enhance the ability to support auditing activities, improve the court of appeal business processes and assist to ensure good governance through good recordkeeping.

Keywords: Civil records; Superior Courts; Electronic records; Recordkeeping; Functional Requirements

INTRODUCTION

Functional requirements (within the context of electronic records management) are the actions a software program will perform in order to generate a desired result. According to Ardern et. al. (2009) functional requirements are the inputs and processes that lead to intended outputs. Thus the underlying tasks of the functional requirements are to identify the controls needed to ensure a software system will complete the tasks it is intended to complete. In other words, in order to manage electronic records effectively, what must an electronic records management system (ERMS) do?

The archival institutions and related organizations in developed countries such as Australia, Canada, UK and USA which are the leading advocates for developing, establishing and providing authoritative guidance on all aspects of ERM have also developed policies and guidelines on the functional requirements of electronic recordkeeping systems for their related organizations. On the contrary, in Malaysia neither the Judiciary nor the National Archives of Malaysia has developed functional requirements for court recordkeeping system. Based on our investigations, the only policy developed by the National Archives of Malaysia for court records is the Retention Schedule for Court Records (2010).

On this basis, the functional requirements framework for electronic court recordkeeping system has been developed to serve as a starting point for the development of recordkeeping functional requirements for managing and preserving the trusted records in the Superior Courts of Malaysia.

LITERATURE REVIEW

According to the *Technology Standards Resource Guide* of the National Centre for State Courts (NCSC), there are many technology standards being produced as one of the strategies to improve the administration of justice through leadership and service to state courts around the world. Below are a few examples of the standards:

- Technology Standards Functional Requirements. National Centre for State Courts, the Conference of State Court Administrators (COSCA) and National Association for Court Management (NACM) (2000 – 2008).
- Electronic Court Filing Standards. OASIS LegalXML Electronic Court Filing Technical Committee (ECF TC) (2008).
- Functional Requirements. Office of State Court Administrator, Supreme Court of Florida (October 2002). Functional requirements (with diagrams) for criminal, civil, juvenile, probate, traffic, drug courts and jury.

In the court environment, the ambit and application of a piece of legislation is referred to as its *jurisdiction.* If the jurisdiction of a particular policy or act is not clear, this can create difficulties for record managers and archivists. For example, in Australia there has been uncertainty about the jurisdiction of archival legislation over the records of the courts. Because the legislation does not explicitly cover case files and transcripts of the courts they may not be affected by the legislation. By contrast, in Namibia, the Archives Act 1992 explicitly states the legal records to which it applies (IRMT 2002). Furthermore, NCSC (2001) traces, some functions in the standards inherently need intensification because they have been expressed in general terms for these national standards. Certain terms used in these national standards are deliberately ambiguous and must be further defined before application software vendors can design their products.

Therefore, the need for a comprehensive specification of a functional requirement that needs to be included in a design specification when building or upgrading an electronic court records system is essential. As Cox's quoted Bantin's statement in his article entitled Approaches to Electronic Records Management (2001), records professionals need conceptual framework in order to approach electronic records management. Specific functional requirements for the management of electronic court records are necessary to support the longevity of records for permanent or long-term retention.

OBJECTIVE OF THE STUDY

The objective of this paper is to identify and analyze the various international and national best practices of functional requirements for electronic records management and functional standards for the courts. The analyses are based on these following steps:

- Analysis of the six functional requirements for electronic records management.
- Analysis of the national functional requirements for electronic records management.
- Analysis of the nine international functional standards for courts.
- Development of the framework.

SCOPE OF THE STUDY

This study focuses mainly on developing mandatory functional requirements for the recordkeeping system in the Superior Courts of Malaysia. This study only covers Court of Appeal as the preliminary investigation reveals that this court has not yet implemented an electronic recordkeeping system for its records. The focus is on the system rather than on the records because the court certainly has paper records that must be integrated in the recordkeeping system together with the digital records

According to the National Center for State Courts, US (2001), in order to ensure that the system comprehensively meets a court's needs, each function must be examined separately for each case type. In order words, a separate set of standards must be developed for each general case type. Thus, this study is limited to *official civil records*.

However, the study will not attempt to include requirements that are not specific to, or necessary for, records management; for example, general system management and design requirements. Non-functional requirements or additional requirements will not be included as well.

RESEARCH METHODOLOGY

Qualitative research is chosen for research methodology. Case study has been identified as the most suitable strategy for this research. The data collection method for this objective is documentary analysis. Conducting requirements analysis helps to reconcile different perspectives and coordinate subsequent analysis and design activities (Museum of Vertebrate Zoology, 1995).

ANALYSIS OF THE VARIOUS INTERNATIONAL AND NATIONAL BEST PRACTICES OF FUNCTIONAL REQUIREMENTS FOR ELECTRONIC RECORDS MANAGEMENT

The analyses were done in two techniques; manual data analysis and computer-supported data (NVivo7) analysis. As the purposed of this paper, the researchers have constructed themes and sub-themes of functional requirements. The themes and sub-themes developed were based on specifications produced by National Archives of Malaysia and International Council on Archives. Due to the fact that the specification developed by National Archives of Malaysia has been chosen as the benchmark for this study while the other specification has been participated by Malaysia, the researchers were strongly influenced by these two specifications. However, the researchers had added 1 new theme and 3 sub-themes.
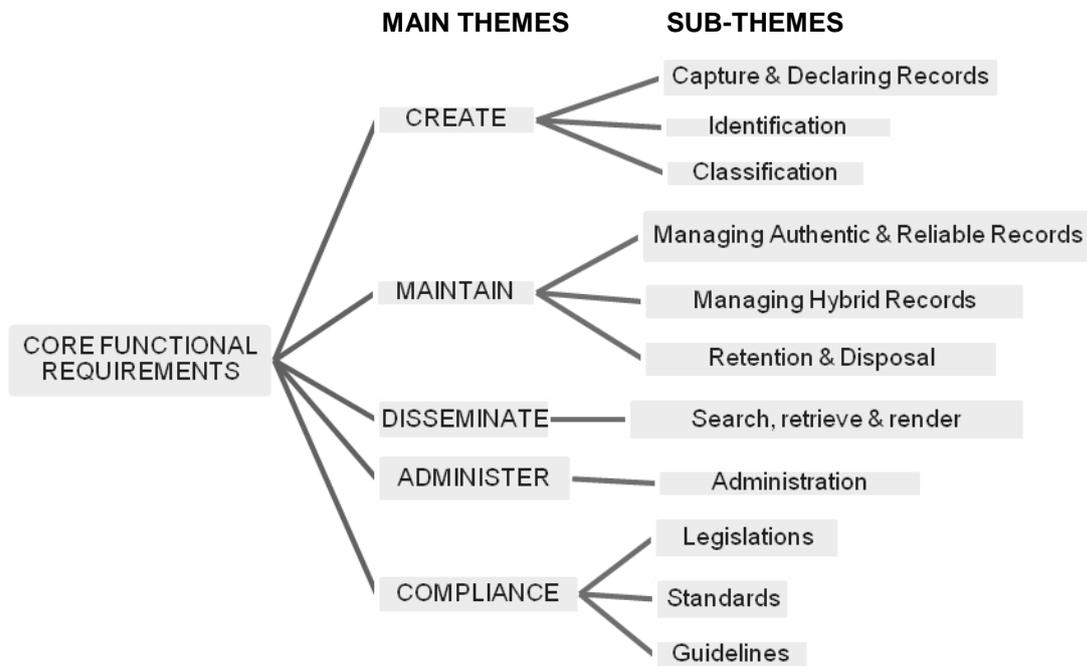
Figure 1: Framework below indicates the themes and sub-themes of core ERM functional requirements summarized from the seven specifications.

In order to explain the data analysis report and discussion, the researchers have coded all of the seven specifications into alphanumeric coding. As an example, S1 refers to the specification developed by the International Council on Archives (ICA) entitled *Principles and Functional Requirements for Records in Electronic Office Environment: Guidelines and Functional Requirements for Electronic Records Management System*. This is shown in Figure 2 below:

Table 1: Alphanumeric code along with their specifications

SI	Principles and Functional Requirements for Records in Electronic Office Environment: Guidelines and Functional Requirements for Electronic Records Management System (International Council on Archives (ICA), 2008)
S2	Model Requirements for Electronic Records Management ((MoReq2) (European Communities, 2008)
S3	Electronic Records Management Software Applications Design Criteria Standard ((DoD5015-02-STD) (US Department of Defence, 2007))
S4	Functional Specification for Electronic Records Management System Software (National Archives of Australia, 2006)
S5	Requirements for Electronic Records Management Systems (Functional requirement) (United Kingdom Public Record Office, 2002)
S6	Requirements for Assessing and Maintaining the Authenticity of Electronic Records (InterPARES 1, 2002)
S7	Electronic Records Management System: System Specification for Public Office (National Archives of Malaysia, 2008)

All of the specifications focus mainly on the functional requirements for Electronic Records Management System. However, the requirements developed by InterPARES project, entitled Requirements for Accessing and Maintaining the Authenticity of Electronic Records (S6) is meant for the preserver's assessment of the authenticity of the creator's electronic records and to enable the preserver to attest to the authenticity of copies of inactive electronic records.

As revealed in Figure 3, each of those specifications mentioned the same functionality a recordkeeping system must possess. However the percentage of the content covered for every specification differed. As shown in Figure 3, S1 covered 7.7% of the content on capturing and declaring records while S2 covered 9.17%. On the other hand, as for the sub-theme of *Managing Authentic and Reliable Records*, S6 reached a percentage of 95.68% since it is specified for Requirements for Assessing and Maintaining the Authenticity of Electronic Records. As for the functional requirement specification, each sub-theme obtained coverage of less than 10% for every function that is identified. This shows similarities in the amount of coverage on the content of every sub-theme.

Table 2: The percentage of coverage on the content of every sub-theme

SPECIFICATIONS / SUB-THEMES	S1	S2	S3	S4	S5	S6	S7
Capture & Declaring Records	7.7%	9.17%	7.15%	6.79%	2.78%	0.92%	6.1%
Identification	0.9%	0.47%	0.8%	0.99%	0.49%	7.69%	0.72%
Classification	6.28%	9.6%	6.94%	4.41%	1.63%	-	4.94%
Managing Authentic and Reliable Records	8.72%	5.08%	30.57%	9.88%	7.48%	95.68%	6.73%
Hybrid Records Management	2.47%	2.1%	23.2%	3.28%	2.15%	-	1.9%
Retention & Disposal	9.14%	6.06%	18.91%	8.09%	18.86%	4.43%	7.02%
Search, Retrieve & Render	5.9%	4%	0.86%	4.85%	5.01%	1.26%	5%
Administration	3.72%	4.38%	1.82%	8.4%	4.46%	2.37%	3.47%
Compliance	0.25%	0.35%	0.45%	1.37%	1.1%	-	0.2%

As expected, all of the seven specifications collectively show similarities in their content. Therefore, every theme in the table above which represents the functionality of a recordkeeping system must be included when specifying the functional requirements on ERMS. However, most of them are generic requirements such as S1, S2, S4, S5 and S7. Therefore, organizations that wish to make use of these requirements as a baseline or benchmark will need to consider their own specific needs and context.

On the other aspect, the levels of approach of the seven functional requirements are

slightly different. Based on the manual analysis, S1 for instance, divided the functional requirements according to creation, maintenance, dissemination and administration while S3 separated them differently (mandatory / non-mandatory). In the case of S2 it was in terms of core functional requirements, non-functional requirements, metadata requirements and reference model.

As for this study, the functions developed were based on the specification of S7. As mentioned earlier, the researchers were strongly influenced by this specification because this specification has been chosen as the benchmark for the study. The researchers have followed the main structure of the core functional requirements of this specification. There is creation, maintenance, dissemination and administration. However, the researchers have added one extra theme; 'compliance' which the researchers feel is necessary for this study. The sub-theme for 'compliance' are 'legislations', 'standards' and 'guidelines'. The reason for adding compliance was because the specification is specific for the Superior Court of Malaysia. Therefore, the researcher feels that it is necessary to know the courts' procedures in order to produce the requirements that are consistent with the legal and procedural context in which the court operates. In addition, the literature also suggests that ERMS must meet relevant local, national and international requirements for recordkeeping and records management.

In order to produce readable and precise requirements, the researchers have concentrated on a specific area of functional requirements. For the purpose of this study, the researchers have identified the mandatory functional requirements for record management. Other requirements such as general system requirements, design requirements and optional module requirements will not be included. Other requirements will be considered in future research. Therefore, the Enterprise Content Management and Collaboration Management in S7 were excluded. Additionally, the Public Record Office (2002) also points out; an ERMS may fulfill the core requirements without fulfilling any optional module requirements. However, if an ERMS wishes to demonstrate the capability of providing one or more of the areas covered by optional modules, within the context of ERM, it must first fulfill all of the mandatory requirements.

Besides, there is major difference between the traditional approach to managing records and the approach advocated by those specifications, involves early identification and capturing of all associated information and metadata regarding the content, context, structure and presentation of electronic records. Long-term preservation is related to the creation and capturing of electronic records. ISO 15489 (2002) highlights that many records systems particularly electronic records systems, identify the disposition status and retention period of the record at the point of capture and registration. Determining what records should be captured and how long they should be kept is most effectively undertaken in a systematic way and according to laws and regulations.

The process requires reference to a disposition authority of a more or less formal nature depending on the size and nature of the organization and its accountabilities. The disposition authorities may prescribe permanent preservation, either within the organization, such as the Superior Courts or in a separate archives institution such as the National Archives of Malaysia.

On the whole, it can be concluded that the analysis was able to identify common functions in the specifications. The main functional requirements of ERM were identified. This essentially provided a frame of reference to the researchers.

DATA ANALYSIS RESULTS OF THE INTERNATIONAL COURT RECORDS MANAGEMENT REQUIREMENTS

In order to identify the functions of electronic court records that focus on civil case records, the researcher has analyzed various specifications. Besides analyzing functional requirements for courts, the researcher has also analyzed electronic filing system standards and case management system specifications. Standards for electronic filing process analysis were formulated, as a part of electronic records management process. On the other hand, the latter analysis were done because civil case records are court records and according to Kenneth (2009) court records include any information in a computerized case management system created or prepared by the court in connection with a case or judicial proceeding. For that reason, case management system specifications were analyzed. Finally, the researcher has

analyzed the Electronic Filing System of the Supreme Court of Singapore: IDEF0 Activity Model in order to have a clearer picture and better understanding of the workflow involving electronic filing system of court records in Asia. The list of these specifications is shown in Figure 5.

Table 3: Alphanumeric code along with their specifications for easier explanation

RI	*Standards for Electronic Filing Processes: Technical and Business Approaches, National Consortium for State Court Automation Standards (2003)*
R2	*Functional Requirements Documents (Supreme Court of Florida Office of the State Courts Administrator, 2002)*
R3	*Requirements for UK Supreme Court Case Management System. 2008*
R4	*Requirements for Delivery of Electronic Document & Records Management application for UK Supreme Court (2008)*
R5	*Functional Specification: FullCourt Pilot Project of Case Management System for the Montana Districts Courts (Draft) (Supreme Court of Montana, 2007)*
R6	*Software Functional Requirements Version 1.0: Texas Data-Enabled Courts for Kids (TexDECK)(2008)*
R7	*Civil case management System Functional Standards, National Centre for State Court, 2001*
R8	*Protection of Electronic Case Records in Paperless Court Operations, Arizona Court of Judicial Administration (Draft), 2008*
R9	*Electronic Filing System of the Supreme Court of Singapore: IDEF0 Activity Model, InterPARES, 2005*

After thorough analysis of nine functional standards of courts, a total of 14 sub-themes have been identified as being the most appropriate and relevant functions for civil cases/records management. This analysis is similar to the previous analysis on the functional requirements of electronic records management. The sub-themes are listed in figure 6.

Table 4: Sub-themes which represent the functions of civil case management and the percentage of coverage on the content of every sub-theme.

SPECIFICATIONS SUB-THEMES	R1 %	R2 %	R3 %	R4 %	R5 %	R6 %	R7 %	R8 %	R9 %
Case initiation	-	1.17	-	-	3.03	6.61	2.94	-	4.25
Indexing	-	-	-	-	-	-	2.58	2.09	-
Docketing/Register of action	0.81	2.87	-	-	-	3.17	7.34		3.98
Case, File, Document & Property management function	9.05	4.21	17.62	5.83	0.3	4.77	8.99	36.89	20.20
Scheduling function	-	2.54		-	-	6.61	7.44	-	-
Calendaring function	-	0.82	5.43	-	0.5	2.11	3.02	-	-
Hearing function	-	0.69	-	-	-	23.8	2.60	-	30.30
Accounting function	-	0.56	-	-	1.66	-	15.71	-	
Security function	3.75	-	-	-	4.63	-	-	-	13.40
Scanning & Imaging	-	-	-	-	20.46	-	-	4.82	0.51
Reporting	-	1.73	7.20	-	11.13	-	-	-	1.54
Complaints	-	-	0.84	-	-	-	-	-	-
Preservation & Disposition function	0.51	1.36	5.03	-	-	0.26	3.09	25.99	3.81
Compliance	-	-	2.42	-	-	-	-	-	-

As we can see, the specifications that contain the most sub-themes (9 sub-themes) are R2 and R7which cover 53% of the sub-themes. In contrast, R4 which has the least sub-themes coverage covers only 6% of the sub-themes. This is because R4 only provides brief and general requirements on electronic document management. It has no specific requirements for court case process such as hearing functions and calendaring functions.

Another interesting comparison, sub-themes which are covered by more than five specifications is case initiation, docketing, management functions and calendaring functions. In

comparison however, hearing function, which is covered in R2, R6, R7 and R9 specifications is also necessary for developing functional requirement for civil records. In addition, other functions or sub-themes are also needed as they provide a full range of the functional capabilities and features deemed desirable in electronic court records management. In sum, the researchers found that all of the sub-themes identified are essential to ensuring that the system comprehensively meets the courts' need.

The next phase is synthesizing and integrating the relationship between the functions of electronic records management and the functions of civil cases/records management. The relationship is shown in Figure 7 in tabular form. The table in Figure 7 represents the functions of electronic records management (in columns), and the functions of civil case management (in rows). The tick (√) shown at the intersection of a row and a column indicates the corresponding functions of civil cases/records management is comply with the functional requirements of electronic records management. For instance, case initiation involves capture, registration and identification functions while indexing sub-themes comprises classification function. However, after the analysis and synthesis process, the researchers found that it is necessary to refine the civil cases/records management functions to match with the ERM functions. Thus, the refinement of the civil cases/records management functions has been done as listed in figure 8.

The final phase is developing a framework of core functional requirements for electronic civil cases/records management. The framework indicates the integration between ERM functional requirements and the functions of civil cases/records management. Base on the framework in figure 8, it depicts that the core functional requirements of electronic civil cases/records management are grouped according to the ERM clusters i.e. Create, Maintain, Disseminate, Administer and Compliance. While the sub-functions present the integration and refinement of ERM functions and civil cases/records functions. There are Capture and case initiation, Identification, Classification and indexing, Managing the authenticity and reliability of cases/records, Docketing, Hybrid cases/records management, Retention & disposal, Search, retrieve and render, Administrator, Metadata administration, Scheduling, Reporting and Compliance of legislation, standards and guidelines

In addition, the civil case functions such as calendaring function, hearing function, execution function, accounting function and security function involves the process of maintaining and dissemination of electronic records management. Therefore, they have been categorized in different column as represented in the framework.

	CAPTURE & DECLARATION	REGISTRATION	IDENTIFICATION	CLASSIFICATION	MANAGING AUTHENTIC & RELIABLE RECORDS	MANAGING HYBRID RECORDS	RETENTION & DISPOSAL	SEARCH RETRIEVE & RENDER	ADMINISTER	COMPLIANCE
CASE INITIATION	√	√	√							
INDEXING				√						
DOCKETING/ REGISTER OF ACTION		√			√					
CASE, FILE, DOC,& PROPRTY MGMT FUNCTN					√					
SCHEDULING FUNCTION									√	
CALENDERING FUNCTION	√				√		√	√		
HEARING FUNCTION					√		√	√		
EXECUTION & ACCOUNTING FUNCTION	√	√	√	√	√	√	√	√		
SECURITY FUNCTION					√	√	√	√		
SCANNING & IMAGING						√				
REPORTING									√	
COMPLAINTS									√	
PRESERVATION & DISPOSITION FUNCTION							√			
COMPLIANCE										√

Figure 5: Table comparing the main functional requirement of electronic records management with the functions of civil records management.
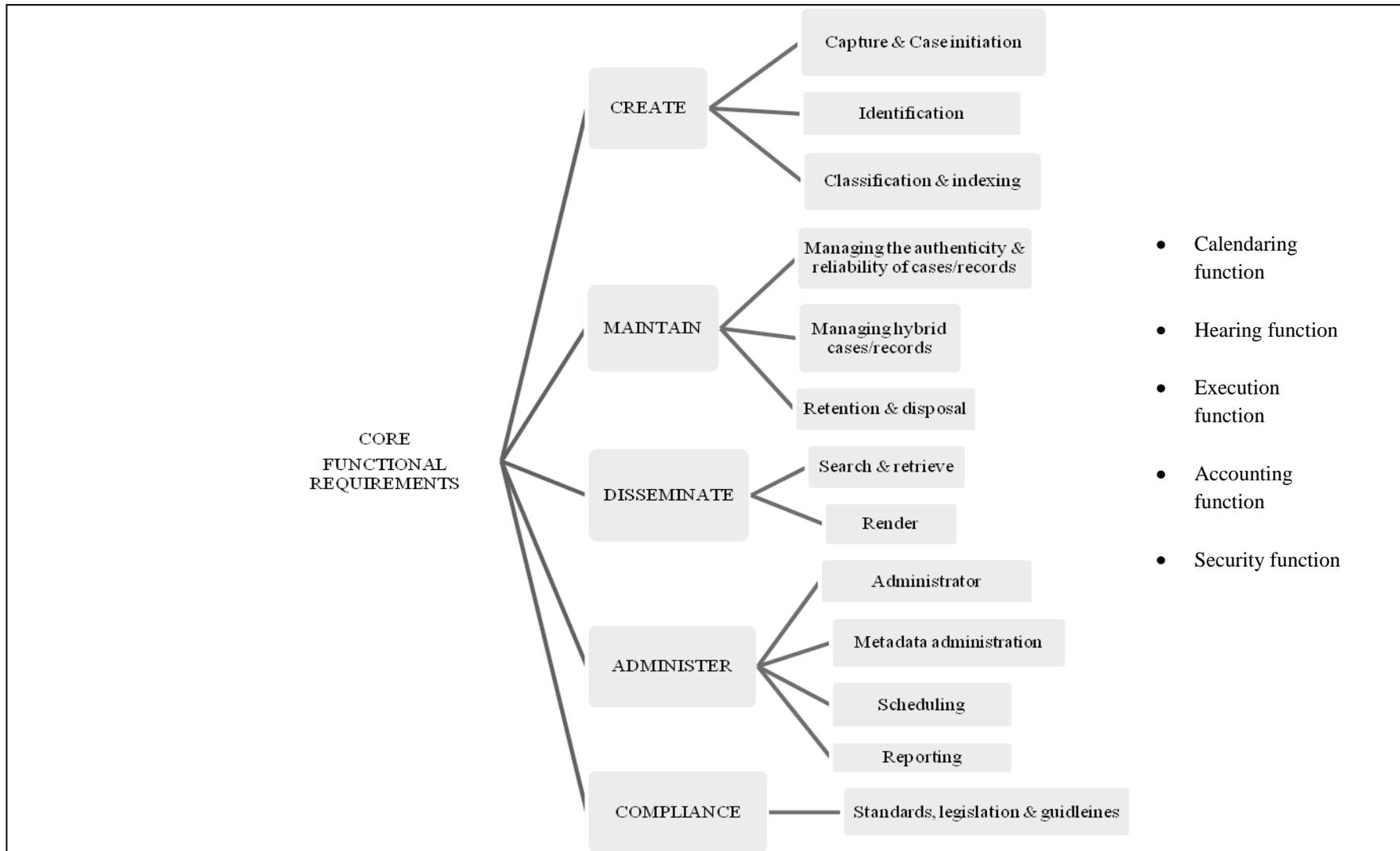
Figure 6:   Framework of core functional requirements for electronic civil cases/records management

CONCLUSION

Findings of the analysis of the various international and national functional requirements for electronic records management and court records management across selected organizations in Australia, Canada, UK, US, Singapore and Malaysia have shown the interrelated relationship between the functions of civil cases/records and the functional requirements of electronic records management. All of the civil cases/records management functions that have been identified comply with the functional requirements of electronic records management. With regard to the functional requirements specific to recordkeeping system of the courts, there were no comprehensive functional requirements developed which integrate the functions of electronic records management in the functional requirements of the courts. Therefore, the researchers have to analyze sixteen functional requirements to successfully identify the functions of electronic records management and civil cases/records management that are relevant to the study. Thus, it is hoped that, the framework developed can be used as a reference when designing electronic recordkeeping systems for superior courts of Malaysia.

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