THE BUILDING BLOCKS OF ELECTRONIC RECORDS AND INFORMATION MANAGEMENT FRAMEWORK FOR MALAYSIA PUBLIC AGENCIES: CONTEXTS AND APPROACHES

A. L. Abdullah[*], Z. M. Yusof, K. Ahmad and U. A. Mokhtar

Centre of Software Technology and Management, Faculty of Information Science and Technology, National University of Malaysia, 43600 Bangi, Selangor, Malaysia

ABSTRACT

Electronic Records and Information Management (e-RIM) framework is paramount for organizations in formulating strategies for managing, use, maintain and protect electronic records and information (e-RI). Since the existing frameworks are nearing to perfection (resulting in difficulty to achieve and implement), therefore inappropriate for adoption particularly by the Malaysia public agencies. The absence of an appropriate framework has hindered the public agencies from implementing the satisfactory e-RIM initiative. This paper seeks to develop a framework which is grounded on the concept of reasonableness rather than perfection. Prior to developing the framework, it is deem necessary to explore and understand the contexts underlying the e-RIM issues and problems and the criteria that manifest the concept of reasonableness. It is identified that people, organization, technology and processes are the interrelated contexts underlying the issues and problems in Malaysia public agencies while articulation of e-RIM vision, equilibrium and adaptability, rationale, practical, relevant and responsive are the criteria that manifest the concept of reasonableness. The contexts and criteria serve as the base for the proposed conceptual model of reasonable e-RIM framework for the study.

Keywords: electronic records; electronic records and information management; reasonableness, public agencies

1. INTRODUCTION

Records and information management (RIM) is one of the foundational elements in supporting good governance. RIM is a prerequisite for openness, transparency and accountability of any government [1, 2]. RIM not only ensures the function and the operation of an organization but is also able to retain the trustworthiness of organization's records and information [3]. It is also paramount in improving productivity, support decision making process, meeting legal compliance, risk management, promote knowledge sharing, protect the interests and the rights of the citizens, speedy disaster recovery, and preserve the history [2, 4, 5, 6].

The advancement of information and communication technology (ICT) and the implementation of e-government initiatives has resulted in organization become dependence on e-RI. But e-RI pose greater challenges compared to records in the conventional environment because are easily created, tampered, duplicated, transferred, lost and corrupted. The e-SPARK (e-strategy for the preservation of archives and government records) – a project led by the National Archives of Malaysia (NAM), is seen as a catalyst and serves as a turning point for the government of Malaysia in realising that e-RI is essential if the government wishes to be seen as practicing a degree of democracy. e-SPARK have published a numbers of public mandates in the form of policies, regulations and guidelines with the aim to urged and assist the public agencies to take up e-RIM initiatives. However, despite those mandates, e-RIM issues and problems continue to persist due to differences in perceptions and understandings [7], misleading guidance and incompetent in executing the endeavour [2, 8, 9] resulting in organization implementing the initiative according to their instinct [8, 9, 10]. This has broached up inconsistencies and non-conforming the standard practices and procedures. Those are the reasons which makes e-RIM initiatives in Malaysia are still unsatisfactory [2], neglected, underestimated, disorganised and ill-managed, [8, 9]. Such situation can affect trustworthiness and confidence in the value and the quality of e-records; compromised reliability and usability of e-RI; increased the risk of non-compliance; and raise conflict of interest among business, legal, records management and ICT professionals. This led the process of institutionalizing the e-RIM practice becomes problematic despite it is critical for ensuring organization able to gain benefit from its implementation [11, 12, 13].

Framework is a prerequisites in executing e-RIM initiative. The frameworks developed in past studies are contextual and conceptual in nature due to the differences in the scope and intensity of the issues and problems; dissimilarities in e-RIM contexts, business operations, focus and priority, constraints, organization capabilities and capacity; working culture; and

mandates used, [12,14]. Furthermore, the strategies, tactic and practical solutions are influenced by researchers' interpretation, understanding, theoretical and principles tendency, knowledge and experience. Therefore, the relevancies and effectiveness of e-RIM framework is much contextualized [15]. As a result, most frameworks have different goals, priorities, focus and strategies thus, make every each framework unique. The absence of a framework which can fit all organisations remains a distinct issue [13, 16].

Apart from the uniqueness of the characteristics, the framework developed by the NAM is entirely driven by the standards, policies and guidelines [2, 8, 10] without taking the e-RIM context, the degree of the issues and problems into consideration. Although e-RIM framework which is guided by the standards, policies and regulations is a perfect approach but is rather unrealistic, difficult to implement and achieved [16, 17], not flexible and disproportionate between the theoretical and the real-situation needs [13]. The lack of a suitable framework have impelled difficulties for the public agencies to improve and implement e-RIM initiative. This has urged that a different framework that is based on reasonable approach rather than endeavouring for perfection [16, 17] is deem required to be developed.

The purpose of this study is to explore and identify the contexts and elements underlying the e-RIM issues and problems, and to provide a perspective on a reasonable approach for e-RIM framework development. Those explorations and perspectives were based on literature review and feasibility study.

II. METHOD

This study focuses on exploring the e-RIM contexts that underlie the e-RIM issues and problems, and the concept of reasonableness approach for e-RIM framework. Content analysis is adopted since it is an effective scientific approach for analysing data in the form of texts and words and can be apply to unstructured documents [18]. The analysis of the document contents are guided by theories and past research findings The content of document are analysed through a systematic process of classification and coding to identify the themes and patterns, developing category, explore the meaning of similarities and differences in the data and the relationship between them [19, 20]. Feasibility study was also conducted involving two Malaysia Army organizations with the aim to assess in general the e-RIM issues and problems in Malaysia public agencies. Another additional techniques i.e. observation was used in feasibility study.

III.   CONTEXTS UNDERLYING THE ISSUES AND PROBLEM

e-RIM contexts are the building blocks of e-RIM framework.Those contexts are the root cause of the e-RIM issues and problems, needs to definite the framework goals, focus and boundaries [15, 21]. The identification of e-RIM contexts usually based on the environment that have influence on e-RIM effectiveness and efficiency [4, 14]. The e-RIM contexts are categorised as people, culture, mandate, process and technology [22]; vision, principles and mandate [23]; governance, people, best practices, technology and archive [24]; organization, technology and mandate [25]; people, legal infrastructure and technology infrastructure [26]; governance, culture, mandate, users and technology [27]; people, process and technology [14]; people, process, technology, and principles [28]; or people, process and practices, and technology[29]. The diversity of e-RIM contexts indicates that e-RIM's context categorisation are based on scholars' perception, understanding and interpretation of the issues and problems. Although the contexts used are similar but has a different meaning, element, scope and intensity.

The e-RIM contexts and elements used in this study are based on the contexts and elements adopted from various disciplines namely information systems [21], records management [15] and information management [29]. Those disciplines are interrelated [2] and their collaboration is essential in order to address the e-RIM issues and problems [14, 30].

[21]perceive the environment context from business perspective. The environment context compose of: (1) people (consist of role, capabilities and criteria), (2) organization (business) (consist of strategy, structure and culture, and business processes), and (3) technologies in term of infrastructure, application, communication architecture and development capabilities. The environment contexts need to be comprehend in order to define the business needs and problems, and successivelyidentify the goal, priorities, boundaries and strategy of the framework and assures relevance. Meanwhile, [14] who focus on accelerating positive change in electronic records management (e-RM), emphasized on three contexts: (1) people including vision, awareness, culture, drivers and barriers, (2) process consist of working practices, procedure, policies and standard, and (3) technology in term of the design principles for delivering effective recordkeeping. Those contexts are the key contexts underlying the e-RM issues and problems, inextricably linked and predominant by people. On the other hand, [29] assert people, processes and practice, and technology are the general key components of any information management framework. The people component consist of responsibility, culture and skills, whereas processes and practices include activities in the phases of the records life cycle, and technology refers to architecture, systems and tools. It is claimed those components

are foundational for effective and efficient information management.

Based on the contexts discussed as the above and e-RIM issues and problems in Malaysia public agencies (finding from the literature and feasibility study), four contexts and nine elements underlying the e-RIM issues and problems in Malaysia public agencies have been identified as shown in Table 1.

Table 1. Contexts Underlying the e-RIM Issues nnd Problems in Malaysia Public Agencies

Contexts - Elements	Issues and problems
People - competencies and leadership	Lack of understanding and awareness among stakeholder (especially the top management) [2, 3,31]
	Unsatisfactory level of competencies, knowledge and skills [3, 32,33]
	Discrepancy and diversity of perceptions about e-RIM [2, 9, 34]
	Lack of training and education [2, 9, 32]
	Lack of commitment, support and less priority given [3, 8, 34]
	Lack of collaboration, openness and knowledge sharing among discipline [2, 8, 35]
	Less emphasized on the appointment of records professions and their qualifications [9, 24, 36]
	Culture of managing e-RI not fully assimilated [37]
Organization – governance structure, business operation, strategic plan, and culture	Lack of record professionals in organizations [2, 24, 31]
	Incomplete, insufficient, unclear, difficult to implement, not updated and lack of promulgated policies [8, 10]
	e-RIM not incorporated with business operations [2, 3]
	Less emphasized on enforcement [2]
	Unclear e-RIM vision and way forward [38]
	Limited financial support [34]
	No standardization in e-RIM practice [9]
	Non-execution of e-RIM readiness assessment (feasibility study finding)

	Audit not emphasized on e-RIM (feasibility study finding)
	No existence of strategic plan for e-RIM initiatives (feasibility study finding)
	Requisite continuous financial commitment (feasibility study finding)
	'Keep everything' culture (feasibility study finding)
Processes - principles and record life cycle	e-RIM implementation not comply with principle and record life cycle concept [2]
	Difficulty in preserving the e-RI (feasibility study finding)
Technology - capabilities, infrastructure and application systems	Technology driven solution [2]
	Application system does not meet the requirements and specification [2, 39]
	Inadequate ICT infrastructure and facilities (feasibility study finding)
	No systems application used to manage e-RI (feasibility study finding)

A.   *People*

People is predominant for the needs and problems in e-RIM and is the main impediment or impetusto the success of theinitiative [14, 40]. People is the e-RIM stakeholder. They are the creators and users of e-RIM (such as manager or administrator and administrative staff), record keeper, records manager and ICT professional who deal with the design and maintenance of the system [41]. The elements in the people context consist of stakeholders' competency and leadership.

1)   *Competency*

Competency is related to the capability, ability, commitment, knowledge and skills that enable a person or an organization to act effectively in implementing their roles and responsibilities (businessdictionary.com). Competency is essential to e-RIM initiative success [24, 42] and is a perquisite for enhancing the level of awareness and understanding the importance of records and records management [11]. Records professional need to expand their role and responsibilities as analyser, planner, leader, facilitator, administrator, manager, changes driver,

auditor, trainer, and communicator [16, 33, 43] which requires competency in various discipline such as information science, management, business, law, technology and interpersonal skills [6, 33, 42]. Beside records professional, those who create and use e-RI are also required to have certain level of competency [16].

2)   *Leadership*

Leadership is an action of influencing individuals to take an integrated action towards a common goal [43]. e-RIM initiative requires a subtle leadership to drive change, cultivateawareness, and instil commitment and good practice. Thus, they must be

well empowered [44] and understand as to when, where and how to use their 'power' and position to support e-RIM initiative success.

B.   *Organization*

The business operation concept, governance structure, e-RIM strategy and culture are the main elements in the organisation contexts.

1)   *Governance structure*

Governance structure is required as a source of authorities, provide a clear division of responsibilities, to achieve uniformity, improve and enhancing effectiveness and efficiency and support institutionalization process [11, 45, 46]. Governance structure emphasise on accountability to assume responsibility, establishing e-RIM roadmap and mandate management (includes the development, appraising and enforcement) [29].

2)   *Business Operation*

e-RIM approach and strategies should be incorporated with the business operations concept [37]. e-RIM is closely related with the goals and objectives of business operations [12, 16]. Records are created as a result of business operations and how records are managed effects business operations. Understanding how organisations conduct their business operations is imperative in order to know why and when the records is created and how it should be managed [47]. Furthermore, incorporating e-RIM with business operation can eliminate redundancy, reduce business management burden and risk, and enhance the commitment and support to e-RIM initiatives [2, 46].

3)   *e-RIM Strategic Plan*

Strategic plan is an organization roadmap that define the direction, scope, priorities, resources requirement and to monitor progress and evaluate performance [43]. e-RIM initiative need to be controlled, monitored, audited and assessed the progress and achievements consistently [48].

Thus, the e-RIM strategic plan should be established and correlated to the business operations [2, 15].

4) Culture

Organizational culture is influenced by the attitudes, norms and values (beliefs) that make up the behaviour, practices and action [49]. The level of acceptance and effectiveness of e-RIM initiatives can be contingent on the organization culture, especially when it involves changes to mandate and used of new technology/system [15, 46]. e-RIM practice should be part of organizational culture in order to recognize the importance of e-RIM and to transform e-RIM benefit into reality [44, 49].

C. Process

The process contexts is the recordkeeping process allude to record life cycle stages. Its application are steered by RIM principles [4, 50]. The main goal is to ensure the characteristics of e-RI, namely authenticity, integrity, reliability and usability of e-RI are retained as long as it required. However, due to the existence of various record life cycle model and RIM principles, defining and adaptations to those model and principle in Malaysia public agencies context, are necessary.

D. Technology

e-RIM involve with technology for the creation, distribution, maintenance and used of records. While technology is important, it is not the prime key factor to the definite solution to e-RIM problems [6]. However, technology effect and are effected by people and organizational context [14]. Technology is a tool to enable and support recordkeeping process. Hence to ensure the technology become a useful tool, then it is crucial that its capabilities, infrastructure and application systems become part of e-RIM initiatives.

IV. CONTEXTS INTEGRATION

Scholars poses different views regarding e-RIM contexts priority. According to [24] and [26] top management support and commitment (people contexts) is critical for e-RIM initiative success. While [30] argued both the organization capacity and top management support plays an important role as impetus to e-RIM initiative. But [15] point out that people issues are predominant, fundamental and challenging because they concern culture, attitudes, awareness, preferences, knowledge and skill. Meanwhile, [17] perceive that the involvement of stakeholders (people context) and unsuitability e-RIM strategies adopted (organization context) are the main cause of e-RIM initiative cannot be implemented effectively. Whilst, [11] claimed that organization's understanding of the nature of records and records management is the root of e-

RIM issues and problems that led to information crisis. On the other hand [14] see stakeholder understanding as the main barrier to e-RIM initiatives success. However, some researchers argued all e-RIM contexts are equally important and there is a needs to draw a balance between those contexts [6, 12, 13].

Past studies have reveals that e-RIM contexts are dynamic, inextricably linked and mutually support one another [15]. Any changes in those context will effect the goal, focus, constraint and strategy in addressing e-RIM issues and problems. In this regard, e-RIM contexts should be integrated and function as a system that will define and yield understanding of the e-RIM issues and problems [14, 44, 51]. The integration of e-RIM contexts is shown in Fig. 1.
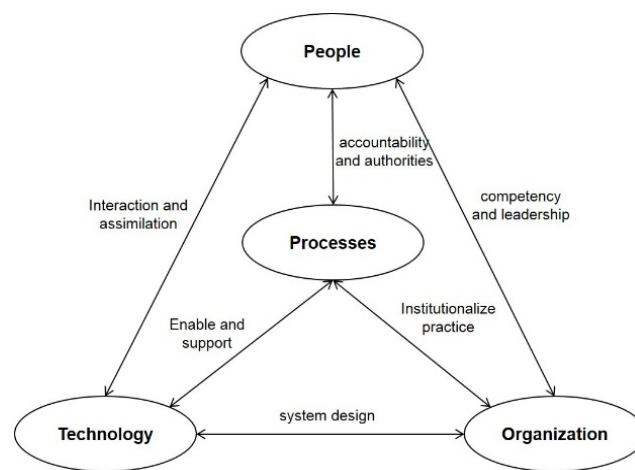

Fig.1. Integration of e-RIM contexts

V. REASONABLE APPROACH

The ineffectiveness implementation of e-RIM initiative in Malaysia public agencies, the changes in working culture and concept of business operation, increasing volume of e-RI usage, technology advancement and the emergence of diversity and interrelated mandates, have created a gap in transforming e-RIM goal and objective into reality and disproportionate between the theoretical requirement and the needs on the real-situation. The existing frameworks are no longer applicable since they were constructed based on theory, technology and mandate purview and attempt to framing a solution to each issues and problems. Constructing such a framework is infeasible or may not be possible in terms of the means, ends and law [21] and are too constraining and unrealistic [16]. Such a framework is a sign of idealism rather than realism [16] and leaning towards perfection which is difficult to implement

(therefore not adopted) and not always achievable or necessary [12, 15].

For this reason, these authors proposed a new framework to be developed using reasonable approach. Such a framework is seen as satisfactory [21], appropriate and fit for providing solutions [16] and suitable for addressing the e-RIM issues and problems, rather than explicitly specifying all possible solutions and striving for perfection.

This is in line with the view of [17] who suggests that there is an urgent need to embrace the concept of reasonableness in managing records in electronic environment. Reasonable is favoured instead of perfection because perfection is unattainable and inhabits progress while reasonableness fuelled progress and implies fit for purpose solution. Perfection is not an appropriate approach to progress practice and achieve positive progress[16].

In manifesting the concept of reasonableness, [17] outlines four aspect: (1) establishment of governing bodies that are empowered to establish and monitor records management and information governance priorities based on value and risk mitigation and accountable for achieving improvements in targeted areas, (2) adoption of long-term perspectives to establish an organizational culture that recognizes the need to manage the lifecycle of business information and routinely incorporates lifecycle management into day-to-day information management practices, (3) commitment of long-term financial and technical resources, and (4) engagement of cross-functional internal and external resources in collaborative partnerships to develop reasonable approaches to attain improvements. However, [17] does not specify the criteria that manifest the concept of reasonableness. Therefore, based on literature, this study concluded, the criteria that manifest the concept of reasonableness are:

• Articulation of e-RIM vision i.e. an attainable vision of successful e-RIM implementation and shared understanding the nature of success [16, 17]. Envisioning successful e-RIM does not mean perfection but toward demonstrating the benefit of e-RIM to the user and organization. People, organization and technology contexts are the instrument for achieving the vision of success. [15, 16].

• Equilibrium and adaptability i.e. e-RIM contexts are interconnected and mutually support. e-RIM initiative is dominate by people, influence by organization, reliance on technology capabilities and effectiveness of process. The effectiveness of e-RIM initiative can be contingent on the contexts equilibrium and adaptability in real situation [15, 16]

• Rationale i.e. framework that based on the appropriateness of the principle and practice (adoption and adaption), achievable goal, acceptable strategy and commensurate with the interests, risk and the cost of implementing e-RIM [6, 15, 17].

- Practical i.e. framework that can and easy to implemented, based on the organizations capabilities and capacity, and adoption of a long-term perspectives (for institutionalizing the e-RIM practice) [12, 15 17].

- Relevant i.e. the goal and focus of the framework are define by the scope and intensity of e-RIM problems, needs and constraints. A framework that fit for purpose [15, 16]

- Responsive i.e. attaining progress, adaptation and improvement can be made accordance to emerging issues and evolving needs (as a result of the changing contexts environment) and lessons learned [2, 29].

Based on those criteria, this paper propose a conceptual model of reasonable approach for e-RIM framework as shown in Fig. 2.
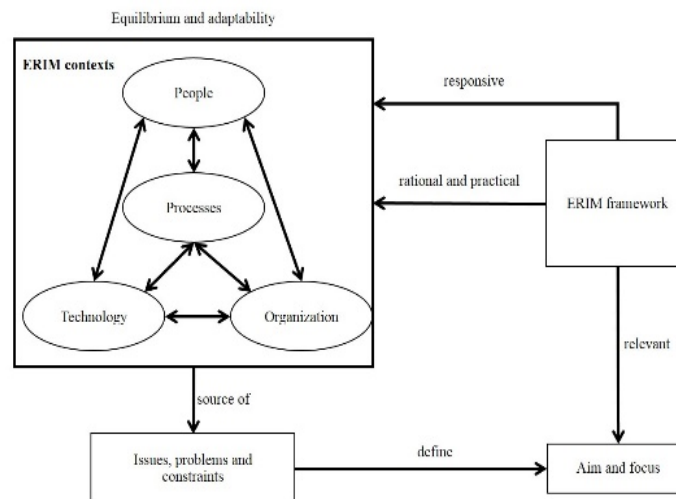

Fig.2.   Conceptual model of e-RIM reasonable framework

VI.   CONCLUSION

People, organization, process and technology are the inextricably linked contexts that underlie the e-RIM issues and problems in Malaysia public agencies. The contexts are the building blocks of e-RIM framework. However, due to the differences of the scope and intensity of the issues and problems and the reliance's on researcher understanding and interpretation, the framework developed are contextual and conceptual in nature. Hence, there is no framework that can fits all to successful e-RIM [1]. Besides that, most of the existing framework are leaning toward perfection, which seems no longer applicable and appropriate for managing e-RI. Perfection impedes from accepting a good enough, satisfactory and fit for purpose-solution [16]. The concept of reasonableness approach for e-RIM framework proposed in this paper, is likely to be appropriate and applicable for addressing the current and potential e-

RIM issues and problem in Malaysia public agencies. The concept provides an approach to seek 'what is true' and to build 'what is effective' [21]. Thus, this ensures the defined vision, goal, focus, priority and strategy for solution are relevant, rationale and practical, and therefore would warrant the usable, implementable and responsive framework.

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