

THEORETICAL MODEL FOR DEVELOPING ELECTRONIC RECORDS AND INFORMATION MANAGEMENT FRAMEWORK: CONTEXTS AND APPROACH

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ABSTRACT

The management of electronic Records and Information (ERI) poses great challenges related to various issues, needs and limitations that have caused difficulties in implementing the initiative. Thus, it is crucial for an organization to identify the contexts underlying the issues, needs and limitation and develop a framework for executing each endeavour. Frameworks based on theory, technology and mandate purviews leaning towards perfection seems no longer applicable or appropriate for managing ERI. There is a need to embrace the concept of reasonableness in managing records in electronic environment. However, approach for developing electronic Records and Information Management (ERIM) framework that is a manifestly fit for purpose solution remain elusive. The aim of this study is to propose a theoretical model for developing ERIM framework which upholds a fit for purpose solution that manifests the concept of reasonableness. These explorations and perspectives are based on the literature review. People, organizations, technologies and processes were identified as the interrelated contexts underlying the issues, needs and limitations, while the attainable vision, rationale, practical, relevance and responsiveness are the criteria which manifest the concept of reasonableness. Drawing from Design Science Research (DSR) model and Military Decision-Making process (MDMP) paradigm, a theoretical model for developing an ERIM framework was proposed. This model provides a holistic approach and systematic process that will ensure the design frameworks are fit for purpose and manifests the criteria of reasonableness.

Keywords – *Electronic Records and Information Management, Framework, Reasonable, Theoretical Model*

1. INTRODUCTION

A framework is a prerequisite for executing an ERIM initiative. Frameworks developed in past studies are contextual and conceptual in nature due to variances in the scope and intensity of the issues as well as dissimilarities in ERIM contexts, focus and priority, constraints, organizational capabilities and capacity; working culture; and mandates used [1], [2]. Therefore, the relevancies and effectiveness of ERIM framework is greatly contextualized [1], [3]. As a result, most frameworks have different goals, priorities, focus and strategies thus, making each framework unique. The absence of a framework which can fit all organisations remains a distinct issue [1], [4].

In addition, most of framework developed in past studies is driven by technology and mandates purview. Although such framework is a perfect approach, it may be rather unrealistic, difficult to implement (and therefore not adopted) and may not always be achievable or even necessary [4], [5], [6], [7], inflexible and disproportionate between the theoretical and the real-situation needs [1]. Developing an ERIM framework that is based on technology and mandate purview without taking the context that underlying the ERIM issues and the degree of the issues into consideration is a sign of idealism rather than realism, as well as leaning towards a perfection [4], [5].

Scholars have argued that framework leaning toward perfection seems no longer necessary or

appropriate for managing ERI. Such a framework is too constraining (costly, require excess resources and time consuming), unattainable, prevent from accepting a good enough solution and inhibits progress practice and achieve positive progress or may not even be possible in terms of methods, means and ends [3]. Thus creating a gap in transforming ERIM goals and objectives (gaining benefits from its implementation) into reality [4], [5], [6], [7]. This has urged the need to embrace reasonableness in managing records in an electronic environment which based on sound analysis and implies a fit for purpose solution [3], [5]. However, a review of past research shows that approaches for developing such framework is still scarce. Most of the existing framework were developed based on researchers' interpretations, understanding, theoretical tendencies, knowledge and experience.

ERIM issues besides being complex, is vested with interrelated issues, requirements and limitations which have strong influence on how ERIM initiatives are perceived, designed, and implemented. Given the nature of ERIM's complexity, it may not be possible to examine the entire range of potential solutions. In [3], the authors described the complexity of ERIM as follows:

- The identification of issues, are problematic due to differences in perspectives and understanding among stakeholders.
- There is a lack of clear criteria for determining the right explanation for the issues. Contexts underlying the issues are interrelated, and one identified problem is an indication of another problem.
- There are various possible solutions but no definite solution to address each issue.
- Solutions are contextualised. Solutions or past practices that were right or worked in one context will not necessary work or depict the best way in different contexts or in a similar context at a different time.
- The significance of the solution is not instantaneous and difficult to attest empirically.

Looking at ERIM issues in pieces is not an effective way to manage ERI, yet the approaches used have been viewed simplistically as straight-line cause and effect, and disproportionate between theoretical requirements and the needs of a real

situation [3]. Hence, prior to developing such framework, it is vital to gain an understanding of the contexts underlying ERIM issues that need to delineate the framework goals (the ends); the criteria that manifest the concept of reasonableness which defines reasonable ways within the means available in order to attain the ends; and have a sound knowledge of the concept of ERIM from theoretical perspectives which have profound influences on the way ERIM initiatives are implemented [3].

To facilitate the development of reasonable frameworks, a theoretical model is deemed necessary. This proposed theoretical model will incorporate the contexts underlying ERIM issues and the concept of reasonableness. Such model provides a holistic approach to understand the important and relevant issues and a rigorous approach in developing a framework through the synergy of problem solving and decision making paradigm. This proposed model can be seen as an approach to seek 'what is true' and to build 'what is effective' in which would warrant a reasonable and fit-for-purpose framework for ERIM initiative implementation.

The aim of this study is to propose a theoretical model for developing a reasonable ERIM framework. The proposed model which were develop by means of literature review which is based on three research questions namely:

- What are the contexts underlying ERIM issues?
- What are the criteria that manifest the concept of reasonableness?
- How a reasonable and fit-for-purpose framework should be developed?

This article is organized to include the method used and literature review findings on context underlying ERIM issues and criteria of reasonableness. After that, the discussion on the proposed theoretical model and finally its conclusion.

2. METHOD

An extensive literature review on ERIM initiative was conducted based on processes suggested by [8]. Literature review is a systematic process for selecting and reviewing literature which requires that content be interpreted in order to elicit meaning, explain its significance, gain understanding, and develop empirical knowledge

related to the issues under study [9]. The literature review process used in this study consist of three sequential steps namely input (searching and selection of quality literature), process (classifying, categorizing and correlating) and output (summarizing and established findings) as shown in Figure 1.

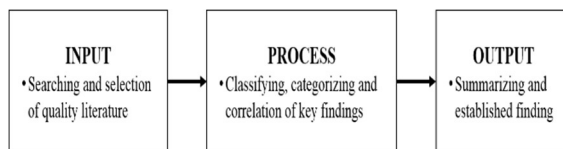


Figure 1. Stages of Literature Review Process

Source: Adapted from [8]

The technique used for searching and selection of quality literature (input stage) was adapted from [10] approach which consists of five steps:

- Step 1: Search for papers with keywords and titles of documents involving 'Record Management', 'Information Management', 'Electronic Records and Information Management Framework' and 'Framework Development'.
- Step 2: Looking through the titles, selecting references in ranked academic journals, conferences papers and white papers (such as policies, standards, and guidelines) related to management, frameworks and issues in record management and ERIM.
- Step 3: Reading abstracts, headings and skimming through bodies of all academic journals collected in step 2 to select quality and recent references related to the topic.
- Step 4: Seeking other papers that were cited in the references during reviewing process of references selected from step 3.
- Step 5: Combining results of step 3 and 4 to make a list of relevant references of the topic

Directional content analysis were used in the process stage. The data extracted from the literature were analysed and structured through systematic process of classification and coding (identify themes and patterns), categorizing (grouping the themes into contexts) and correlation (linking and connecting context) [11]. The entire process seek to

establish the contexts underlying the ERIM issues and criteria of reasonableness as well as the theoretical perspective in developing a framework. The essence of such process is to draw together the literature being reviewed into a whole that exceeds the sum of its part before it is established and summarizing the key findings [8]. The finding will be discussed in the following sections.

3. FINDING

This section presents the research findings concerning the context underlying the ERIM issues and criteria of reasonableness. Following is the discussion on the proposed theoretical model based on the findings.

3.1 Contexts Underlying ERIM Issues

Previous studies has revealed that the contexts are interrelated and mutually influence one another, and need to be understood in terms of what each means and its intensities, as well as their efficacy on ERIM initiative's success [3], [12] Additionally, context underlying ERIM issues, requirements, and limitation should not be simplistically viewed as straight-line cause and effect but should be integrated to function as a system that collectively defines the goals, focus, and strategies of the framework [18], [29].

Based on the literature review, there are various contexts underlying ERIM issues as summarise in Table 1. Scholars hold differing views of the context underlying ERIM issues, grounded on their perceptions, understandings and interpretations. Although some of the contexts used are similar, but carry different meaning, scope and priorities, this indicates there is no established context of ERIM. This explained why the relevancies and effectiveness of ERIM framework is greatly contextualized hence no general framework can fit to all organizations implementing e-RIM initiatives.

Based on the discussion above and issues extracted from the literature review, the contexts are restructured into people, organization, technology and process. Within these contexts, the relevant features as part of the contexts elements are categorised as shown in Table 2.

Table 1. ERIM contexts

Contexts	Source(s)
People, Governance, Practices, Technology and Archive	[13]
Organization, Technology and Mandate	[14]
Governance, Culture, Mandate, People and Technology	[15]
People, Process, Technology and Principles	[16]
People, Process and Technology	[3]
People, Process, Practices, and Technology	[10]

Table 2. Contexts and Elements Underlying ERIM Issues Extracted through Literature Review

Contexts	Elements	Issues	Source(s)
People	Competency	<ul style="list-style-type: none"> • Unsatisfactory level of knowledge and skill • Misleading perception about ERIM • Less emphasis on training and professional education • Training approaches were ineffective and not aligned with core competency prerequisites for managing records in electronic environments • Disorganised and ill-managed, inconsistent, and no standardization in ERIM practices • Unwilling to comply with policies and regulations 	[17], [18] [6], [17], [19] [17], [20], [21], [22] [20], [22], [23] [1], [23] [1]
	Leadership	<ul style="list-style-type: none"> • Lack of awareness and understanding the important of the ERIM among stakeholder especially at a strategic level • Low regard on ERIM initiatives, and lack of commitment and support • Less priority given and lack of efforts to implement ERIM initiative • Insufficient authority to fulfil their responsibilities in implementing the ERIM initiative • Lack of collaboration and understanding between business management, RIM, archive, ICT and law 	[1], [2], [17], [23], [24] [1], [2], [17], [19], [22] [19], [25] [23], [26] [17], [20], [26]
Organization	Governance Structure	<ul style="list-style-type: none"> • Governance structure for ERIM not clearly specified • Lack of attention on the appointment of records professions with right qualifications • Lack of enforcement and supervision and no proper action for non-compliance 	[2], [20], [21], [23], [25], [26] [23], [26], [27] [23], [28]
	Culture	<ul style="list-style-type: none"> • Tendency of using conventional record had inculcated 'paper mind' • Personalization of recordkeeping practices based on individual needs and understanding • A 'keep all' or 'save everything' culture 	[24], [29] [23] [20], [23], [24]

		<ul style="list-style-type: none"> ERIM initiative is often perceived as support functions, no economic value and burdensome 	[1], [23], [24]
	Strategy and Approaches	<ul style="list-style-type: none"> There is a gap between the requirements and organizational capacity in implementing ERIM initiative Limited financial support and requisite continuous financial commitment ERIM not incorporated with business operations Inconsistent or lack of systematic endeavour in institutionalizing ERIM initiatives No existence of strategic plan for ERIM initiatives Less emphasis on ERIM initiative evaluation and readiness assessment Disproportionate relationship between the theoretical and the real-situation needs Driven by mandatory compliance 	<p>[1], [18]</p> <p>[22], [30]</p> <p>[17], [23], [25]</p> <p>[2], [25], [26]</p> <p>[5], [20]</p> <p>[2], [23] [26]</p> <p>[1], [23], [24]</p> <p>[6], [23], [28], [29]</p>
	Mandate (i.e. policy, standard, procedure, regulation and guidelines)	<ul style="list-style-type: none"> Incomplete, insufficient, unclear, not updated, conflicting, difficult to understand and implement Lack of effort to develop, review, promulgate and impose ERIM mandates 	<p>[1], [2], [6], [22], [23], [30], [31]</p> <p>[1], [2], [23], [26], [28]</p>
Technology	Infrastructure	<ul style="list-style-type: none"> Obsolete and inadequate ICT infrastructure Requisite high and continuous financial commitment Lack of effort in ICT development and assimilating new technology for managing ERI 	<p>[18], [22], [30]</p> <p>[2] , [2], [26]</p> <p>[17], [20]</p>
	Development and implementation of ERIM system (ERIMS)	<ul style="list-style-type: none"> The use of ERIMS is onerous, not user friendly and does not meet the user requirements ERIMS used are not conforming to principles and record life cycle Lack of record professional involvement in the development of ERIMS No integrations between the business application system and ERIM functional requirements 	<p>[1], [23]</p> <p>[17], [21]</p> <p>[17], [23]</p> <p>[2], [23], [26]</p>
Process	Theory and Principle	<ul style="list-style-type: none"> Non-conformance to the principles and concept of record life cycle as a whole 	[6], [17], [23], [26]
	Implementation	<ul style="list-style-type: none"> Perceived electronic recordkeeping process as burdensome and time-consuming, resulting in some fundamental recordkeeping processes i.e. classification, retention and disposal scheduling, metadata entry and management and appraisal being less emphasized, ill-implemented or neglected Difficult to assure the integrity and reliability of the ERI as evidence 	<p>[1], [23]</p> <p>[1], [18]</p>

Past studies have revealed that the contexts underlying the ERIM issues are dynamic, inextricably linked, and mutually supportive [1], [32]. Any changes in those contexts will affect the focus and strategy in addressing ERIM issues. However, scholars have differing views regarding ERIM contexts priority. According to [33], people and organization contexts are the main impediments to ERIM initiative success, rather than the technology and process contexts. However, ([13] perceived top management support and commitment (people contexts) as critical to ERIM initiative realization, while [34] claimed both the organization capacity and top management support play important roles in ERIM initiatives. On the other hand, [35] pointed out that people issues are predominant, fundamental and challenging because they concern culture, attitudes, awareness, preferences, knowledge and skill. Meanwhile, [5] argued that the involvement of stakeholders (people context) and unsuitability ERIM strategies adopted (organization context) are the main cause of ERIM initiative cannot be implemented effectively. However [25] described a lack of understanding among stakeholder as the root of ERIM issues and the primary barrier to ERIM initiative's success. Some researchers have argued that all ERIM contexts are equally important and it is crucial to achieve a balance among these contexts. In this regard, the contexts should not be simplistically viewed as straight-line cause and effect, and should be integrated to function as a system that will define and yield an understanding of the ERIM issues [3]. Based on the discussion above, the integration of ERIM contexts is shown in Figure 2.

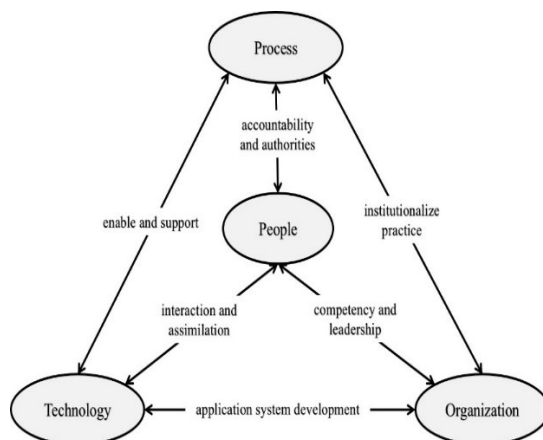


Figure 2. Integration of ERIM Contexts

3.2 Criteria of Reasonableness

Studies of the concept of reasonableness in ERIM initiatives is still scarce. While [4], [5], [6] and [7] have established the need for reasonableness that applies fit for purpose in ERIM implementation, the concept remains unexplored.

According to [4] implementation of ERIM initiative required a proportionate approach rather than striving for perfection. Proportionate approach which is based on sound analysis and risk-based approach, is an appropriate approach to seek for reasonable solution that implies fit for purpose solution. Such approach are necessary as it's allow progress practice and achieve positive progress, minimizing risk, optimizing the use of existing resources and increasing responsiveness to changes in the ERIM context. While [6] highlighted that a framework leaning towards perfection is not always achievable. ERIM framework should base on realism rather than idealism. A framework that is not only relevant but commensurate with organization capacity and capability, useful in practice and implementable in real situation.

On the other hand, [5] stated that as technology changes, the increased use of ERI and the existence of various interrelated mandates, the ERIM strategies that were sufficient in the past became inadequate or increasingly irrelevant. Therefore there is a need to commit to improvement and to adopt the concept of reasonableness in managing ERI. In this case, [5] emphasize that it is imperative to understand the nature of the risk and have a shared understanding the nature of a successful ERIM. The strategies used should be founded on the value/risk/cost to the organization, business needs, compliance with mandates obligation, prioritized targets for improvement, and enable to maximize the benefits of ERIM initiative. In manifesting the concept of reasonableness, [5] outlined four aspects:

- Establishment of governing bodies that are empowered to establish and monitor records management and information governance priorities based on value and risk mitigation and which is also accountable for achieving improvements in targeted areas.
- Adoption of long-term perspectives to establish an organizational culture which recognizes the need to manage the lifecycle of business information and routinely incorporates lifecycle management into day-to-day information management practices.

- Commitment of long-term financial and technical resources.
- Engagement of cross-functional internal and external resources in collaborative partnerships to develop reasonable approaches to attain improvements.

Meanwhile, [7] stated that framework leaning toward perfection seems no longer applicable and difficult to implement (therefore not adopted) and not always achievable or necessary. Such framework that attempt to frame a solution to each issues and needs is infeasible or may not be possible in terms of the ways and means and are too constraining and unrealistic. ERIM strategy should be based on creativity and innovation in framing a rational and practical strategy in terms of ways and means for achieving the ends that enable and simplify the implementation of ERIM initiatives.

Based on discussion above, this study has established that the criteria that manifest the concept of reasonableness are as follows:

- **Attainable vision.** An attainable vision of successful ERIM initiative implementation and shared understanding the nature of success. Envisioning successful ERIM initiative does not mean perfection but toward demonstrating the benefit of ERIM initiative to the user and organization.
- **Rationale.** A framework based on the appropriateness (adoption and adaption) of the theories, principles and practices, attainable goal, acceptable strategies and commensurate with the interests, risk and used of resources in implementing ERIM.
- **Practical:** A framework that can be and easy to be implemented, commensurate on the organization's capabilities and capacity and adoption of a long-term perspectives
- **Relevant.** A framework that is fit for purpose i.e. the priority and focus of the framework is defined by the scope and intensity of ERIM issues and needs in real situation
- **Responsive.** Adaptation and improvement can be made in accordance with emerging issues and evolving needs and limitations as a result of the changing contexts environment.

4. DISCUSSION: PROPOSED THEORETICAL MODEL

Theories which underpin the proposed theoretical models have been drawn from a problem solving paradigm i.e. Design Science Research (DSR) model [36] and a decision making paradigm

i.e. Military Decision Making Process (MDMP) [37], [38]. These paradigms have been selected due to their suitability for adopting an approach to address complex problems in ill-defined environmental contexts and applicability in developing a framework.

The fundamental principles underlying the DSR model are relevance and rigor. The model emphasizes that knowledge and understanding of problems (important and relevant problems), and the application of rigorous methods that draw from the existing body of knowledge, are both crucial in both the construction and evaluation of the framework. The aim is to build what is effective and to seek what is truth [36]. The DRM model provides a structure research process in designing a problem space; formulating a purposeful framework that yields utility, in which the problems space can be effectively and efficiently addressed; and framework evaluated [36].

MDMP is a technical, rational and systematic processes that posits the idea of design as a thought process that precedes planning (the construction of the framework). The model "...stressing on the whole picture and synthesis among the details to produce a holistic view of the solution to the problem" [37]. These thought processes are based on knowledge, experience and understanding to rationally optimize option of action (ways and means), before transforming them into a practical plan (framework design) and providing explanations for adopting a particular action [38], [37] The essence of MDMP thought processes lies in synergy of two analytical reasoning abilities: cognitive and rational reasoning process.

Cognitive reasoning emphasizes a "holistic or systemic view that looks at reality in its entirety by examining the sum total of its parts" [37]. Cognitive reasoning defines the problem space - understanding the nature of ERIM issues, needs and limitation that emerge from the interaction of ERIM contexts. This will, in addition to ensuring relevance, help to define the goals, priorities and boundaries that signify the ends.

Rational reasoning stresses the application of an existing body of knowledge that is appropriately applied, adapted and extended through experience and insight of the researcher [37] to address the problem space in innovative, effective or efficient ways. A body of knowledge may enlighten researchers with substantial knowledge surrounding the theories, empirical work and methodological foundation to yield an understanding of the nature of

the problems, possible solutions, and evaluation approaches. This in turn enables them to develop and evaluate framework in situational contexts based on realism, rather than explicitly specifying all possible solutions and striving for perfection. In addition, the effective use of a body of knowledge assures rigor and nurtures creativity and innovation. Hence, it is imperative to acquire an apt foundation of the body of knowledge and a sound knowledge of tactics and understanding of the concept of RIM from both the business and theoretical perspectives.

Both cognitive and rational process are intended to answer two fundamental questions: what must be attained (the ends) and how to attain it (the ways and means) in order to define operational problems in their situational contexts and elicit appropriate ways and means which imply a fit for purpose solution. However, in practice, both processes are used in different proportions

depending on the complexity of the problem. The cognitive reasoning approach is deemed to be more dominant in the solution of complex problems [37].

Drawing from the discussion above, a theoretical model for developing ERIM is proposed as shown in Figure 3. The proposed model consists of three stages which are integrative and iterative. The first, review of situation is to attain an understanding of the situation through exploring and defining the issues, needs and limitation. The second is a framework design which entails defining the ends and determining the feasible ways within the means available in order to attain the ends. The final stage is to evaluate the design framework so as to establish the framework efficacy and its ability to attain the ends. This model needs to be viewed not as a technique, but as a process involving both cognitive and rational reasoning drawing from ERIM contexts and body of knowledge.

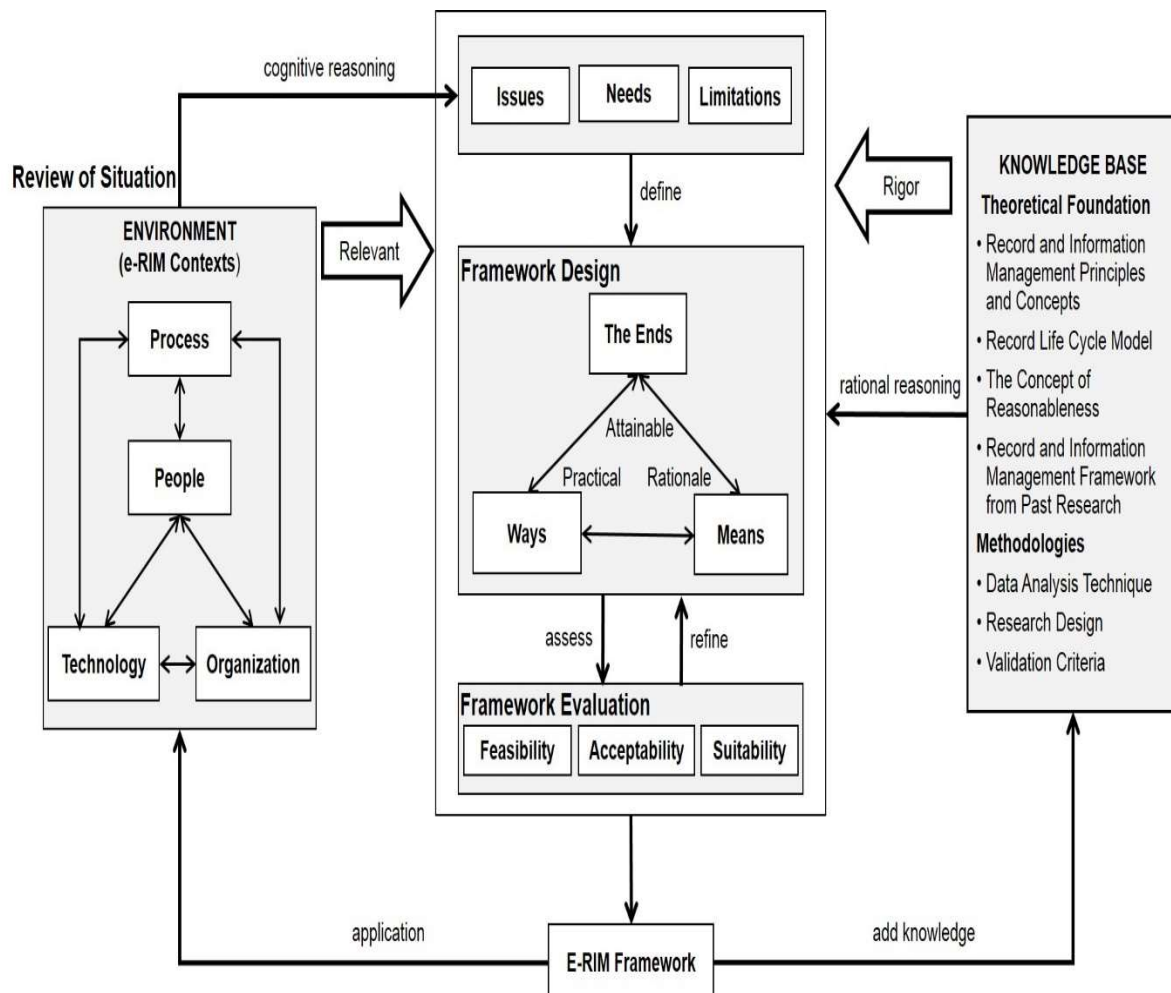


Figure 3. Theoretical Model for Developing ERIM Framework

4.1 Review of the situation: Exploring and defining the issues, needs and limitation

The realm of ERIM research is located at the confluence of environmental contexts (i.e. people, organization, technology and process) that underlie the issues, needs and limitations that influence (impede or impetus or delimited) ERIM initiative. Exploring and defining the relevant and important issues, needs and limitations related to their situational contexts are crucial, as this gives the essential background of the situation and derived to new insights and a deeper understanding of the nature and the state of those issues, needs and limitations and the current solutions, if any, and their efficacy. It is important to attain such understanding as it will lead to a conceptual mapping of the issues, needs and limitations and their contexts, and the importance to address them [36].

The review of a situation should not be merely a collection of facts, but rather a thorough form of analytical reasoning (cognitive and rational) of the relevant and important issues, needs and limitation that are aggregated by the interrelation of ERIM contexts. The aim is to simplify or make sense of important and relevant issues, needs and limitations which may have been imposed (e.g. legal compliance policies) which in turn will determine the goal, priorities and boundaries in which reside the ends [37], [38]. Indeed, constructing a review of situation is part of the definition of the ends. However, reviewing a situation too far ahead (assess the future issues, needs and limitation) or being confined by rigid parameters should be avoided, as this creates confusion and sometimes misleads [37].

4.2 Framework Design: Defining the ends, ways and means

Defining an explicable end (a clear, concise and has a reasonable chance of attainment) is the critical first step in designing a framework which will guide the search of ways and means to attain them [37], [38]. Explicable ends and the abstraction of ways and means are crucial components for framework design [36]. The challenge lies in selecting a reasonable way within the available means that has the most likelihood of success in attaining the ends. Thus, both the analytical reasoning abilities and previous experience and knowledge are fundamental to the design of framework efficacy. However, relying on past experience and prior knowledge can also be a pitfall of a design framework [37]. While it is important to learn the lesson of the past experience, their efficacy

and what to avoid, it is imperative to understand that solutions are contextualised. Solutions or past practices that were right or worked in a specific context will not necessary work or depict the best way in a different context. This discourages finding solutions that worked in the past and projecting them onto the present, without in-depth familiarity of the past and an understanding of the present context.

Researchers should explicitly define the ends and what should be done by outlining the range of means available, how to utilize them, explaining why such approach is used to attain the ends, and describing the environment in which it works. Those definition should be definite, clear and practical as it is important for enabling its implementation and application in an appropriate context. However, given the nature of many ERIM problems, it may not be possible to examine the entire range of potential ways and means (the solutions) to attain the ends. Therefore, defining ways and means should emphasize satisfactory solutions that imply fit for purpose solutions (i.e. rational, practical and relevant and within the means available), rather than explicitly specifying all possible solutions.

Additionally, it is important to keep in mind that defining ways should end focus and means constraints with the inherent criteria of reasonableness, as supported by relevant theories from the body of knowledge for justifying it. A design framework is complete when the defined ways satisfy the ends or imply a fit-for-purpose solution, and can be transformed into action within the means available. The process of defining the ends, ways and means indeed entails a framework design and manifest the criteria of reasonableness.

4.3 Framework evaluation

Evaluation of the design framework is a critical process to establish the efficacy of the design framework that becomes key to success in implementing the framework [36]. While it is important to establish framework efficacy, evaluation should be made in light of the criteria of reasonableness and in the view of the people and organizational contexts in which the designed framework need to function. The evaluation should focus on the framework's ability to attain its ends (how well the framework works and not prove why the framework works) [36], [37]. The purpose is to assure that the design framework, besides remaining consistent with underlying theory and providing insight are feasible, acceptable and suitable. Thus, the design framework should be evaluated through

well-selected methods from methodologies available in the body of knowledge and in an appropriate context [36].

5. CONCLUSION

The relative dependence on technologies to facilitate business operations has resulted in the increasing use of ERI, which has come to be seen as a critical asset. Managing ERI has never been so critical, yet such systems have struggled as functions. ERIM initiatives will continue to be riddled with a myriad of issues which are unlikely to be tamed [3]. A framework is required for implementing an ERIM initiative. However, most of the existing frameworks are contextual in nature, driven by technology and a purview of mandates without taking into account the context underlying ERIM issues. Such framework is a sign of idealism rather than realism which is no longer necessary or appropriate for managing ERI. This has urged the need to develop a reasonable framework which is grounded on realism and implies a fit-for-purpose solution.

To enable the development of a reasonable framework, this study proposed the theoretical model which draw from DSR and MDMP paradigm and incorporate the contexts underlying ERIM issues and the criteria of reasonableness. The findings of this study show that people, organizations, technologies and processes are the contexts underlying the ERIM issues. Those contexts are inextricably linked, equally important and should be integrated and functions as a system. On the other hand, this study has established that an attainable vision, rationality, practicality, relevance and responsiveness are the criteria which manifest the concept of reasonableness.

The proposed models are necessarily, adaptive and process-oriented. The authors argued that it is suitable to address the interrelated nature of ERIM issues and are applicable in developing a reasonable framework that is a fit for purpose solution. The model enabling a view of ERIM from organizational and theoretical perspective. It provides a holistic approach to understand the important and relevant issues and a rigorous approach in developing a framework through the synergy of cognitive and rational reasoning process. The model provides an approach to seek 'what is true' and to build 'what is effective'. Thus, this ensures the defined strategy for solution are relevant, rational, practical and responsive, and therefore would warrant the feasible,

acceptable and suitable framework for ERIM implementation.

The proposed model offers a methodical process that may help researcher to answer two fundamental questions: "what are the problems that needs to be addressed?" and "why the framework developed is a reasonable and fit-for-purpose solution to the problems?" In other words, it explores and identifies issues to delineate the framework goals (the ends) and elucidate the rationale and justification of the ways and means in attaining the ends.

In conclusion, given the nature of ERIM's complexity and the absence of framework that can fit all to a successful ERIM initiative, the proposed model can play a significant role in resolving the fundamental dilemmas that have plagued ERIM framework development and have a potential to become part of the discourse in the ERIM field. Although the proposed theoretical model was developed by relying upon the literature review, the findings form a foundation and provide a direction towards reaching the author's main research aim, developing a framework for ERIM initiatives implementation in Malaysian public agencies, which is currently in progress.

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