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Risk Management in IT Departments: a Process Perspective

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Abstract

This research reports on a field based research investigation into the processes of implementing Risk Management (RM) schemes in IT departments from a sensemaking perspective. Participation and implementation of the framework is conceptualised as a process of organisational learning. The literature on RM, specifically implementation issues associated with RM schemes, is reviewed. This paper focuses on contextual and processual elements as well as the action of key players associated with implementation. This research also suggests a different approach to doing RM research — one that takes into account the interaction over time of learning, context, meaning, process, planning and action around the implementation of RM schemes. The findings will provide insight for theory and practice, detailing the organisational learning that are associated with RM frameworks under certain circumstances, and how these might be assessed and managed.

Keywords Risk Management, Organisational Learning, Sensemaking, Process Research, Qualitative Research.

1 Introduction

This research steps outside the conventional factor analytical perspective of RM research (Darwish 2015) by emphasising and employing terms such as process research, learning, and interpretations to explain implementation with a RM framework. It is argued in this paper, the process by which IT departments come to participate in RM learning for the first time, remains poorly understood.

Until now the majority of research in this field has been influenced by the dominant variance research perspective involving quantitative methods which identify organisational factors to understand correlations between variables and a specific outcome (Wiesche et al. 2015). While this perspective may identify some of the critical factors, it does not examine the dynamic set of contextual elements that interact with one another over time leading to a successful implementation. What needs to be researched this paper argues, is the interplay of events and process by IT departments which come to be involved with RM process. Process research and methods that track activities over time are needed to fill this gap.

This paper takes the position that research on the uptake of RM needs to be widened to examine the process of implementation from a sensemaking perspective within organisations. A sensemaking perspective consists of both the interpretation of information and generating what is interpreted. This perspective is a continual process that makes an inter-subjective sense of shared meaning via interactions and non-verbal behaviour in face-to-face settings in which individuals attempt to negotiate and maintain a shared sense of meaning (Gephart et al. 2010). Accordingly, this research calls for a redirection of research towards RM as a learning process, thereby necessitating an emphasis on the qualitative dynamics of socio-technical change and the impact this has on perceptions.

In line with this call for a wider and re-directed focus on the implementation issue, and factually – because RM learning process and COBIT5 (ISACA 2012) are quite new to many organisations and industry sectors – this paper accordingly conceptualises RM learning process as a dynamic phenomenon– in terms of movement, activity, events, change and temporal evolution– that help manage IT risk through process thinking. Furthermore, the ISACA (2012) – an international professional association focused on IT governance – has conceptualised COBIT5 as a good-practice framework that helps manage IT risks and guide individuals behaviours, based on the perceived usefulness that they expect from a framework (De Haes et al. 2013).

To focus on the process of socio-technical interpretation (Sawyer and Jarrahi 2014), this research uses a framework comprised of individual, organizational, and social forces that clarify some unexamined aspects of implementation. The research examines, through a series of propositions inductively developed from prior studies, the process of how IT departments come to be involved with RM for the first time. Hence, one intent of this research is to provide an alternate framework so that researchers might address a more complete picture of RM. It also is intended to assist practitioners working through understanding a comprehensive framework that can make more balanced and informed learning regarding RM adoption strategies. Fundamentally, in using a sensemaking perspective to understand RM as a social process of learning, the research is focused on answering the following questions:

RQ1. What factors and contextual conditions influence the interpretation and perception of IT departments to adopt a RM framework such as CobiT5 for Risk? RQ2. How do contextual conditions and factors (the antecedents) interact to ensure implementation? RQ3. How can these processes be depicted in a RM framework?

The remainder of this paper is organised as follows. The next two sections present a detailed background to the study by reviewing the concept of process thinking and describes the concept of RM process. After describing the process of sensemaking and participation the paper continues by discussing the concept of recursivity which permits the reproduction of interactions over time. We then propose the research design based on the literature. The last section provides a short overview of the intended research.

2 Theoretical Foundations

2.1 Process Thinking

Mohr (1982) suggests that two fundamentally different types of theoretical approaches can be used to investigate organisational phenomena: variance and process models. While variance models focus on correlations between groups of variables and a specific outcome, process models aim to understand the sequence of events leading to a result over time. This study adopts the later approach.

Recent studies have been made at the organizational level to understand implementations as a process (Langley et al. 2013). Considering organization as a process does not deny the existence of events or

entities but needs to open the "box" to reveal the complex activities and transactions and provide a story that explains how issues interpret, interact and how and why outcomes, are achieved. The concept of recent process thinking in studies focuses on capturing the ongoing and ever-mutating character of organizational life, but without considering the existence of organizations as constant frames of individual action. Thus, events and activities reconfigure and reinterpret an already created pattern, thereby changing its character; every moment is qualitatively various and could be treated as such.

An alternative approach to the variance models begins with a view of RM implementation as a process of learning leading to the practice of introducing RM initiatives that incorporate a balancing of the technical, economic and political aspects of individual, organisational and societal action. This approach departs from a factor analytic perspective to focus on how IT individuals perceive and interpret IT risk, and how individuals seek to produce, negotiate, and maintain a shared sense of meaning. From this new perspective, Daft and Weick (1984) conceptualised learning as making sense or abstracting meaning. Indeed, learning is defined as interpreting and understanding reality in a new way.

Although factor analytic studies have contributed to our understanding of RM practices (Aven, 2016), fundamental problems are associated with empirical research that follows this paradigm. First, most studies following this approach only focus on a small number of pieces of the problem. Second, and most important, the factor analytic approach does not provide insight into the dynamics of the learning process, that is, how and why contextual elements interact and effect RM outcomes. While some progress has been made (Massingham, 2010; Wiesche et al. 2015), researchers should admit that all we have developed so far is a fragmented, static, and narrow understanding of implementation. Indeed, process thinking about RM focuses on how and why RM practices change and act over time. Process thinking emphasises how RM in IT departments come to be reproduced and reinterpreted through ongoing processes. As stated by Olson and Wu (2017), it is essential to advance beyond a factor analytical perspective of organizations focusing instead on individual interpretations and perceptions of actions and events. The next section of the paper develops the concept of RM as a learning process.

2.2 Risk Management as a Learning Process

To provide context to the study, it is important to know how IT risks and RM frameworks have evolved in terms of the emphasis organisations have placed on promoting RM within IT departments (Oliva 2016). Prior studies have identified frameworks such as COBIT5 as tools for increasing efficiency, realising benefits, and optimising risk (De Haes et al. 2013). In addition, the ISO 31000 RM standard describes the RM process as a cyclic process of learning (ISACA 2012). It is noted that the process as defined in ISO 31000 is fully covered by the various processes and practices of the COBIT 5 for Risk process (ISACA 2012). COBIT 5 for Risk, however, provides more extensive guidance and includes areas not covered by ISO 31000, such as risk governance. De Haes et al. (2013) conceptualised COBIT5 as good-practice frameworks that help in managing IT risk and guiding individuals' behaviours.

Wiesche et al. (2015) conceptualised that effective RM process appears as a learning process; but there is a concern with what happens when risks take place. In this way, RM could be considered as a process by which behaviour and action change as a result of experience. Wiesche believed that there is not enough knowledge about how learning is particularly made. Although studies could explain how and why organizations may pass from one category to another, they would not be detailed enough to explain how learning was actually made on the ground or how they were improved and adapted. What issues and contextual conditions influence the interpretations of the IT departments to embark on RM is not entirely known. Likewise, what processes IT departments go through, and descriptions of implementation issues and interpretations remain undocumented. For this reason, the absence of prior research on the RM learning process highlights the need for exploratory and descriptive research on the RM with focusing on individual interpretation and perception of actions and events.

The majority of research on RM has neglected the intentions and actions of the key players, and the process by which a framework such as CobiT5, and the organisational context within which such events occur. Thus, there is a need to investigate how and why the pieces of the 'puzzle' work together to produce an outcome. Assessments from the perspective of IT departments towards adopting CobiT5 are used to study the following question: RQ1. What factors and contextual conditions influence the interpretation and perception of the IT departments to adopt a RM framework such as CobiT5 for Risk?

A number of organisational researchers have produced models of technology adoption. For example, Darwish (2015) suggested a model of the interaction of global, industry and enterprise factors; and Wiesche et al. (2015) further refined this model, providing a general model of enterprise involvement in RM. These models say little about how conditions, in sequence, over time, with chance and random events play a role, result in an implementation. Hence, this study proposes to explore the following

question: RQ2. How do contextual conditions and factors (the antecedents) interact to ensure implementation? RQ3. How can these processes be depicted in a RM framework?

On the basis of the above discussion, this study employing a sensemaking perspective proposes: RM has a dynamic nature that emphasizes the ongoing change to identify new risks. RM improves the organisation's effectiveness and its capability to adapt in the changing environment for obtaining sustainable competitive advantage from learning. Successful RM is generally measured by beneficial outcomes and better ways of performance. In the context of organisational learning, Process Thinking, Sensemaking, and Negotiation of Meaning could be considered as mutually interlocking phenomena. The following section deals with the processes of sensemaking, and dynamic negotiation of meaning.

2.3 Sensemaking Perspective

Sensemaking is the process by which individuals interpret and give meaning to their collective experiences and knowledge. It refers to "the ongoing retrospective development of plausible images that rationalize what people are doing" (Weick et al. 2005). Thus, Weick et al.'s approach focused on the importance of insights into the retrospective aspects of sensemaking, because the attention necessary for sensemaking requires experience to pass before attention can take place. While, Gephart et al. (2010) conceptualised sensemaking as future-oriented aspects "the conscious and intentional consideration of the probable future impact of certain actions of individuals". Emirbayer and Mische (1998) conceptualised how actors engaged in agentic, interpretive processes "oriented the past, future, and present at any given moment." However, sensemaking is considered a continual learning process that makes an inter-subjective sense of shared meaning through interactions in which individuals decide to negotiate, and maintain a shared sense of meaning (Gephart et al. 2010). Thus, individuals use resources and continual participations to identify IT risks through past and present temporal orientation and to provide contexts for proposed entities.

2.4 Action and Dynamic Negotiation of Meaning

Extant organisational studies have largely explored meaning as the distinction between the real and possible (Gephart et al. 2010). In a dynamic perspective, this can be interpreted, as one side of the difference that highlights what is momentarily actual and the other side which demonstrates what could then become actual. When this instability accompanies possible ensuing events, it can lead to a particular dynamic of meaning. Although every meaningful action vanishes as soon as it happens, it produces additional meaningful actions that succeed it. All that people do and say may refer to what has been done and said in the past, yet they produce an experience: they produce meanings that extend, reinterpret, or confirm the histories of the meanings of which they are part. Thus, individuals are considered in a constant process of negotiation of meaning when analysing IT risks.

On the basis of the above discussion, this study employing a sensemaking perspective proposes: action and dynamic negotiation of meaning is an ongoing process that plays an important role within organisations in which IT RM occurs through problem-solving activities (analysing IT risks).

"Participation" and "Reification" are the activities for disseminating meaning within organizations. These activities include a variety of means such as interaction and social networks. The following two sections deal with participation and reification, which are seen as crucial means to facilitating RM.

2.5 Participation and Reification

Engagement in social contexts consist of a binary process of meaning making. On the one hand, people are involved directly in interactions, and other forms of personal participation in social life. On the other hand, people produce physical and conceptual artefacts that reflect their shared experience and around which people organize their participation (Wenger 2001). RM in social contexts is facilitated by both participation and reification. Reification without participation does not carry its own meaning and participation without reification is uncoordinated. Thus, social studies have considered these concepts together to negotiate and renegotiate the meaning of experience. The process is dynamic, active and alive (Wenger 2001). However, participation is considered as a stream of information transferring among individuals to achieve common objectives, with the main emphasis on continual interpersonal interactions. Lee et al., (2015) stressed the importance of effective participation in IT departments through sharing risk-related knowledge for smooth workflow and effective RM.

On the basis of the discussion above, this study employing a sensemaking perspective proposes: participation and reification are ongoing contributions to enhancing and facilitating RM through identifying and assessing IT risks. In other words, RM can hardly occur without participation and reification. With a sensemaking perspective, the effectiveness of RM depends on sharing risk-related

knowledge or participation and interaction among individuals as well as physical and conceptual artefacts or reification. Indeed, IT departments' members use resources such as documents, reports, and experience as well as continual interactions to mitigate IT risks through the past and present.

2.6 Planning

An important feature of communication for identifying risks is organisational documents (Lee et al., 2015). According to Darwish (2015) documents are essential in organisation's plans and planning that has future orientation. Planning facilitates controlling risks from past as well as predicting new risks. Additionally, planning is classified into two subsets of functional and symbolic planning. Functional planning estimates the probabilities of actions with a definite history, while symbolic planning cannot allocate definite probabilities to actions and fantasy documents are mostly created because events are uncertain. The fantasy documents with a future-oriented perspective are developed by "experts" who "predict" uncertain events by implicit information from IT members. Hence, planning can facilitate organizations to save cost, time and to avoid making frequent mistakes by learning issues.

On the basis of the discussion above, this study employing a sensemaking perspective proposes: planning is important means to developing organizational RM through controlling IT risks. Indeed, the accessible knowledge about what actually happened in the past, when available and verified during the planning, may provide helpful knowledge for future with a sensemaking perspective and ongoing process by mitigating uncertainty and risky situations in IT departments.

2.7 Recursivity

The concept of recursivity is considered as recreation of interactions over time (Langley et al. 2013). Indeed, recursivity occurs when the information and experience needed by the organization is offset by the present information, which again enables new information to happen. Recursivity take places in the field of tension between structure and actions, thus an organization's structure and production become mutual media for one another in recursive, which may facilitate RM. However, a knowledge structure is created through production. Although an organisation's knowledge structure was produced in the past, it is considered for future production. It is, however, inconceivable to understand the future without understanding the past, because the past is written into the future.

On the basis of the earlier discussion, this study employing a sensemaking perspective proposes: an organisation serves to bind various components over time. This means that it is impossible to understand that an organisation can exist without such relations. Indeed, organisation assumes interaction around these components and provides the essential stabilization of expectations among people who participate in these activities. It is also impossible that an organisation can exist without production. A recursive perspective highlights that a knowledge structure is formed through production. Indeed, an organisation's knowledge structure formed in the past can be formative for future.

This study adopts a process model suggested by Daft and Weick (1984) as part of their learning theory. The learning process starts with data collection and interpretations and continues with defining learning. In this research a framework will be introduced during the learning process (see Figure 1).

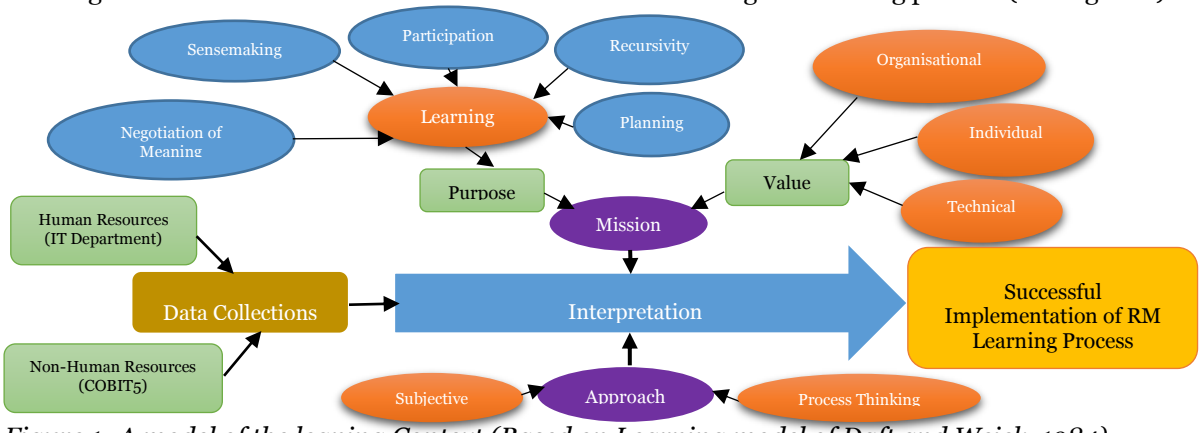

Figure 1: A model of the leaning Context (Based on Learning model of Daft and Weick, 1984)

3 Research Design

The broad objectives of this research are two-fold. The first is to explore, describe, and explain how IT departments in the field go about forming their opinions and assessments of RM as part of the

implementation learning process. In this regard, we need to discover and understand the interaction between contextual issues, the RM framework, IT individual interpretations towards them, and their effect on implementation. The second objective is to develop a theoretical framework for use in guiding the design and analysis of the proposed empirical work. As described in the opening, and in light of the paucity of previous research on the RM implementation, this study provides an alternative perspective to an emerging research topic. It is argued that without more emphasis on the dynamic nature of the learning process, an incomplete understanding of the RM implementation will result. The research also argues that due to the stage of knowledge accrual about this problem, more attention should be paid to the development of new models more fully specified through grounded research that are better able to account for the phenomenon under investigation.

The research design involves three main phases with three different outcomes. In the first phase, a literature review seeks to find evidence supporting initial statements addressing the main research questions. Initial statements or tentative theory involving the identified factors are proposed as a result of reviewing the prior studies. In the second phase a multi-case study will be employed to understand the implementation learning process. The qualitative tools referred to in this thesis include: in-depth interviews, observations, document collection, and personal experience. The design follows an exploratory research strategy by applying Grounded Theory (GT) techniques to analyse data. GT is an inductive approach that allows the researcher to develop a theoretical account of the general features of a topic while simultaneously grounding the account in empirical observations or data. In phase three, the interview data will be analysed using a GT- like approach to develop a theory on RM learning process. This feedback is a continual and iterative process, and occurs at all stages of the process (see Figure 2).

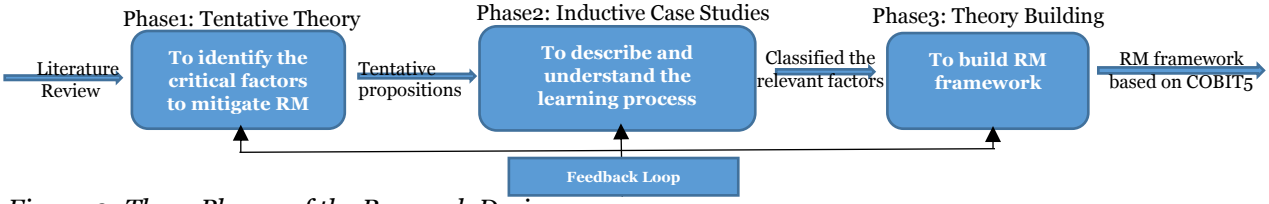

Figure 2: Three Phases of the Research Design

In particular, this research will be a qualitative study; it will be based on a social constructivist paradigm aligned with a qualitative research methodology that helps the researcher to interpret data from selected documents. An interpretive paradigm is based on the view that people socially and symbolically construct their own organisational realities. Therefore the goal of theory building in the interpretive paradigm is to generate descriptions, insights, and explanations of events so that the system of interpretations and meaning, and the structuring and organising processes are revealed. By adopting an interpretive approach this thesis construes knowledge as only gained through social constructions such as language, shared meanings, documents, tools; and is a changing and relative phenomenon. In terms of whether this study's findings are generalizable beyond the immediate set of cases, interpretive studies, do not seek to produce results that are universally applicable. In analytical generalisation, this study only attempts to generalise a particular set of results to some broader theory or research proposition. Thus, it will adopt a combination of two case studies and GT as a research method, and organisational learning theory as the research sensitizing concept. According to Yin (2014), the case study is appropriate when a "how" or "why" research question is being asked about a contemporary set of events, over which the researcher has little or no control. In addition, the case method is well suited to capturing the subjective experiences of IT members and developing theoretical propositions from them. GT-like analysis of the case data will produce a structure of conceptual categories and themes related to the implementation process in the context of IT departments. The use of the GT-like approach will be particularly appropriate, generating a set of propositions that address the critical elements involved in implementing RM— elements to date overlooked in the literature.

4 Conclusion

The study takes the position that research on the uptake of RM needs to be widened to examine the process of implementation from the perspective of IT department members. Thus, this research calls for a redirection of research towards RM as an organisational learning process, thereby necessitating an emphasis on the qualitative dynamics of socio-technical change and the impact this has on individual interpretations of the actions and events. Hence, this research suggest an approach to doing RM research — one that takes into account the interaction over time of intentions, process, and action around RM schemes. Accordingly, this paper is distinctive and differs from previous research in three important ways: First, given the domination by logical positivist research methods (considering RM process as a

black box) (Wiesche et al. 2015) and a variance perspective framing much of the research within IT risk (Olson and Wu 2017), this research provides a fresh perspective to the research domain. Second, a position is taken advocating that research on the phenomenon needs to be widened to examine the process of learning from the perspective of IT members. Prior research has an emphasis on senior management, without the involvement of IT workers in the process of implementation (Aven 2016). Third, the core concerns of this study are pursued by means of inductive analysis and interpretive methods respectively. It is argued that interpretive methods have the potential to produce greater understanding of RM phenomena including the deployment of formal RM frameworks, and IT department members' learning processes. In essence, the interpretive perspective helps us understand an individual's social practices when they are faced with IT risks. These social practices are influenced by the interpretations and perception of individuals to manage IT risk.

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