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Developing the concept of Individual IT Culture and its Impact on IT Risk Management Implementation

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Abstract

Organisational implementations of IT risk management (IT-RM) frameworks often fail due to cultural forces. This work-in-progress study focuses on the action of IT individuals involved with IT-RM implementations. Particularly, this research steps outside the conventional factor analytic perspective of IT risk management research by focusing on contextual and processual elements as well as the actions and interpretations of managers to explain successful implementations. A series of case studies were designed around semi-structured in-depth interviews with IT managers. Grounded theory-like analysis of the case text produced a structure of conceptual categories and themes depicting the successful implementation of an IT-RM framework.

Keywords IT Individual Culture, IT Risk Management, Process Research, Qualitative Research.

1. Introduction

Recently an article appeared in a practitioner journal under the following headline, "The Sheer Gravity of Underestimating Culture as an IT Governance Risk". The feature article stated IT risk management (IT-RM) is deemed so important that it currently tops the risk agenda for Boards and C-suite leaders globally..... and culture is recognised as probably the most important critical success factor (CSF) in a risk context (Pearce, 2019). Pearce went on to write that "with culture so critically important to the success of risk management (RM) and, ultimately the role of culture in IT governance, it is concerning that only fifteen academic research studies investigated the role of culture in IT governance, and of them, only one study explicitly investigated the impact of culture on the risk domain of IT governance" (Pearce (2019: 3).

Pearce (2019) concluded, there is clearly a pressing need and an opportunity for more work to be done in this area. This paper agrees and suggests what needs to be researched is the interplay of process by which individual IT culture and IT individuals successfully come to be involved with IT-RM, and that process research and methods that track activities over time are needed to fill this gap.

According to the Information Systems Auditing and Control Association (ISACA), culture and behaviour of individuals and of the enterprise are very often underestimated as a success factor in governance and risk management activities (ITGI 2008). The limited research to date also falls short of identifying what elements of individual culture are important in affecting IT-Risk management implementations (Jiang and Tornikoski 2019; Sheedy and Griffin 2018). Given this acknowledgement, and the limited academic research that leverages or explores the concept of individual culture as the unit of analysis, this paper's aim is to develop the concept of individual IT culture and its impact on IT-RM implementations. In future publications, the focus will be: 2) to understand the process by which IT individuals come to participate in IT-RM, and 3) to explore and propose a model based on systemic empirical research.

In pursuit of the above objective, the outcome focus of this study is aimed at theory building for describing and explaining the implementation process. The questions guiding this research are: RQ1. What aspects of individual IT culture can be identified during IT-RM implementation? RQ2. What factors and contextual conditions influence the implementation process? In future research, the study will focus on RQ3. What are the processes IT departments go through when implementing IT-RM? And RQ4. How can these processes be depicted in a model?

This paper also argues that research in this field has been influenced by a dominant variance perspective involving quantitative methods identifying factors to understand correlations between variables and a specific outcome (Cram et al. 2017; Jaeger 2018). While this perspective may identify some of the key factors, it does not examine the dynamic set of contextual elements that interact with one another over time leading to a successful IT-RM implementation.

The remainder of this paper is organised as follows. In Section 2, relevant research on the concept of individual IT culture, IT-RM frameworks as IT artefacts, and process research are reviewed. In Section 3 the research design and methods involving a series of case studies designed around semi-structured in-depth interviews to build a process model are presented. In Section 4 Findings, we follow an exploratory research design and applied grounded theory-like (GT-like) techniques to analyse the data collected in six organisations. The paper finishes with an overview of the next steps in the research in Section 5.

2. Theoretical Foundations

2.1 The Concept of Individual IT Culture

Probably the most well-known and simplest definition of IT individual culture is "the complexities of individuals' actions and behaviours towards IT" (Walsh, 2014). By understanding a person's IT needs and motivations, the IT individual culture concept is vital to understanding how IT implementations can be managed. Leidner and Kayworth (2006) interpreted an IT culture as consisting of IT values, the specific values a person attributes to IT. However, this study conceptualises that individual IT culture can differ from values shared by an organisational group, despite having a shared culture may have different individual interpretations. In fact, this paper focuses on understanding individual interpretations in IT-RM implementation, which can be different from a dominant organisational culture.

2.2 IT-RM Frameworks as IT Artefacts

De Haes et al, (2017) conceptualised COBIT as an IT-RM framework that helps manage IT risk and guiding individuals behaviours, based on the perceived usefulness, they expect from an IT artefact. COBIT describes a set of good practices for IT managers and considers IT culture as an enabler to help shape individual's intentions and behaviours for achieving the effectiveness of IT-RM (Azizi and Rowlands 2018). Prior studies in IS research have identified IT-RM frameworks as IT artefacts, and as such are tools for increasing efficiency, realising benefits, optimising resources and optimising risk (De Haes et al, 2017). The ISO 31000 IT-RM standard also describes it as a dynamic process, iterative and responsive to change, taking human and cultural factors into account (ITG 2008).

Leidner and Kayworth (2006) suggested that an IT artefact is non-neutral in nature and provides various values to different individuals, who in turn have their own special values. Hence, it's essential that individuals' work values and practices need to align with values embedded into the IT artefact to achieve successful IT-RM implementation. This research considers each interaction an IT individual has with an IT artefact (IT-RM) as the basic unit of analysis that influences the implementation process, rather than considering the IT-RM as a static bundle of features.

2.3 Process Research

One long-term objective of this study is to explore, describe, and and explain how a successful ITRM implementation takes place – the process, and to investigate how and why the pieces of the implementation "puzzle" work together to produce a successful outcome (Langley et al. 2013). In this regard, this research steps outside the conventional factor analytic perspective of IT-RM research by focusing on contextual and processual elements as well as the actions and interpretations of IT individuals to explain a successful implementation.

Mohr (1982) noticed that two different types of approaches can be used to investigate organisational phenomena: variance and process models. Although variance models or factor analytic studies have contributed to our understanding of IT-RM practices (Chen et al. 2019; Themsen and Skærbæk 2018), 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 implementation process, that is, how and why contextual and processual elements interact and effect IT-RM outcomes. While some progress has been made researchers should admit that all we have developed so far is a fragmented, static, and narrow understanding of implementation (Wiesche et al. 2015).

3. Research Design and Methods

The study synthesised data from the literature and six case studies to inductively develop a cultural configuration that shows the dimensions of individual culture facilitating a successful IT-RM implementation initiative.

This research design is a qualitative study with an interpretivist research methodology and adopts a combination of case studies (Yin 2014) and GT-like techniques (Rowlands 2005) as a research method. The overall research design involves three main phases with three different outcomes. In the first phase, a literature review sought to find evidence supporting initial statements addressing the main research questions. Initial statements or tentative theory involving the identified factors in Table 1 are proposed as a result of reviewing the prior studies. In the second phase a multi-case study was employed to understand the implementation process. Data collection techniques in this study included: in-depth interviews, observations, document collection, and personal experience. In phase three, (to be conducted) the interview data will be analysed using a GT-like approaches to develop a theory of individual culture impacting on IT-RM success (see Figure 1).

We interviewed 27 IT individuals at six organizations who were either IT department managers or participated in the IT-RM process and could therefore provide thorough perception of the process of IT-RM implementation. We selected cases with a long history of actively engaging in managing IT risk.

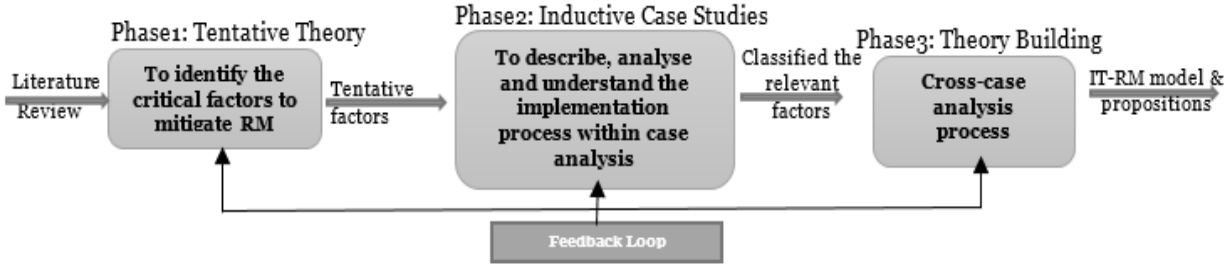

Figure 1: Three Phases of the Research Design

4. Findings

RQ1: What aspects of individual IT culture can be identified during IT-RM implementation?

Our inductive analysis enabled us focus on the degree of prominence of each identified individual IT culture. The degree of prominence was determined by considering individual actions and behaviours. and across the interviews, we found three different but important types of immediate responses to IT-RM. Given that they each illustrated a different attitude towards IT-RM, we labelled these responses as representative of three different IT individual culture: supportive culture (case 4 and case 6), unaware culture (case 1 and case 3) and resistant culture (case 2 and case 5).

Supportive IT Culture

One set of individuals within case 4 and case 6 took an active and welcoming approach to IT-RM. They adopted participation and were extremely positive about the benefits of the IT-RM. We categorised this cluster of individual as belonging to a supportive IT culture:

I believe, there is really no resistance because IT-RM improved IT project planning. To me IT-RM is a cost-effective way to make sure to complete IT projects on time. It is a positive framework and everybody that is forward thinking could definitely adopt it (case4).

IT Individuals with the supportive culture believed that their vision of an effective framework was perfectly manifested in IT-RM. However, we consider "vision agreement" – alignment between the IT development team's view/ IT manager view of the framework and the IT individual group's view of the framework as risk optimisation and resource optimisation – was manifest in the *supportive IT culture.*

Unaware IT Culture

A second group of individuals within case 1 and case 3 found IT-RM complex. They were unsure about the benefits of IT-RM and explained that although they could receive some basic reports, they remained confused by many of the functionalities. They were confused how IT-RM could be integrated into existing organisational processes. We categorised this cluster of individual as belonging to an *unaware IT culture*:

It was too hard to engage people with this system; people could not find out how this framework works and how it would set in process. They were interested and were not really motivated to involve with it (case 1).

Although individuals with *unaware IT culture* realized the values of the framework, their initial experience of IT-RM pointed to "vision conflict", i.e. their belief that IT-RM is a complex and difficult to understand and was at odds with the values attributed by the IT individual to the RM framework.

Resistant IT Culture

The last group of individuals within case 2 and case 5 considered the IT-RM framework negatively soon after its presentation. They began to judge the framework as unreliable and inaccurate, and therefore had no incentive to participate with RM in their everyday tasks. These individuals complained that the framework was incapable of providing accurate reports due to the time limitations and the framework's

other weaknesses and failings. We categorised this cluster of individuals as belonging to a *resistant IT culture*:

In my job, I have to prepare accurate reports for management, unfortunately information that I require to have are not forthcoming when trying to use this framework. It wasn't working well. So, it can influence performance and I am really disappointed (case 5).

In this culture, the initial reactions pointed to the concept of "vision conflict"- inconsistent between the expectations of IT-RM and the individual beliefs of the resistant IT culture.

RQ2: What factors and contextual conditions influence the implementation of IT-RM?

The analysis of the second question began by focusing on factors and contextual elements identified through interviews, categorised based on prior studies about RM implementation. The findings were then used to tentatively propose a process model of IT-RM implementation. These elements include: "organisational and management factors", "individual factors", "organisational capability factors" and "technical factors".

Organisational and Management Factors

- Commitment of IT managers (OM_MANAGEMENT)
- Allocating specific responsibility (OM_RESPONSIBILITY)
- Proactive environmental organisation (OM_PROACTIVE)
- Logical deduction and practical experience (OM_DEDUCT&EXPER)
- Management lacking time and resources (OM_RESOURCES)

A key organisational factor was commitment and support of an IT manager. As commented by case 4, IT managers are considered as valuable advisors who enhance organisational responsiveness.

We had guidance to help people here, I have been involved in work at all moments. We embed the process within department and are in-charge of ensuring participation of members in this implementation.

A further factor identified was for allocating specific responsibility for implementing IT-RM. In fact, different people within an IT department should be given responsibility for implementing different parts of the framework.

Anyway, I believe staff members generally have a better knowledge of the day-to-day functioning of the organisation than do management. The management members prefer to do the legal and ethical responsibility for implementing (case5).

Hence, the requirements for qualified staff, combined with training for implementing IT-RM was associated with having a supportive IT manager during implementation.

Individual Factors

- Perception of systems (I_PERCEPTION)
- Level of trust (I_TRUST)
- Decision-making power (I_POWER)
- Increased understanding (I_AWARENESS)
- The need for an incentive (I_ MOTIVATION)
- Attitudes toward involvement (I_ ATTITUDE)

The most influential of these individual factors was power. As pointed out in case 2 and case 4, most of the members believed that power based on senior positions in a hierarchical organisational structure influence individuals' participation.

As a manger, part of my job to be able to give a good quality service is to know everything, often members aren't interested and said: why do you want to know this? (case5)

As mentioned by case 6, the need for creating an incentive is also considered as a key individual factor:

Sometimes we asked people to send my opinions about developing this framework, it gives them a wonderful feeling that their experiences can be beneficial. We listen to people and we often implement everything that we should consider based on their needs and worries (case 6).

Organisational Capability Factors

- The need for training individual (OC_TRAINING)
- Have a common understanding (OC_SENSMAKING)
- Reporting (OC_REPORTING)
- Organisational competitiveness (OC_COMP)

According to this category, training was identified as a main factor in implementing IT-RM:

I found it simple and complex. The framework was not user friendly at all, it was not understandable to me so I complained about that. I attended the workshops and I have no problem (case 2).

…. The popular argument is updating management: when we need to make some changes in critical times, he will act quickly. It is useful for predicting events and to pull out documents when needed (case 6).

Technical Factors

- System efficiency (T_ENABLER)
- Tailoring the system (T_CHANGE)
- System flexibility (T_FLEXIBILITY)
- System security (T_ SECURITY)
- Establish or update the system (T_UPDATE)

The most influential of these technical factors were system efficiency and flexibility.

I see it [IT-RM] as a facilitator for mitigating risks and benefits for our organization. Otherwise, management will have to invest a useless lot of endeavour and resources to eliminate problems (case 6).

Issues	Interpretations for Supportive	Interpretations for Resistant /Unaware
Organisational	• Commitment of IT manager • Allocating specific responsibility	• Lack of management support • Unwilling small firms to implementation • Lack of responsibility of individuals
Individual	• Perception of systems • Level of trust • Decision-making power • Increase understanding • The need for an incentive	• Difficulty associated with perceptions of systems • Hierarchy structure • Lack of knowledge • Unwillingness toward involvement • Negative influence due to impulsiveness
Organisational Capability	• The need for training • Have a common understanding • Reporting	• Take time and cost for training • Different understanding about IT-RM • Simplest reports and ignoring the advanced
Technical	• System efficiency • System flexibility • Tailoring the system • Establish or update system	• Complexity and difficulty • Lack flexibility • Unreliable and inaccurate

Table 1. Main issues and individual interpretations

In sum, one purpose of this study was to identify and describe the issues and contextual elements affecting IT-RM implementation. Table 1 summarises the qualitative assessments of the main issues identified surrounding each case. The first column lists the main issues identified having an influence on implementation. The second and third columns identify the interpretations for each issue while classifying them based on the three prominent individual culture.

5. Next Steps

As this research is ongoing and the findings tentative, full analysis involving cross-case analysis is the next step. We intend to synthesise our findings to illustrate which dimensions of risk management and culture best facilitate IT-RM implementation. The research also intends to generate an IT-RM model in following publications by combining the inductive model generated by this phase of the research, with phase 2 and 3 with insights from existing formal theory.

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