Management of Knowledge and Ignorance in the Context of Organisational Learning: A Research Agenda

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Abstract: Nowadays, a company's competitive advantage is based on the decision to exploit, to develop the power of knowledge as a source of competencies. Recent research asserts that knowledge management (KM) is the management of the known, whilst the management of the unknowns poses a greater risk to organisations. There is an emerging view that the KM approach disregards the unknown and leads to the creation of ignorance and organisational ignorance (OI). The management of ignorance or ignorance management (IM) is to prevent OI, and would therefore facilitate positive outcomes with organisational learning (OL). This paper discusses the need for fostering KM practices with IM towards OL, with particular reference to the business environment in Trinidad and Tobago (T&T). It elaborates a research initiative, and outlines the purposes, hypotheses and areas for devising a KM/IM capability model. This paper serves as its purpose as a research agenda for a three-stage approach of the study. Built upon the present Stage 1 of literature review, the next two stages would be empirical data acquisition and model development and testing that would evaluate the applicability and efficacy of the model using the empirical data to be acquired in manufacturing enterprises in T&T.

Keywords: Knowledge management, ignorance management, organisational learning, research agenda

1. Introduction

Knowledge management (KM) has since the 1990s come to the forefront in academia and organisational practices as a general approach in the management of knowledge (Wiig, 1997; McAdam and McCreedy, 1999). Yiu, Sankat and Pun (2013) regard KM as the "managerial activity that develops, transfers, stores and applies knowledge". The theories of KM and organisational learning (OL) are closely interrelated or symbiotic (Pun and Nathai-Balkissoon 2011). Argote (2012) consolidated the view of many researches to define organisational learning (OL) as "a change in the organisation's knowledge that occurs as a function of experience". KM and OL are distinguished, such that KM is considered to focus on the content of the knowledge that is acquired, created, processed and utilised by the organisation versus OL emphasis on process (King 2009).

As the rate of change accelerates and competition intensifies globally, a company's survival is dependent on how well it can position itself and how it manage its efforts with 'knowledge'. KM has become significant for organisation effectiveness and development (Pun and Nathai-Balkissoon 2011). Core KM themes relate to: 1) the creation of knowledge repositories; 2) the improvement of knowledge acquisition; 3) the

enhancement of the knowledge environment; and 4) the management of knowledge as an asset. The impact of KM on an organisation's performance is strongly tied to the ability of an organisation to identify where KM will be of most value (McAdam and McCreedy, 1999; Bose, 2004).

Thornton (1998) asserts that the "future belongs to organisations that aggressively manage what they are not aware of. Lambe (2002) adds that in conditions of uncertainty, "organisations must get to the top of what they do not know". Organisational ignorance (OI) impacts the capabilities and potential of organisations in evaluating opportunities to learn and identify and/or create new knowledge. The management of ignorance, or in short, ignorance management (IM), is to prevent OI on one hand, and facilitate positive outcomes with organisational learning (OL) on the other. King (2009) contends that "the goal of KM" is to achieve OL. This study explores the concepts OI and related IM approaches in an attempt to derive a KM/IM capability model for fostering OL in organisations.

2. Literature Review

2.1 Organisational Knowledge Defined

The term 'knowledge' signifies an area of conflict for many years. Diakoulakis et al (2004) advocate that this is

attributable to the existence of resemblant concepts, such as data and information, which can easily approximate some forms of knowledge. Knowledge as defined by the Oxford Dictionary is familiarity gained by experience. It is product of human reflection and experience, while data is raw observations of the past, the present or the future and information is the pattern(s) that individuals instill on data (1997). It is generally accepted that there is a hierarchical relationship among data, information, knowledge, and wisdom, with data seen as a primary or raw form, information being a processed form that gives usefulness to data, and knowledge being the result of judicious application of information (2006).

Polyani (1958) firstly defined tacit and explicit categorisations of knowledge. According to Roth (2003), knowledge has two dimensions; firstly, it exists on the individual, group and organisational levels of a firm; and secondly, it is either explicit or tacit. Explicit knowledge is described as a codified form of knowledge, recorded facts theories and principles (Leiponen, 2006). This type of knowledge is more tangible and can be found in written documents. On the other hand, tacit knowledge is difficult or impossible to be articulated in written documents and is tacitly transmitted and learned. Tacit knowledge resides innately in people and tends to be embedded by way of their experiences, values, intuition, values, and contextual information. This type of knowledge is highly subjective and difficult to capture or convey in a straightforward manner (Wilcox King and Zeithaml, 2003; Yiu, Sankat and Pun, 2013).

In organisations, knowledge often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices, and norms. In other words, corporate culture, best practices, core competencies, skills, or strategic visions are critical parts of the total stocks of knowledge in an organisation (Bose 2004; Diakoulakis et al., 2004). It becomes essential to continue developing and managing company's knowledge so as to keep abreast of continuing change from the environment and to gain advantages (Yiu, Sankat and Pun, 2013). Organisational knowledge is thus the ability of the organisation to perform differentiating it from competitors and obtaining competitive advantage. Wilcox King and Zeithaml (2003) put forward three (3) characteristics that define

organisational knowledge more definitively such that 1) it is the ratified perspective of multiple knowers, 2) it is bounded within scope and context, and 3) apprehended through language.

2.2 Knowledge Management and Organisational Learning

Knowledge management is both a science and an art (Pun and Nathai-Balkissoon 2011), and is a relatively new and evolving discipline that has garnered interest from both academicians and practitioners (Migdadi, 2009; Ma and Yu, 2010). Lytras and Pouloudi (2003) describe KM as a holistic approach to management studies and practice. Hung et al. (2005) regard KM as a managerial activity that develops, transfers, transmits, stores and applies knowledge. According to Malhotra (2005), KM embodies organisational processes that seek synergistic combination of data and information-processing capacity of information technologies, and the creative and innovative capacity of human beings. KM is primarily concerned with the design and development of practices, policies and technologies that can provide a basis for the organisational approach for the utilisation and management of knowledge (Nifco, 2005; Luhrman and Cunliffe, 2013).

Wong and Aspinwall (2005) contend that KM is an emerging set of organisational design and operational principles, processes, organisational structures, applications and technologies. King (2009) adds that KM is "the planning, organising, motivating and controlling of people, processes and systems in the organisation to ensure that knowledge-related assets are improved and effectively employed". This is a strategic management concept drawing from various disciplinary areas (2009) and has emerged as a phenomenon with wide-ranging implications for organisational performance and competitiveness (Yiu, Sankat and Pun, 2013). The KM processes are divisible into a number of inter-connected activities that depend on the particular industry, the nature of the firm and the strategy it adopts (Wang and Ahmed, 2005). Table 1 depicts the eight components of the knowledge value-adding process. KM contributes towards organisational learning (OL) and helps build a learning organisation (LO).

Table 1. Components of the knowledge value-adding process

KM Processes	Descriptions
1. Knowledge Identification	Searching for, and locating new information, ideas and knowledge that are relevant to the organisation.
2. Knowledge Acquisition	Acquiring knowledge identified to be relevant, and absorbing such knowledge in the specific organisational context.
3. Knowledge Codification	Codifying tacit knowledge, categorising knowledge acquired and labelling knowledge.
4. Knowledge Storage	Recording knowledge, retaining and maintaining knowledge, and clearly signposting the knowledge directory.
5. Knowledge Dissemination	Retrieving knowledge stored, making it available to knowledge seekers and users.
6. Knowledge Refinement	Improving, transferring and adapting existing knowledge to changed situations, or using existing knowledge in a new way.
7. Knowledge Application	Putting knowledge into action, utilising knowledge to produce organisational outcomes.
8. Knowledge Creation	Nurturing, seeding and incubating new ideas, and generating new knowledge that leads to major breakthroughs.

Source: Taken from Wang and Ahmed (2005)

Anders (2001) made a distinction between OL and a LO. OL refers to "processes or activities" of learning whereas LO is a form of an organisation "in and of itself". The concepts of KM are integrally linked with that of OL, as depicted in Figure 1. Some recent studies found that OL results from shifts in the 'state of knowledge', and includes the acquiring of knowledge, the sharing of understanding, and the exploitation or application of the knowledge to draw insight into activities (Rowley, 2006; Pun, and Nathai-Balkissoon, 2011). It is stressed that a continuum of knowledge (whether pertaining to process, system or culture) with 'emergence of new knowledge' on one end, and 'embedding' or adoption of new knowledge, on the other. Wang and Ahmed (2005) also contend that organisations actively encourage, support, and reward OL by focusing on collective individual learning, process or system, culture or metaphor, KM, and continuous improvement. Figure 2 shows a mapping of four key areas of OL and KM. Pun and Nathai-Balkissoon (2011) argue that as both KM and OL continue to develop, they will naturally merge.
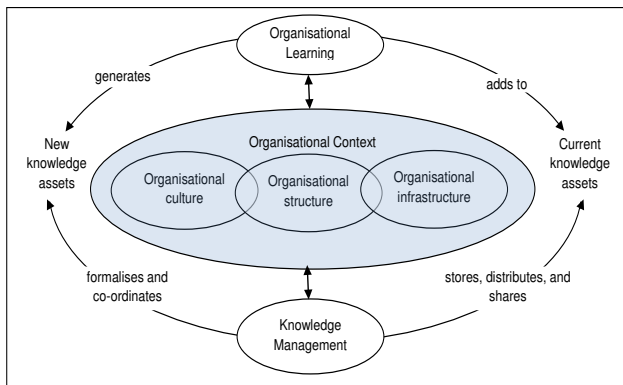

Figure 1. The OL and KM Relationship
Source: Abstracted from Pemberton and Stonehouse (2000)

Figure 2. Mapping of Key areas of OL and KM
Source: Lurhman and Conliffe (2013)

2.3 Organisational Ignorance and Ignorance Management

Ignorance is usually treated as either the absence or the distortion of true knowledge and uncertainty as some form of incompleteness in information of knowledge (1989). Disputes over ignorance and knowledge exist as far back as Socrates's assertion of wisdom lying in what he did not know (2012). In the taxonomy of ignorance, non-knowledge is seen as a sub-type of ignorance (Svetlova and van Elst, 2012). Notwithstanding, Ayyub (2010) categorises ignorance into two types, blind and conscious and shows the hierarchical relationship amongst its various sources and nature.

In the fifteenth century, Nicollas of Cusa developed a concept of "learned ignorance". This doctrine taught that "the more a wise person knows that he is unknowing the more learned he will be" (Hopkins, 1981, p. 3). Nicollas of Cusa viewed learned ignorance as a reasonable way of combining knowledge and ignorance through awareness of limitations of knowledge Moreover, Harvey et al. (2001) specified four (4) types of ignorance to be considered at work in organisations, which are, populistic, pluralistic pragmatic and/or pragmatic (see Table 2).

Sankaran, Kouzmin, and Hase (2005) identify ignorance as becoming critical in the existing micro- and macro-climate of rapid change due to fast progressing globalisation and hyper-competition. Table 3 illustrates the nature of knowledge gaps that widen in an organization particularly when the environmental context (globalisation) of decision making is changing dramatically (Harvey et al., 2001). Halbesleben and Ronald Buckley, 2004; Halbesleben et al., 2007) contend that pluralistic ignorance is a situation in which an individual holds an opinion, but mistakenly believes that the majority of his or her peers hold the opposite opinion. This is a complex phenomenon that has important consequences for organizations, particularly as it relates to the behavior of individuals in organizations. Davies and McGoey (2012) add that ignorance should not be treated as dualistic opposites or the absence of knowledge since knowledge has restrictions and on the other hand ignorance has no perceptible parameters.

Organisational ignorance (OI) is emerging as a "legitimate corollary to that of organisational knowledge" (2008). However, definitions of OI are very few and a small insight is given as to how OI arises. According to Harvey et al. (2001), OI can be viewed as a multidimensional concept, which emerges in specific contexts of organisational dialogue that can influence the perceptions of constituencies both inside the organisation, as well as outside the organisation. Sankaran, Kouzmin, and Hase (2005) derived from Zack (2000) that a comprehensible framework to define and manage OI is required to mitigate four (4) knowledge processing problems articulated. These are:
1) Uncertainty (insufficient information)

Table 2. Dialogical contexts engendering four types of organisational ignorance

Type of dialogue Issue/type of ignorance	Evaluation Pluralistic	Interpretation Populistic	Inquiry Probabilistic	Negotiation Pragmatic
1. Nature	Epistemic	Symbolic	Hypothetical	Dialectical
2. Source	Policy	Culture	Service	Practice
3. Criterion	Credibility	Solidarity	Information	Utility
4. Reference	Future perfect	Past	Present	Future
5. Process	Normalising	Confirming	Disconfirming	Affirming
6. Emphasis	Influence	Understanding	Analysis	Identification
7. Goal	Interpretation	Persuasion	Testing	Action

Source: Harvey et al. (2001, p.452)

Table 3. Managing toward global knowledge creation

Managing global knowledge 'gap'	Domestic paradigm building	Global paradigm building
1.Managing from knowing	- Knowledge based (proven point, accepted facts)	- Not knowing plus recognition of the need to know new knowledge
2. Managing from unknowing	- Ignorance of knowledge (tacit ignorance)	- Ignorance of ignorance (tacit ignorance)
3. Managing from ignorance	- Suppressed knowledge (taboos and denials)	- False knowledge (errors and false truths)
	- Pluralistic ignorance	- Probabilistic ignorance

Source: Abstracted from Harvey et al. (2001, p.460)

2) Complexity (processing more information than comprehensible)

3) Ambiguity (a conceptual framework to interpret information not available)

4) Equivocality (numerous contending frameworks).

Harvey et al. (2001) argue that organizations would experience myopia in their evaluations of opportunities to create new knowledge in the prevailing dynamic context, if they fail to realise how the concept of organizational ignorance would enhance both their capabilities and potential for innovation.

On the other hand, ignorance management (IM) is the process by which ignorance, in all of its various and sundry forms, is captured, tagged, stored, mapped, managed, manipulated, and last but certainly not least, corrected (Galvin, 2004). According to Israilidis, Lock, and Cooke (2013), IM is a process of discovering, exploring, realising, recognising and managing ignorance outside and inside the organisation through an appropriate management process to meet current and future demands, design better policy and modify actions in order to achieve organisational objectives and sustain competitive advantage. There is a gap in literature to properly define and support the theory towards IM and new ways of addressing knowledge related problems by providing an alternative perspective is emerging through the concept of IM.

Moreover, Lambe (2002) advocates that an agenda of IM would address such issues as 1) relationship between organisational culture and structural capital, 2) organisation's adaptability to and recognition of risk, and 3) individuals and their interpretations of uncertainty require the authority that changes judgments into value-creating practices with an enterprise.

3. A Research Agenda

Nowadays, many industry leaders are engaging in KM and OL in order to leverage knowledge both within their organisation, and externally, to their shareholders and customers. The embedding and embracing of KM/OL within an organisation requires attention to objectives, types of knowledge, technologies, and organisational roles (Pun and Nathai-Balkissoo, 2011). Okes (2005) advocates that questions to be addressed include: 1) what knowledge is critical to the organisation? 2) Where and how does the organisation gain that knowledge? 3) What does the organisation do with it? 4) How is it used, distributed and stored? 5) To whom does the organisation go for help, and who comes to the organisation for help? and 6) what metrics are used to track the management of knowledge? One challenge for today's organisations is thus to match and align performance with corporate strategy, structures and culture. This implies an integration of OL and KM and deployment of performance measures so that the results are used and acted upon to attain competitive performance (Pun and Nathai-Balkissoo, 2011).

Moreover, Zack, Cortada, and Woods (2000) put forward that it is more important to manage ignorance despite the widely held approach of managing organisational knowledge. There is an emerging view that the KM approach disregards the unknown and leads to the creation of ignorance. Roberts (2009) argues that KM is the management of the known whilst the management of the unknowns poses a greater risk to organisations. The goal of ignorance management (IM) is to prevent organisational ignorance.

The Industrial Engineering Office of The University of the West Indies has initiated a research project with

the aims to 1) identify the factors affecting KM and IM, and 2) develop a KM approach with IM initiatives to foster organisational learning in line with performance goals in manufacturing enterprises of T&T. The study sets forth two (2) hypotheses as follows:

- Hypothesis 1: The commonalities between KM and IM facilitate their integration in organisations.
- Hypothesis 2: Manufacturing enterprises developing KM/IM capability would strengthen organisational learning.

A generic KM/IM capability model is proposed (see Figure 3). The model attempts to incorporate the features of both inputs-driven and outcomes-driven paradigms of KM. On one hand, the inputs-driven paradigm considers KM primarily as a means of processing information for various business and operations activities (Malhotra, 2005). It would include reactive and corrective feedback loops of activities that incorporate IM initiatives to prevent organisational ignorance. On the other hand, the outcomes-driven path would be built in double-loop process that can enable a paradigm of KM/IM. This ensures that relevant processes and activities, as well as, related technologies are adopted and/or modified to enhance organisational learning and performance.

Execution of this research agenda combines the results of extensive literature review, acquisition of empirical data via industry survey and interviews, and the development and testing of the proposed KM/IM capability model. There are eight steps in two stages to suit the purpose of this study which would last for a period of two years based in T&T. The methods and processes of respective stages are depicted in Table 4.

At Stage 1, an extensive review of relevant literature constitutes the integral part of the study on building the conceptual foundation and understanding of key KM processes, IM attributes, performance metrics and variables. At stage 2, the study would go through the design, planning and execution of empirical data acquisition in the targeted manufacturing sectors in T&T. A breadth of views would be acquired via the conduct of surveys, case studies and interviews with industry practitioners, experts and academia. Cross-referencing of actions and feedback between individual steps would be made throughout the process. The collated results would contribute towards the development of the KM/IM capability model.
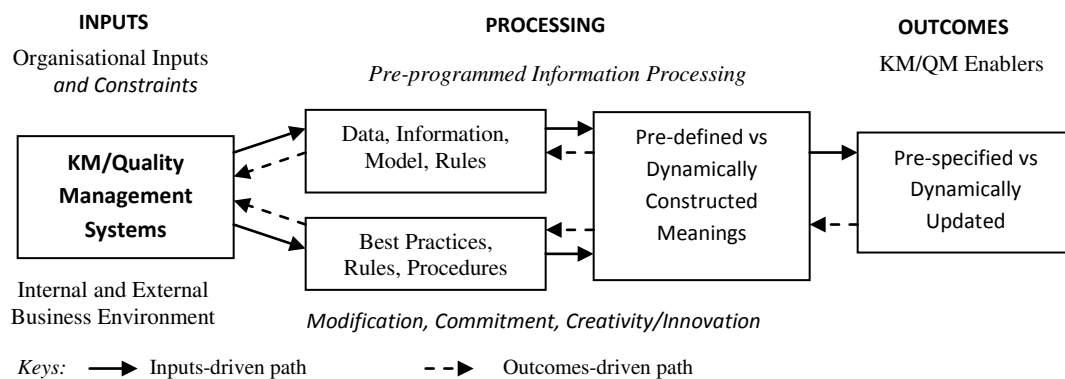

Figure 3. A proposed KM/IM capability model

Table 4. A three-stage approach of the study

	Stage I: Literature Review
1	Conduct a desk research focusing on literature published in referred journals in areas of KM and IM practices with particularly reference to those for the Caribbean region.
2	Elicit documents and materials from industries, universities, research institutes and other sources based in T&T and other nations of the Caribbean region.
	Stage II: Familiarisation and Data Acquisition
3	Investigate into the approaches of KM/IM practices, systems and performance measurements in manufacturing enterprises.
4	Identify the factors and attributes that contribute to the development of the KM/IM capability model.
5	Design study instruments for acquiring empirical data via the conduct of survey, case studies and interviews of industry practitioners, experts and academics.
	Stage III: Model Development and Testing
6	Use the literature and empirical data acquired from the first two stages to identify input, control and output elements for the KM/QM capability model.
7	Re-visit the participating organisations and interview senior management and representatives to evaluate the model and the accompanied attributes, process and guidelines of implementation.
8	Document the process and identify the specifications, changes or refinements for facilitating the adoption and implementation of the model.

The final stage is concerned with the development and testing of the model. Based on the findings from the previous two stages, the input, control and output elements would be identified and then tested. Senior management and representatives from the participating organisations would be interviewed, so as to evaluate the model and validate the use of the accompanied attributes, process and guidelines of implementation. Changes and/or refinements of the model would be made for facilitating the adoption and implementation of the model.

4. Conclusion

KM/IM capabilities are not simply designed and implemented, but they also evolve over extended periods of time. Differences emerge when examining how these capabilities link measurement to strategic and operational performance. Other differences arise when examining how each framework promotes communication about what is important (and what is not important) in the management and work practices.

It can be seen that little research stressed the integration of KM practices with and IM initiatives in organisations, although researchers are hinting that this is an area worthy of further study. A research agenda outlining purposes, hypotheses and areas for devising a KM/IM capability model with implementation guidelines, was presented. The agenda is one of the first to systematically determine the factors affecting KM/IM and measure the KM/IM capabilities in manufacturing enterprises in T&T.

Effective KM/IM requires a systematic examination of the organisation's internal factors of processes, culture and technology. Organisations should dedicate efforts to building infrastructures that enhance knowledge systems, knowledge culture, organisational memory, knowledge sharing, and knowledge benchmarking (Wong and Aspinwall, 2005). It is anticipated that this study initiative will enrich the understanding of IM and its link with KM towards OL. The identification of the attributes/parameters/determinants of KM/IM would constitute the proposed KM/IM capability model. Besides, the development of accompanied KM/IM metric and implementation guide would provide a reference base for manufacturers to foster their KM practices with IM towards OL and becoming a learning organisation with particular reference to the business operations/environment in Trinidad and Tobago.

As business and operational situations vary in organisations and industry sectors, managing the KM practices with MI will only succeed if they are implemented as a long-term organisational paradigm shift, but not a quick fix. Integrating KM practices with IM and performance improvement is a never-ending process. The development of the KM/IM capability model would be a supplement to the literature on the KM/IM studies in T&T and a wider Caribbean region.

Built upon the present Stage 1 of literature review, the next two stages would be empirical data acquisition and model development and testing. Future work would evaluate the applicability and efficacy of the model in both SMEs and larger organisations. Comparative evaluations and case studies are suggested to examine the parameters of the model and impact of its adoption in firms across different industrial sectors.

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