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Transformational Leadership and Knowledge Management: Analysing the Knowledge Management Models

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Abstract

The purpose of the present study is to investigate the mutual relationship between transformational leadership and knowledge management as well the potential effects of a transformational leader on his or her followers. In this paper, we review the role of transformational leadership in effective knowledge management and establish the emerging role of transformational leadership, as an ideal leadership style in building knowledge-based companies to achieve a higher degree of competitive advantage. The findings in this article are based upon previous empirical studies that illustrate the formulation of several propositions that contribute to the knowledge management processes. Our findings are based upon possible scenarios that impact transformational leadership and knowledge management using grounded theoretical research. Research limitations are twofold. One limitation is found in the prior literature indicating that past studies have posited that companies might lack the required capabilities or decide to decline from interacting with other companies (Caldwell & Ancona 1988), or even distrust sharing their knowledge (Kraut & Streeter 1995). And, second, our contribution to the literature lies in presenting a link between knowledge management and transformational leadership that incorporates the knowledge management processes that may impact the effectiveness of transformational leaders to enhance their capabilities to effectively play their roles within companies. In addition, managerial applications that may support knowledge management processes are proposed further research is necessary to finalise conclusions. The original value of this research provides an impetus of mutual interaction of knowledge management and transformational leadership.

Introduction

Quinn, Anderson, and Finkelstein (1998, p.182) state that the "success of a corporation lies more in its intellectual and systems capabilities than in its physical assets." Based on this argument, the resource-based approach to the firm's strategy elucidates knowledge

management as a creator of value, which primarily manifests itself in improving firms' competitiveness (Meso & Smith 2000; Von Krogh, Nonaka, & Aben 2001; Chuang 2004; Malik & Malik 2008). Knowledge management has become a buzzword in business environments, and an increasing body of the management literature. Accordingly, various models have? emerged to portray the levels and interactions of knowledge within organisations. This paper critically reviews the models associated with knowledge management, which is directed at developing a better understanding about the mutual link between knowledge management and transformational leadership.

The term "transformational leadership" used to describe an inspirational role that managers can apply to enhance the organisation's intellectual capital and ultimate performance (Dvir et al., 2002; Zhu, Chew and Spangler, 2005; Nemanich & Keller, 2007; Peterson et al., 2009; Liu & Phillips, 2011). The question arises whether the effective management of organisational knowledge itself can be a source of effectiveness for transformational leaders by empowering human resource and creating new knowledge and solutions. This basic question remained unexplored since the inception of the transformational literature to date. Based upon this gap in empirical research to date, we posit that an ineffective vision and strategic plan may expose organisations to missed opportunities in international and domestic markets. Our final assumption addressed in this paper is that the crucial role of knowledge management activities, such as coordinating and creating expert groups or steering committees to share their knowledge, may be underestimated and underutilised.

Knowledge Creation Model

Nonaka and Takeuchi (1995) propose a knowledge management model based on a basic assumption in which knowledge interacts on epistemological (i.e. individual and organisational) and ontological (i.e. tacit and explicit) dimensions. Particularly, Nonaka and Takeuchi (1995) argue that tacit and explicit interact by using four processes, including socialisation (i.e. tacit to tacit), externalisation (i.e. tacit to explicit), combination (i.e. explicit to explicit), and internalisation (i.e. explicit to tacit). Socialisation highly reflects those coaching and mentoring activities by which tacit knowledge is converted into another tacit knowledge, thereby sharing experiences gained by imitating, observing, and practicing (Nonaka and Takeuchi, 1995; Nonaka, Toyama, & Konno, 2000). Accordingly, Gharajedaghi (2006) posits that the most effective way to improve the process of socialisation is by developing workplaces which are characterised by social learning. In the externalisation process, tacit knowledge is articulated into formal language that represents official statements, and is equivalent to explicit knowledge. The third process is about promoting the existing explicit knowledge to more systematic and complex forms of explicit knowledge such as computerised databases (Nonaka and Takeuchi, 1995; Nonaka, Toyama, & Konno, 2000). Finally, explicit knowledge is internalised through "learning by doing," and actually when "experiences through socialisation, externalisation, and combination are internalised into individuals' tacit knowledge bases in the form of shared mental models or technical know-how, they become valuable assets in organisational levels" (Nonaka & Takeuchi 1995, p. 69).

Figure 1 illustrates how knowledge can be converted to create new knowledge.

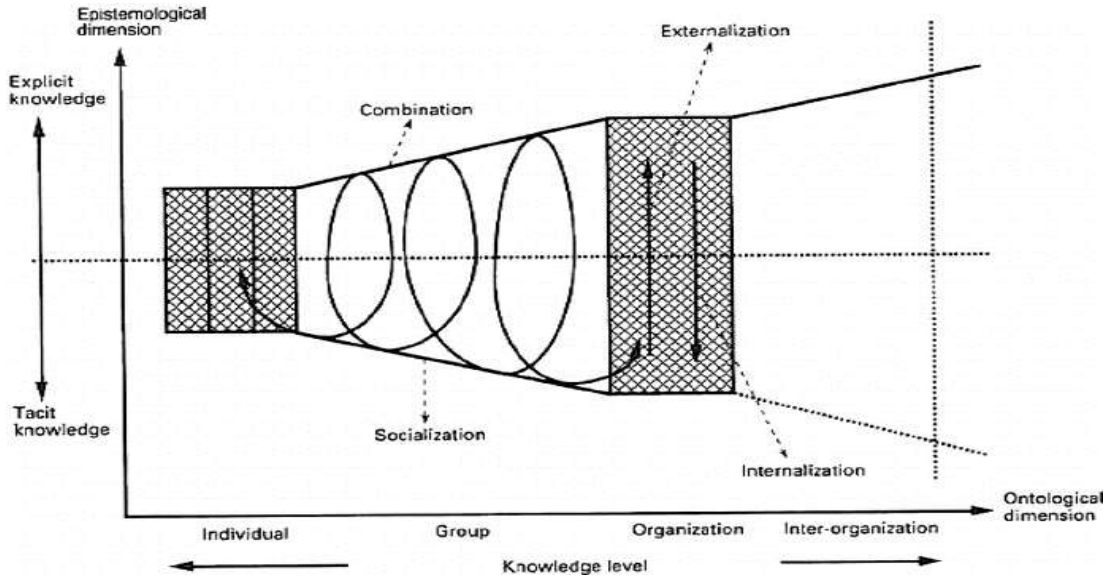

***Figure 1*: Spiral of Organisational Knowledge Creation (source: Nonaka, 1994)**

McLean (2004) challenged the applicability and verifiability of Nonaka and Takeuchi's (1995) knowledge creation model. Firstly, he argues that this model is merely based on case studies conducted by Nonaka and Takeuchi (1995) in the product development processes of Japanese profit-firms, and subsequently challenges the applicability of this model for other types of Japanese and non- Japanese organisations. In fact, McLean (2004) criticises Nonaka and Takeuchi's (1995) model, because of the failure to account for the critical role of situational variables in different organisations. Similarly, Jorna (1998) provides some criticisms about Nonaka and Takeuchi's (1995) model, because of a failure to account for the commitment of various groups to their knowledge in different types of organisations. Secondly, McLean (2004) also critiques this model for failing to provide testable hypotheses, and concludes that this model lacks "explicit, testable hypotheses that would show how the concepts relate to each other beyond these general statements" (McLean 2004, p.4). In addition, Yang, Zheng and Viere (2009) believe that there might be differences in how to manage individual knowledge from managing knowledge at the organisational level, and observe that this model has also failed to pay attention to this matter. Therefore, Nonaka and Takeuchi's (1995) model must be sufficiently tested, and, with these weaknesses, it could be established that these authors have failed to develop a model which is characterised by a high degree of applicability, verifiability, and clarity.

Learning with Knowledge Cycle Model

Unlike Nonaka and Takeuchi's (1995) model, Rowley (2001) developed a knowledge management model, which embraces implicit and explicit knowledge. Rowley's (2001) model postulates that knowledge could be illustrated in both practical (i.e. implicit) and technical (i.e. explicit) dimensions. In Yang, Zheng, and Viere's (2009) view, implicit knowledge is reflected in shared experiences and understandings, routines, insights, and social norms, which have not yet emerged in the various forms of formal language such as policies, rules and procedures. This model itself is based on studies by Demarest (1997) and Soliman and Spooner (2000). In Demarest's (1997) model, knowledge management

encompasses four principal processes, including knowledge construction, knowledge embodiment, knowledge dissemination, and knowledge use. Soliman and Spooner (2000) subsequently modified this model, and suggest five major processes for knowledge management knowledge consisting of knowledge creating, knowledge capturing, knowledge organising, knowledge accessing, and knowledge using. On the other hand, Rowley (2001) takes a more comprehensive approach, and develops a knowledge management model that includes knowledge creation and construction, knowledge articulation, knowledge repository updating, knowledge access, knowledge use, and knowledge revision. Conceptually, she highlights learning in organisations as the ultimate outcome of this cycle of knowledge by which, in the first place, implicit knowledge is created or acquired by contracting knowledge with other companies, doing market research, and converting the acquired knowledge into organisational processes and activities.

In line with this, Wenger (2010, p. 179) in his book chapter titled *Communities of Practice and Social Learning Systems: The Career of a Concept*, argues that "meaningful learning in social contexts requires both participation and reification to be in interplay," and highlights the strategic role of communities of practice in enhancing a shared understanding (i.e. implicit knowledge) among members. He sheds light on communities of practice as social containers of the competences, and defines them as "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (Wenger, 2006, p. 1). In the second step, implicit knowledge is incorporated into formal language, and subsequently becomes available to be shared within organisations. The third relates to organising explicit knowledge using databases and archives. Later on, this organised knowledge can be disseminated and searched by others. In this stage, Rowley (2001) suggests training courses as an effective way to share explicit knowledge. The fifth process is about applying knowledge aimed at providing better decisions and practices, or even creating new knowledge through innovation. Finally, the result of the previous stage (i.e. knowledge use) is measured, and accordingly the current knowledge might be supplemented or substituted.

Above, we segregate scholars from executives because scholars are more focused on theoretical framework and constructs. While we acknowledge this work and encourage more of it, we primarily focus on practical applications for executives. In light of the increased pressures of the global workplace that inspires leaders to exert effective change at the organisational level to improve profitability and revenue, the key point in the model is the knowledge use section coupled with testing and re-testing to ensure that the knowledge is actually helping the organisation grow both professionally for individuals and profitably for all stakeholders.

Figure 2 depicts this knowledge cycle based on Rowley's (2001) model.

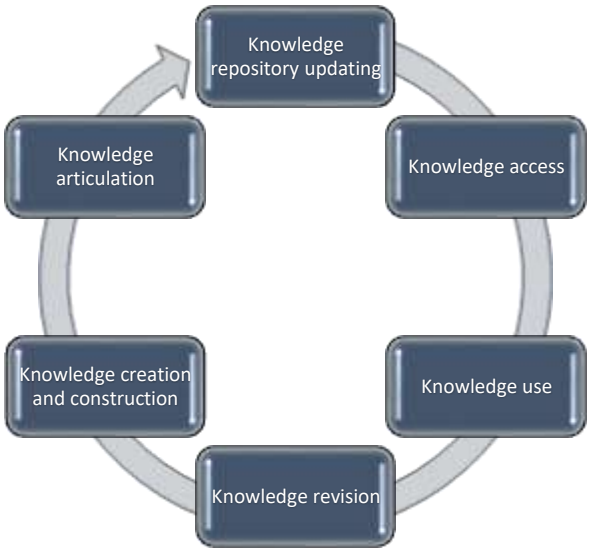

***Figure 2*: Learning with Knowledge Cycle Model (source: Rowley, 2001)**

However, there have been some discussions about the limitations of Rowley's (2001) model. Yang, Zheng, and Viere (2009) explain that this model has not portrayed how knowledge moves from one stage to another, and only described the activities related to each stage separately. Secondly, the model does not visualise the potential interactions between implicit and explicit knowledge, and additionally fails to account for the critical role of dynamic interrelationships among employees and organisational units in enhancing learning processes within organisations. Moreover, they challenge this model, and posit that the processes of use, measurement, and revision for implicit knowledge, if not impossible, are very hard. Therefore, it could be argued that although Rowley's (2001) model strongly contributes to the conceptualisation of knowledge conversion from the individual level to the organisational level, this model itself suffers from several limitations. Due to these weaknesses, Yang, Zheng, and Viere (2009) extensively reviewed the literature of knowledge management, and proposed a holistic knowledge management model.

Holistic Knowledge Management Model

To overcome these limitations, Yang, Zheng, and Viere (2009) suggest a holistic knowledge management model that incorporates three major kinds of knowledge, including perceptual (i.e. implicit), conceptual (i.e. explicit), and affectual. Affectual knowledge refers to "individuals' sentiment attached to certain objects" (Yang, Zheng, & Viere, 2009, p.275). Yang, Zheng, and Viere (2009), like Nonaka and Takeuchi (1995), believe that knowledge interacts on both epistemological and ontological dimensions. But unlike Nonaka and Takeuchi's (1995) model, these models clearly differentiate between those activities related to managing knowledge at the individual level and the practices associated with knowledge management at the organisational level. Based on this view, they argue that knowledge could be managed in the three areas of technical, practical and critical. Subsequently, these researchers describe the processes of knowledge management related to the ontological dimension as consisting of institutionalisation, indoctrination, externalisation, internalisation, inspiration, and integration. Yang, Zheng, and Viere (2009), in examining the levels of knowledge, posit that the technical level is strongly relevant to conceptual

knowledge, and manifests itself in activities related to managing formal procedures and rules whereas the practical level is associated with perceptual knowledge such as social norms and shared experiences. This level could in turn be illustrated in organisational processes and practices. The third level of knowledge is based on affectual knowledge, which is reflected in moral and ethical standards and the degree of awareness about organisational visions and missions. In Tenbrunsel et al.'s (2010) view, moral emotions in neuroscience mostly manifest themselves in a trichotomy of prediction, action and recollection, which can influence various cognitive functions such as problem solving (Pessoa, 2008).

In the same line of thought, Okon-Singer et al. (2015) argue that a high level of negative emotionality can seriously reduce people's capabilities in changing and overcoming challenging situations. To describe this trichotomy, Tenbrunsel et al. (2010, p.153) posit that "people predict that they will behave more ethically than they actually do, and when evaluating past (un)ethical behaviour, they believe they behaved more ethically than they actually did." In addition, Yang, Zheng, and Viere's (2009) model focuses on the interactions among the three facets of knowledge (i.e. implicit, explicit and affectual) in order to minimise the major limitation of Rowley's (2001) learning with knowledge cycle model that has failed to define these interactions. Accordingly, they propose nine knowledge management processes in the epistemological dimension, including socialisation (i.e. implicit to implicit), systematisation (i.e. explicit to explicit), transformation (i.e. affectual to affectual), formalisation (i.e. implicit to explicit), routinisation (i.e. explicit to implicit), evaluation (i.e. affectual to explicit), orientation (i.e. explicit to affectual), deliberation (i.e. implicit to affectual), and realisation (i.e. affectual to implicit).

Figure 3 portrays these processes within organisations:

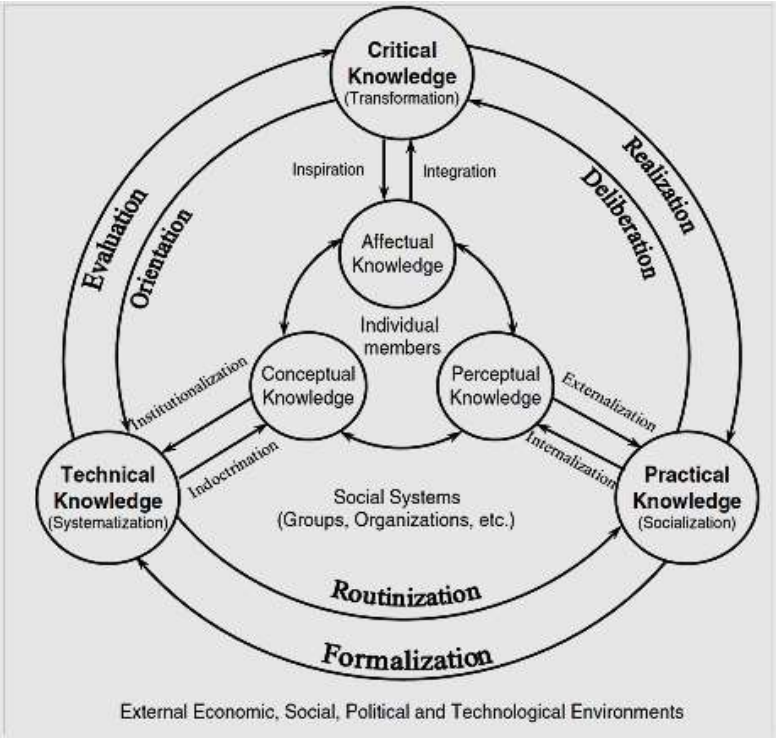

***Figure 3*: Holistic Knowledge Management Model (source: Yang, Zheng, and Viere, 2009)**

The knowledge management processes are described in *Table 1*.

Dimension	Processes	Definition
Epistemological	Socialisation	Creating new practical knowledge using actual experiences.
	Systematisation	Converting technical knowledge acquired from individuals into organisational systems and databases.
	Transformation	Leading firms' values and visions toward to a higher degree of social responsibility and productivity.
	Formalisation	Structuring practical knowledge into organisational systems.
	Routinisation	Implementing technical knowledge into practical knowledge.
	Evaluation	Determining firms' values in rules and procedures for organisational members.
	Orientation	Justifying the rules and procedures for organisational members.
	Deliberation	Collecting the shared beliefs of organisational members about the current values of the firm.
	Realisation	Putting these shared beliefs to practical knowledge.
Ontological	Institutionalisation	Converting conceptual knowledge gained from individuals into guidelines.
	Indoctrination	Transmitting formal rules and requirements to members.
	Externalisation	Articulating individuals' implicit knowledge to shared practical knowledge.
	Internalisation	Describing the current mental models for organisational members.
	Inspiration	Aligning employees through uniting aspirations and values.
	Integration	Enhancing members' aspirations and values by focusing on mutual adjustments.

Table 1: **KM Processes of Holistic Knowledge Management Model (Adapted from Yang, Zheng and Viere, 2009).**

It can be argued that Yang, Zheng, and Viere (2009) have taken a more integrative approach to portray the levels and interactions of knowledge within organisations. This model, unlike the knowledge creation model and learning with knowledge cycle model, could have successfully incorporated the critical role of these two factors (i.e. the knowledge levels and interactions) to clarify those processes by which organisational knowledge interacts in various levels. Although this model has provided a significant contribution to the understanding of knowledge interactions in various levels within organisations, the relationship between knowledge management and leadership at the organisational level is evident from Lee and Kim's (2001) model that is discussed below.

Lee and Kim's Knowledge Management Model

Lee and Kim's (2001) model for managing knowledge reflects a more strategic and practical perspective, as it is process oriented and most applicable in the context of leading organisations. In Lee and Kim's (2001) view, organisational knowledge, firstly, is

accumulated by creating new knowledge from organisational intellectual capital and acquiring knowledge from external environments. Accordingly, this process embraces acquiring and exchanging knowledge from suppliers, customers, and other business partners. It also incorporates generating knowledge form existing intellectual capital through developing organisational innovation (Zheng 2005). It seems reasonable to consider both the process of knowledge acquisition that represents external environments, and the process of knowledge creation which manifests itself in organisational intellectual capital to enable the process of knowledge accumulation in organisations. As illustrated, it can be seen that knowledge firstly emerges in a company through inspiring people to create new ideas and developing effective mechanisms to acquire knowledge from various environmental components such as suppliers, customers, business partners, and competitors. These activities need to be supported from upper levels within organisations. Specifically, executives play a strategic role in expanding the knowledge accumulation through applying incentive mechanisms to develop a more innovative climate and managing effective tools to acquire knowledge from external sources. Therefore, in the process of knowledge integration, knowledge enters organisational processes and provides valuable contributions to products and services. Executives as leaders steering the organisational strategy facilitate this process, by undertaking initiatives that improve knowledge transfer, thus enhancing the performance of employees and the implementation of effective changes to maintain the quality of products and services. The burden of success when effective implementation of knowledge integration is concerned is heavily dependent on the capabilities of the organisation's leaders.

Secondly, knowledge is integrated internally to enhance the effectiveness and efficiencies in various systems and processes, as well as to be more responsive to market changes. In this process, accumulated knowledge is synthesised to produce higher quality outcomes. In general, knowledge integration focuses on monitoring and controlling knowledge management practices, evaluating the effectiveness of current knowledge, defining and recognising core knowledge areas, coordinating experts, sharing organisational knowledge, and scanning for new knowledge to keep the quality of their productions/services improving (Day & Glazer 1994; Wiig 1995; Rulke & Galaskiewicz 2000; Lee and Kim, 2001; Cummings 2004). To promote knowledge integration, Lee and Kim (2001) propose that firms create expert groups to enhance knowledge quality and evaluate knowledge assets. Similarly, Cohen and Levinthal (1990) and Tiwana, Bharadwaj and Sambamurthy (2003) argue that members' diversity of skills and interpersonal relations based on trust and reciprocity can improve the performance of these groups. In the process of knowledge integration, knowledge enters organisational processes and provides valuable contributions to products and services. Leaders are those who facilitate this process, by undertaking initiatives that improve knowledge transfer, thus enhancing the performance of employees and the implementation of effective changes to maintain the quality of products and services. Accordingly, it is reasonable to state that the effective implementation of knowledge integration is heavily dependent on the capabilities of a company's leaders.

Thirdly, the knowledge within organisations needs to be reconfigured to meet environmental changes and new challenges. In this process, knowledge is globally shared with other organisations in the environment. Past studies show that knowledge is often difficult to share externally. These studies have observed that organisations might lack the required capabilities to interact with other organisations (Caldwell & Ancona 1988), or distrust

sharing their knowledge (Kraut & Streeter 1995). These studies indicate that expert groups may not have sufficient diversity to comprehend knowledge acquired from external sources (Cohen & Levinthal 1990). Due to these limitations, Lee and Kim (2001) posit that networking with business partners is a key activity for organisations to enhance knowledge exchange. They also highlight that a critical concern for managers in this process is developing alliances with partners in external environments. In the same line of thought, Grant and Baden-Fuller (2004) argue that firms create alliances to improve knowledge exchange, and Jiang et al. (2013, p.983) state that "alliances offer opportunities for knowledge sharing and leveraging." The development of alliances should also be supported by top management executives. Top managers are clearly the ones who can make final decisions about developing alliances with a business partner. *Figure 4* depicts this model of knowledge management.

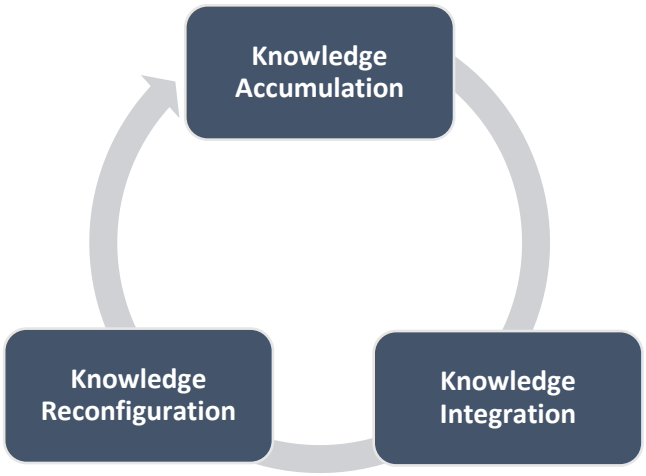

***Figure 4*: Lee and Kim's Knowledge Management Model**

The Mutual Link between Transformational Leadership and Lee and Kim's Knowledge Management Model

Transformational leaders play four critical roles namely: idealised influence, inspirational motivation, intellectual stimulation, and individualised consideration (Bass & Avolio, 1997; Canty, 2005). Idealised influence is about generating a shared vision and developing relationships with subordinates, while inspirational motivation is based on inspiring followers and setting highly desired expectations. Intellectual stimulation on the other hand, facilitates knowledge sharing and generates more innovative solutions. Finally, individualised consideration focuses on empowering employees and identifying their individual needs, which is directed at stimulating a learning workplace (Lowe, Kroeck, & Sivasubramaniam, 1996) and mobilizing employees' support toward organisational goals. Evidently, these roles stressing a more knowledge-oriented company highly recommend transformational leaders for the knowledge economy largely based on managing companies' knowledge assets.

In Lee and Kim's (2001) view, knowledge exchange with external business partners develops innovative environments (Wang & Wang, 2012) that enable the aspect of intellectual stimulation aimed at creating a more innovative climate in companies (Canty,

2005). In addition, this process enhances the capabilities of transformational leaders to play the role of inspirational motivators, by setting highly desired expectation to recognise possible opportunities in the business environments. The knowledge exchange also positively contributes to transformational leaders' ability to facilitate idealised influence developing a more effective vision, includes more comprehensive information and insights about external environments. A climate inspiring knowledge creation itself can also positively impact on the empowerment of employees (Badah, 2012) that develops the capabilities of transformational leaders in the aspect of individualised consideration empowering human assets (Canty, 2005). Hence, the synthesis of existing literature has provided fascinating evidence regarding the vital importance of knowledge accumulation in the effectiveness of transformational leadership.

Follower's diversity of skills and interpersonal relations that is based on trust and reciprocity can improve the performance of group cohesiveness (Cohen and Levinthal, 1990; Tiwana, Bharadwaj, and Sambamurthy, 2003). In addition, it is apparent that both major activities of knowledge integration processes, including the evaluation of organisational knowledge and assessment of required changes can positively impact on the effectiveness of individualised consideration aspect through identifying employees' learning needs. Further, a systematic process of coordinating company-wide experts enables transformational leadership by propelling the role of intellectual stimulation, which creates a more innovative environment. In addition, an apparent argument is that those qualities indicating a high-performing expert group, as Tiwana, Bharadwaj, and Sambamurthy (2003) argue, are considerably overlapped with Webb's (2007, p. 54) scales about an effective transformational leader that examine the capabilities of these leaders in creating trust within companies. Logically, this practice itself develops a climate that transformational leaders target.

Thirdly, Lee and Kim (2001) posit that networking with business partners is a key activity for companies to enhance knowledge exchange. Networking can also positively contribute to transformational leadership to effectively incorporate various concerns and values of external business partners. Additionally, the knowledge transference among companies itself improves the effectiveness of learning (Purvis, Sambamurthy, & Zmud 2000), which in turn enables both transformational leadership roles of idealised consideration by empowering human resource and intellectual stimulation through creating new knowledge and solutions. Taken together, this review illustrates that networking among companies in a domestic and international market leads to enhanced effectiveness of transformational leadership within companies. Through articulating the mutual relationship between knowledge management process and transformational leadership aspects, we add to the current and extant literature. Insufficient consideration of the mutual relationship between knowledge management processes and transformational leadership has been exposed and we attempt to address this concern for the first time. For example, no published papers have explored how transformational leadership and knowledge management empowers each other. Thus, for scholars, this paper can provide evidence regarding a mutual relationship between knowledge management and transformational leadership that have been mentioned but not placed in a model in the past. Furthermore, we suggest that scholars take our ideas and continue to conduct research using executives as the focal point so that academic scholarship can meet the needs of managerial implications at the higher echelons of organisations worldwide.

Conclusion

There are some executives that like to look at academic journals but unfortunately the crossover literature has not reached them enough. However, we attempt to blend scholarly concepts with real world application. For the scholar's corner, we place a great deal of emphasis on the literature on transformational leadership and knowledge management. Thus, this paper adds to a relatively small body of literature but pays homage to the scholarly contributions. We highlight the mutual relationship between knowledge management and transformational leadership, and also simultaneously portray the contribution of transformational leadership in facilitating knowledge management processes. This is the first paper that actually investigates the crossover potential of scholarly research and how it can be applied in the organisational boardroom.

This paper introduces a new and dynamic perspective of transformational leadership within organisations. It advances the current literature on transformational leadership by offering novel insights into how executives affect an organisational knowledge. Particularly, we feel that executives enable knowledge management processes. Without a grasp on these two tenets executives are bound to fail.

For the scholar's corner, we draw upon the current organisational theories (i.e. knowledge-based view). Thus, we suggest new insights to identify transformational leadership as a primary driver, which influences organisational knowledge that matter to executives that care.

We present executives with a new idea in that when change becomes increasingly valuable, transformational leadership manifests as a catalyst to implement effective changes in organisations. Transformational leaders leverage positive effects on organisational capabilities. Thus, we provide evidence that transformational leadership is used in corporate infrastructure for strategic decision-making.

Scholars open an avenue of inquiry that suggests further investigation to identify drivers of organisational change. This research points to the need to incorporate transformational leadership into the organisational change literature. A suggestion is to use the pivotal conceptual change along with inculcated change efforts and formulate that using the transformational leadership style.

Beyond illustrating that transformational leaders manifest themselves as change agents within organisations, the nature of the interactions between transformational leadership and knowledge management can also suggest several complementary insights for the existing literature. However, the focus of this paper is based upon the critical role of transformational leadership which allows a rich basis to understanding the mechanisms by which knowledge management and operations risk is influenced. Scholars repeatedly uncovered transformational leadership's direct impacts on knowledge management. This paper articulates a different approach. We simply extended the academic literature by showing how transformational leadership and knowledge management can also empower each other.

Furthermore, we suggest that scholars take our ideas and continue to conduct research using executives as the focal point so that academic scholarship can meet the needs of managerial implications at the higher echelons of organisations worldwide. The results open up an avenue of inquiry that suggests further investigations to identify drivers of

transformational leadership effectiveness. The review of existing literature also reveals that there is a lack of empirical support to measure how the dimensions of transformational leadership, including idealised influence, inspirational motivation, intellectual stimulation, and individualised consideration, are facilitated by the scales associated with effective knowledge management. This review illustrates that the significance of networking in supporting the scales related to effective transformational leadership, which have also been left out of the existing literature.

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