Consolidating the strategic alignment model in knowledge management

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Abstract: Recently, the importance of Information Technology (IT) for effective Knowledge Management (KM) activities has been stated. Effective KM projects alone cannot lead to success without the support of IT, and vice versa. Thus aligning proper IT and KM strategies to fit the business strategy is the key to reducing costs, which in turn leads to higher performance. Drawing on the concept of strategic alignment, we proposed a KM Strategic Alignment Model (KMSAM) wherein business strategy, KM strategy and IT strategy coexist. Furthermore, we contend that this strategic alignment may contribute to KM performance as well as business performance.

Keywords: strategic alignment; business strategy; Knowledge Management; KM; strategy; Information Technology; IT; strategy; KM performance.


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1 Introduction

In the dynamic business environment, it is critical for businesses to discern what skills or capabilities they own and, further, how to create valuable, rare and difficult-to-imitate or difficult-to-substitute resources (Barney, 1986; 1991). In this context, integrating firms’ various kinds of advantage-giving weapons that are costly to copy into one whole is seen as the fundamental driver of performance (Barney, 1991; Conner, 1991; Schulze, 1992).

Drucker (1993) argues that knowledge is a significant resource, more important than other assets (e.g., land, capital and labour) in the post-capitalist society. He also indicates that with the growth of knowledge work in the developed economies, the proportion of knowledge workers in the workforce is increasing, thus making the productivity of knowledge workers one basis for economic growth. In the new era of the complicated and rapidly changing business environment, Knowledge Management (KM) is one of the growing issues in contemporary business, as it has been found that knowledge is the organisation’s critical asset and potential strategic resource that gives a basis for competitive advantage (Alavi and Leidner, 1999; Davenport and Prusak, 1998; Grant, 1996; Hung et al., 2005; Johanssonen and Olsen, 2003; Lubitz and Wickramasinghe, 2006; Teece, 1998; Zack, 1999a). More specifically, the implementation of KM projects compliant with various KM strategies would provide organisations with the capabilities to improve knowledge quality and quantity, as well as consolidating the value and practicability of knowledge (Bose, 2004; Hansen et al., 1999; Hoffman et al., 2005; Keskin, 2005; Kogut and Zander, 1992; Melton et al., 2006; Spender and Grant, 1996; Yu et al., 2004).

Recently, both researchers and practitioners have started to realise the importance of Information Technology (IT) for effective KM activities (Alavi and Leidner, 2001; Kankanhalili et al., 2003; Nonaka and Konno, 1998; Zack, 1999b) or facilitating interorganisational learning (Scott, 2000). It is found that an organisation which has a high quality of both KM and IT (a high-high fit) achieves high KM performance and satisfaction more frequently than those whose quality fit is low in either dimension or in both (Khalifa et al., 2001; Sher and Lee, 2004). Effective KM projects alone cannot lead to success without the support of IT (Kim, 2001; Sabherwal and Sabherwal, 2005; Truch and Bridger, 2002). Similarly, IT alone can do nothing for KM (Kim, 2001) or organisational performance (Bhatt and Grover, 2005; Carr, 2003; Devaraj and Kohli, 2003; Khalifa and Liu, 2003; Tippins and Sohi, 2003). Accordingly, their co-alignment with other resources or strategies used in managing business activities must be considered for business performance (Asoh, 2004; Zack, 2002). In other words, it is critical and necessary that one choose the right IT for different KM strategies (Kim, 2001), but their high-high fit does not always yield positive results. Since enough exceptions have been found to indicate that business strategy and knowledge strategy are interdependent (Asoh, 2004), a linking of effective IT strategy and KM strategy that are consistent with business strategy is the key to reducing costs, which in turn leads to higher performance.

The importance of the strategic alignment of IT/IS (Information System) is currently being acknowledged (Henderson and Venkatraman, 1993; Reich and Benbasat, 2000). A recent research proposed by Lee et al. (2004) states that contingency and fit (alignment) theory is among the top five frequently used topics out of the 31 theoretical framework categories of all the 993 papers in Management Information System (MIS) fields. It has been realised by researchers that an absence of strategic alignment can probably cause
organisations’ inability to realise sufficient value from IT investments (Henderson and Venkatraman, 1993; Woolfe, 1993). Alignment has been found not only to contribute greatly to the potential capabilities of an organisational IT infrastructure, but also to have a significant positive direct effect on overall organisational performance (Azab, 2005; Xia and King, 2002). Conversely, misalignment in organisations results in the redundancy and inefficiency of IT functions and in an increase in costs and delays. More seriously, it can be one of the critical reasons behind the lowering of organisational performance (Chan et al., 1997; Luftman and Brier, 1999).

Over the last couple of decades many researchers, consultants and practitioners have developed frameworks that attempted to find intercorrelations between IT/IS and business strategy (Marchand et al., 2001). However, there exist some issues that need to be further addressed and discussed. For example, how do organisations really deploy their IT strategy in conjunction with the KM strategy belonging to a specific business strategy? What are the relationships between business strategy, KM strategy and IT strategy? None of the studies use a holistic approach that considers all the capabilities organisations possess for completing the puzzle. Take Asoh’s (2004) research for an example; he proposes a model containing four broad dimensions for interpreting business-, KM-, HRM-, and information-related reference literature. There are numerous studies that have been conducted on the context of the alignment between business-related strategies and information-related strategies, followed by the alignment between business-related strategies and knowledge-related strategies. Little attention has been devoted to examining the context of strategic alignment between knowledge-related strategies and information-related strategies, as well as all of the three dimensions. Therefore, this is the motivation for this present research.

Consequently, this paper seeks to contribute to strategic KM by pursuing three specific goals. First, it seeks to provide further insight into the performance implications of the alignment among business strategy, KM strategy and IT strategy. It aims to do so in light of a prior contingency theory on these three types of strategies. Second, it examines separately the performance implications of alignment for KM strategy and IT strategy to describe how this type of alignment affects KM performance, thus leading to business performance. Finally, an integrative KM Strategic Alignment Model (KMSAM) will be proposed, providing corporations with a helpful direction for KM practices in consideration of the ideal pattern for these three coherent business strategies.

The paper is organised as follows. First, the concept of alignment (or fit) is discussed. Next, the conceptual model and propositions are proposed. Finally, the key contributions and future directions are summarised.

2 Theoretical background
2.1 Alternative perspectives of alignment (or fit)

The concept of alignment (or fit) is a key notion in structural contingency theory (Drazin and Van de Ven, 1985) and is well known and discussed in managerial behaviour and organisational analysis (Miles and Snow, 1984). Numerous synonyms have been used for alignment, such as strategic alignment (Broadbent and Weill, 1993; Chan et al., 1997; Henderson and Venkatraman, 1993; Luftman et al., 1993), fit (Porter, 1996), integration (Weill and Broadbent, 1998), bridge (Ciborra, 1997), harmony (Luftman
et al., 1996; Luftman, 1997), fusion (Smaczny, 2001) and linkage (Reich and Benbasat, 1996). However, no matter what word or phrase is used, it concerns the integration of strategies relating to the business and its related contingency variables. Its commonly basic proposition is that “organizational performance is a consequence of fit between two or more factors; such as, the fit between organization environment, strategy, structure, system, style, and culture” (Van de Ven and Drazin, 1985).

Van de Ven and Drazin’s (1985) and Venkatraman’s (1989) studies on the fit concept render a solid theoretical foundation and analytical methods in practice. Van de Ven and Drazin (1985) define fit as having three approaches: selection, interaction and systems approaches; whereas Venkatraman (1989) uses six different perspectives from which fit can be defined and explained. These are fit as matching, moderation, mediation, gestalts, covariation and profile deviation. The framework that Venkatraman proposed classifies each perspective along three dimensions: the criterion-specific or criterion-free (the presence or absence of a criterion variable; few to high), the degree of specificity of the functional form of the fit-based relationship (low to high) and the number of variables in the fit equation (few to many). He also describes each perspective of fit according to these three dimensions, along with its underlying conceptualisation, the verbalisation of a strategy proposition, and the appropriate analytical schemes for testing the relationships.

2.2 Research and models on strategic alignment in the MIS field

Several excellent frameworks or models of strategic alignment have been proposed by MIS researchers (e.g., Johnston and Yetton, 1996; Scott Morton, 1991). One effort in this field is Henderson and Venkatraman’s (1993; 1999) IT Strategic Alignment Model (ITSAM). The objective of this model is to provide a way to align IT with business objectives in order to realise value from IT investments. It depicts IS alignment as the strategic fit (interrelationships between strategy and infrastructure) and functional integration (integration between business and IT, in the strategic and infrastructure aspects) between business strategy and IS/IT strategy, and business success is viewed as the result of the synergy between four coalescent domains: business strategy, business infrastructure, IT strategy and IT infrastructure. Business strategy and IT strategy are classified under the external domain, described in terms of (business/technology) scope, (distinctive business/IT systemic) competencies, and (business/IT) governance. Organisational infrastructure and process and IT infrastructure and processes, which are classified under the internal domain, described in terms of (administrative/IT) infrastructure, (business/IT) processes and (business/IT) skills.

The strategic model proposed by Henderson and Venkatraman (1993; 1999) is widely used by many researchers and organisations to assess the level of alignment in a firm. For example, drawing on Henderson and Venkatraman’s ITSAM model, a post-merger IT integration alignment model was developed by Wijnhoven et al. (2006). They regard post-merger IT integration as an example of a technology leverage process that needs a unidirectional relation between business goals and IT strategy. As a result, IT strategy is split up into IT integration objectives and the IT integration method of realising the intentions of a business merger strategy. They also point out that the infrastructure and processes of an organisation and IT are given conditions as well as opportunities or priorities for the IT integration (objectives and methods) strategies. After three hospital cases were probed, a refined causal model has been proposed to which several new
variables and relations were added in comparison with Henderson and Venkatraman’s ITSAM model. Luftman et al. (1999) define and review the original model in a more practical way to determine the enablers and inhibitors to aligning business and IT strategies within organisations. Their research points out that the major enabler to alignment is senior executive support for IT, whereas the lack of a close working relationship is ranked as the number one inhibitor to alignment. Furthermore, Maes et al. (2000) enhance the ITSAM by proposing a unified framework that incorporates additional functional and strategic layers into the baseline model to reflect the current need for information and communication. This unified framework is the first attempt to refine ITSAM to uncover the fact that IT and business strategies are moving closer together as technology evolves and becomes more integrated (Avison et al., 2004).

The ITSAM has been the basis for much of the strategic IT research studying business-IT alignment and empirically linking it to business performance (Chan et al., 1997; Croteau and Raymond, 2004; Papp, 1999; Sabherwal and Chan, 2001). Following the refined arguments of the fit concept with statistical testing methods and several empirical studies performed by Venkatraman (e.g., Venkatraman, 1990; Venkatraman and Prescott, 1990) and Van de Ven and Drazin (e.g., Drazin and Van de Ven, 1985), more recently, a few empirical studies examining business-related and/or IT-related alignment model have been prompted in the MIS field.

While the contingency perspective is widely adopted to describe and understand the interrelationships within and among organisational subsystems as well as between the organisational system as an entity and its environments (Kast and Rosenzweig, 1973), only a small number of research have empirically examined the impact of fit between/among various patterns of domains on business performance (Bergeron et al., 2004). Based on a careful review of the literature, IS researchers have identified numerous types of strategic alignment relationships. Among the alignment studies are the fit between business strategy and IT/IS strategy, organisational infrastructure and technology infrastructure, IP requirements and IP capacity configuration, business strategic competencies and IT competencies, IT infrastructure and EC capability, etc.

2.3 Research and models on strategic alignment in the KM field

According to the foregoing discussion, strategic alignment between business strategy and IT strategy is a critical issue within organisations that has been stated frequently (Earl, 1996; Luftman et al., 1999; Papp, 1998). However, there are few studies that empirically address the issue of strategic alignment in the KM field. This is what Asoh et al. (2003) called “the missing link in knowledge management research” (p.39). This is probably because the contingency researchers were discovering, in the context of strategic alignment, that predicting KM or business performance involved something more complex than isolating specific strategy factors; a more ‘holistic’ configuration perspective is needed.

Despite the limitation of research regarding the strategy-related alignment of KM, some research began looking at the impact of situational influences or contextual factors on organisations. For example, Choi and Lee (2003) categorise various KM styles into dynamic, system oriented, human oriented and passive. They verify empirically how these different scenarios improve business performance and, finally, find that a dynamic style integrating explicit-oriented with tacit-oriented methods results in better
corporate performance. Becerra-Fernandez and Sabherwal (2001) take a contingency theoretical view, which considers that the impact of the KM process on KM satisfaction is moderated by the nature of the subunit tasks being performed. Their findings from conducting several interviews and collecting survey data from 159 individuals across eight subunits support the contingency framework. Ju et al. (2006) indicate that the interaction effects of human-oriented KM strategy and organisational learning, and system-oriented KM strategy and knowledge integration, are found to significantly impact KM capability.

These studies find that better performance outcomes occurred when components were congruent with each contingency factor. More research is needed on the mechanism through which strategy-related alignment affects learning and KM outcomes as well as organisational performance. That is, a significant link to performance requires a holistic approach that considers KM (Asoh et al., 2003; Asoh, 2004) as well as all the factors of IT/IS/IM (Information Management) practices and information behaviour and values (Marchand et al., 2001).

Based on a knowledge-based view of organisations, Bierly and Daly (2002) assume that for each type of knowledge strategy there should be internal consistency between strategic actions and other organisational practices and systems. They made a theoretical framework to show that a firm can enhance its knowledge base, and thereby positively affect organisational performance, through a congruency with HRM practices and knowledge strategy. Drawing on information-processing theory, organisational learning theory, the knowledge-based theory of the firm, and the theory of knowledge creation, Sabherwal and Sabherwal (2005) utilise secondary data on 89 KM announcements from 1995 to 2002 to validate the hypotheses they proposed; these hypotheses are the link Cumulative Abnormal Return (CAR) to alignment between industry innovativeness and KM process, alignment between firm efficiency and the KM process, firm-specific instability and firm diversification. The results support the theory-based arguments, and contribute to developing a contingency framework on the effectiveness of KM efforts. Additionally, research conducted by Truch and Bridger (2002) took knowledge orientation and strategic orientation – both of which are influenced by business environment – and the alignment between them as an antecedent to predict organisational performance (as Figure 1 depicts). Results of the analysis of surveys collected from over 150 organisations show that knowledge orientation varies significantly across organisations of different strategic orientation. That is, the strategic alignment between knowledge orientation and strategic orientation has a significant, direct effect on organisational performance.

Furthermore, Wang and Belardo (2005) propose a knowledge-based crisis management framework to demonstrate the alignment of knowledge-based strategies with crisis management strategies in crisis management performance. By conducting case analysis, they point out that proper alignment of knowledge-based strategies with crisis management can help organisations identify tasks to perform and the knowledge they need. Shih and Chiang (2005) make an empirical study to speculate whether the relationships between corporate strategy, human resource management strategy and KM strategy exist or not. Based on a survey conducted with 147 Taiwanese large companies as samples, they posit that better KM effectiveness, which is measured by process outcome, learning capability and organisational outcomes, is determined by the alignment between KM strategy and both corporate and HRM strategy.
Finally, an important article that makes an important contribution to the concept of strategic alignment in the KM field is Abou-Zeid’s (2003) study. According to the premise of the original ITSAM, “the effective and efficient utilization of IT requires the alignment of IT with business strategies” (Henderson and Venkatraman, 1999, p.473). Abou-Zeid (2003) proposed the KMSAM, in which IT strategy is replaced by knowledge strategy, and made the underlying argument: the effective and efficient use of organisational knowledge requires the alignment of knowledge strategies with business strategies (Abou-Zeid, 2003, pp.158–159). It was Abou-Zeid’s (2003) idea that business strategy or knowledge strategy can be seen as a balancing act between
the external domain and internal domain, which contain opportunities/threats and capabilities/arrangements, respectively. A second important research in the KMSAM field is a doctoral dissertation performed by Asoh (2004). Drawing on Abou-Zeid’s (2003) study of KMSAM, he proposed a model (see Figure 2) wherein business strategy and knowledge strategy are co-aligned. The results of this empirical study indicate that business strategy and knowledge strategy and their alignment indeed play key roles in the creation of organisational performance.

3 Research propositions and KMSAM

The main purpose of this present research is to develop a KMSAM in the strategy-related MIS area. Consistent with the aforementioned perspectives, the emerging body of literature on KM shows that good fit or congruence between properties of KM, units, relationships and the environment leads to better organisational performance as well as KM outcomes (Argote et al., 2003) than does mis-fit, and the relative effectiveness of each type varies with context. Previous studies have concluded this from several pieces of evidence. In this vein, this section describes the high-level model briefly in order to provide a rationale for the more detailed discussion about the underlying meanings of KM strategic alignment that follows.

3.1 Strategic alignment between KM strategy and IT strategy

In Henderson and Venkatraman’s (1993; 1999) strategic alignment model, IT strategy involves three components that should be articulated in terms of internal and external domains: information technology scope, systemic competencies and IT governance. From the perspective of information-processing requirements, IT strategy has been conceptualised as a four-dimensional construct, with the dimensions competencies, role of IT, systems design and development, and infrastructures (Das et al., 1991). In Bergeron et al.’s (2004) research, two dimensions are identified as IT strategy constructs: the first one is IT environment scanning, representing the capability of a firm to detect and react to external changes in technology; the second one is strategic use of IT, representing to what extent a firm uses IT to increase product quality and performance.

In previous studies, KM strategy is classified by the nature of knowledge itself, e.g., explicit or tacit (Shih and Chiang, 2005; Polanyi, 1997). Explicit knowledge refers to the transfer of information in a systematised manner whilst tacit knowledge refers to the transfer of information through social networks. These two concepts are similar to that of Hansen et al.’s (1999) classification of KM strategy into ‘codification strategy’ and ‘personalisation strategy’, respectively. While the codification strategy is to store knowledge in a computerised database that can be easily retrieved by anyone in the organisation, the personalisation strategy suggests that knowledge is shared mainly through extensive person-to-person interaction to obtain implicit knowledge.

Although the contribution of successful KM projects to overall organisational performance is widely acknowledged (Davenport and Prusak, 1998; Argote and Ingram, 2000), how to attain KM performance remains an unsolved question. Fortunately, the rapid progress of IT provides a good solution to uncovering the predicament. That is, firms’ excellent IT capabilities enable them to cope well with the present competitive and dynamic environment (Bhatt and Grover, 2005). Accordingly, strategic IT
management has been regarded as an enabler in KM performance when fitting with certain aspects of the KM context in order to survive in the highly competitive business environment (Alavi and Leidner, 2001; Yeh et al., 2006).

Choosing the right IT for different KM strategies is critical for organisations (Gottschalk, 2006; Kim, 2001). Effective KM requires employing appropriate KM strategies as well as IT (Mahapatra and Sarkar, 2000). Using IT with various KM strategies will contribute to the creation of corporate knowledge directories through knowledge mapping or the building of knowledge networks (Wakefield, 2005). Therefore, the relationship between KM and IT strategy is highly important (Fehér, 2002). Meanwhile, according to the arguments presented by Asoh (2004), as an enabler for KM and IM/IS, IT strategy serves as the delivery-oriented component (Earl, 1989) that needs to be aligned with KM strategy for improving KM performance and organisational performance. Consequently, the following propositions are proposed:

**P1** KM performance has a significant positive direct effect on organisational performance.

**P2** The alignment between KM strategy and IT strategy has a significant positive direct effect on organisational performance.

**P3** The strategic alignment between KM strategy and IT strategy has a significant positive direct effect on KM performance.

### 3.2 Strategic alignment among business strategy, KM strategy and IT strategy

Business strategy is “the outcome of decisions made to guide an organization with respect to the environment, structure and processes that influence its organizational performance.” (Croteau and Bergeron, 2001, p.78). It is defined as the “competitive tools used to give an organization its ‘distinctive competence’ which depends on task environment characteristics” (Segev, 1987, p.565), or “…the general pattern of various means employed to achieve the business goals, with a particular emphasis on the business-unit level of the organizational hierarchy” (Venkatraman, 1985, p.25).

Based on aforementioned research, researchers agree that KM- or IT-related variables alone are not sufficient for explaining organisational performance, since explanations based solely on KM or IT ignore the interactions of contingency variables as well as the synergy they produce. As Fehér (2002) indicated:

> “on the strength of using knowledge management practices in organization, the integration of technologies, techniques and theories of knowledge management, as well as internal environment, and organizational and IT strategy is definitely necessary.” (p.944)

KM strategy is the right tool to determine how to employ these various resources in KM initiatives; thus, KM strategy is regarded as the facilitator for KM outcomes when using a suitable IT solution (Beckman, 1999; Hansen et al., 1999, Zack, 1999a) and should comply with business strategy (Shih and Chiang, 2005; Nahapiet and Goshal, 1998; Nonaka and Takeuchi, 1995). Furthermore, Khalifa et al. (2001) indicate that KM effectiveness will be achieved on condition of the adequacy of the KM structure, which is
affected by KM strategy, technology fit, organisational culture and leadership. Therefore, this present research assumes that something unique in effective organisations had been created; in other words, in a certain business strategy (e.g., prospector, defender, analyser) various patterns of KM strategy and IT strategy must be aligned for achieving organisational outcome. As a result, the following propositions are proposed:

**P4** The strategic alignment among business strategy, KM strategy and IT strategy has a significant positive direct effect on organisational performance.

**P5** The strategic alignment among business strategy, KM strategy and IT strategy has a significant positive direct effect on KM performance.

Consequently, the alignment model for business strategy, KM strategy and IT strategy is proposed in our study because of their reinforcement of each other as the basis for business performance. The conceptual model underlying the present research is illustrated in Figure 3. In the conceptual model, the strategic alignment among business strategy, KM strategy and IT strategy is hypothesised to affect KM performance and organisational performance. Furthermore, the second strategic alignment pattern with congruence between the KM strategy and IT strategy is also supposed to directly impact business performance or indirectly impact it through KM performance. We hope that the strategic alignment concept approach would provide more definitive answers about the nature of KM strategic alignment with a holistic perspective than did previous research, and also provide a guide to management practice in this important area.

![Conceptual model](image.png)

**Figure 3** Conceptual model

### 4 Conclusion

The field of KM is still in its infancy and a strategic alignment approach to the research dominates. Progress in the field has been hampered by the adoption of a narrow perspective on specific aspects of KM. This has resulted in highly ambiguous results, and an inability to generalise in academic research and practical operation. Based on
the premise that the business value from KM and IT investments requires strategic alignment among business strategy, KM strategy and IT strategy, and the ‘systems’ approaches are superior to ‘bivariate’ approaches in strategic alignment model construction (Chan et al., 1997), we developed a holistic KM strategy model (KMSAM) for analysing and assessing alternative strategic patterns with regard to KM performance and organisational performance.

The extension of this work would move in two directions. First, this model needs to be verified with empirical data in order to assess it. Second, conducting alternative perspectives of fit with statistical testing methods to verify what kinds of alignment have a more significant effect on performance should be done. Since alternative alignments have their own underlying arguments and meanings, it would be beneficial for KM practice to make this kind of comparison.

References


