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Alignment between Business and Knowledge Management Strategies: The Key to a Sustainable Competitive Advantage

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ABSTRACT

In the era of knowledge economy, the necessity of recognizing knowledge as a key and intangible asset makes the effective management of knowledge a priority. Business strategy is the most important context for guiding effective knowledge management. And, knowledge management (KM) is also a dimension of business competitive strategy. Based on Miles and Snow’s (1978) business strategy typology, as well as KM strategy types proposed by Hansen, Nohria and Tierney (1999), this study examines the impact of alignment on perceived sustainable competitive advantage between business strategy and KM strategy. The results indicate that the alignment of business strategy and KM strategy helps to promote a sustainable competitive advantage. But for different business strategy, alignment seems to influence competitive advantage only in Analyzers. The research findings confirm the importance of the alignment between business strategy and KM strategy. Implications for future research and practice are discussed.

Keywords  
Business strategy, knowledge management strategy, sustainable competitive advantage, alignment  

1. INTRODUCTION

Knowledge can create business value and sustain a competitive advantage (Tiwana, 2002). The emergence of global competition and the rapid changes in our technological and business environment leads the economy in a knowledge-based direction (Drucker, 1993; Nonaka, 1994; Nonaka and Takeuchi, 1995). Many companies are coming to regard knowledge as their most valuable and strategic resource, and the achievement of a sustained competitive advantage depends on company’s capability to develop and deploy its knowledge-based resources (Perez and Pablos, 2003).

Knowledge management (KM) has been an important issue over the past decade. Earl (2001) argued that KM not only must be enabled by IT, but also requires complementary investments of a behavioral or organizational nature (Earl, 2001). Many organizations start a series of KM projects. But, the primary focus of these KM initiatives has been on developing new IT applications to support the digital capture, storage, retrieval and distribution of explicit knowledge (Davenport and Prusak, 1998; Davenport, Jarvenpaa and Beers, 1996; Zack, 1999). Zack (1999) indicated that these knowledge initiatives are process-oriented and don’t address what knowledge needs to be exploited or created. Consequently, organizations only tend to share what they know not to understand what they need to share. Tiwana (2002, p.90) also stated that “technology still falls short of magic”.

Davenport, Long and Beer (1998) found that the success of KM projects requires both technological and organizational infrastructures. Aligning and integrating technical and organizational initiatives can provide a comprehensive infrastructure to support KM processes. Zack (1999) argued while the appropriate infrastructure can enhance an organization’s ability to create and exploit knowledge, it does not guarantee that the organization is making the best resources investment or managing the right knowledge in the right way.
For that reason, it is an important issue—how should an organization determine which efforts are appropriate, or which knowledge should be managed and developed? Zack (1999) found that the most important context for guiding KM is a business strategy. The proper business strategy should direct what and how information and knowledge is to be used, and knowledge could make new strategies and new ways of competing possible (Snyman and Kruger, 2004). Besides, according to King, Marks and McCoy (2002), one of the most important issues in KM is “how to use knowledge management to provide a strategic advantage,” that is to say, “KM should definitely be part of the strategic vision, planning, and plans in order to be used to the best advantage. It shouldn’t just be tossed in as an afterthought.” The alignment between business and KM strategies has been widely discussed recently; there have been a number of attempts to argue that it will provide a long-lasting competitive advantage (Earl, 2001; Maier and Remus, 2002; Snyman and Kruger, 2004; Tiwana, 2002; Zack, 1999).

While often talked about, the alignment between KM and business strategy has been widely ignored in practice and in research. Many surveys have highlighted a company’s CIO concerns with information system (IS) strategic alignment (e.g. Branchecau, Janz, and Wetherbe, 1996; Niederman, Branchecau and Wetherbe, 1991). Researchers in the IS area have replied by investigating the necessity and benefits of aligning IS with business strategy (Camillus and Lederer, 1985; Chan, Huff, Copeland and Barclay, 1997; King and Teo, 1997; Sabherwal and Chan, 2001; Weill and Broadbent, 1998). However, empirical research on the implications of the alignment of business and KM strategies has been rare.

This study aims to fill the gaps in this area. Based on the prior business and KM strategy theories “Defenders, Analyzers, and Prospectors” business strategy typology of Miles and Snow (1978), as well as the codification and personalization KM strategies proposed by Hansen et al. (1999), this study tries to provide further insights into implications of the alignment between business strategies and KM strategies on the perceived competitive advantage. Next, we explore the implications of alignment separately for these strategy types to assess whether alignment affects competitive advantage for all strategies or only for some of them. Finally, we also try to provide further insights into the KM strategies appropriate for these three business strategies.

2. THEORETICAL PERSPECTIVES

2.1 Research framework

Figure 1 shows the key constructs and main relationships are examined in this study. A select set of business strategy types—Defenders, Prospectors, and Analyzers—align with two types of KM strategies—codification and personalization are hypothesized to create the perceived competitive advantage. More details will be discussed in following sections.

![Figure 1. Research Framework](image)

2.2 Business Strategy

Business strategy is the pattern of decisions that determines and reveals a company’s objectives, purposes, or goals (Andrews, 1987). It produces the principal policies and plans to achieve those goals. Miles and Snow (1978) proposed three business strategies: Defenders, Analyzers, and Prospectors. These three strategies are described below:

**Defenders**

The Defenders emphasize a stable form. They focus on how to seal off a part of the total market to create a stable domain. The Defenders strive to protect their “turf” by providing high-quality products or services at low prices. They aim at building
and maintaining a narrow niche within the industry that competitors find difficult to penetrate. And the Defenders produce and distribute products or services as efficiently as possible by investing in developing a single core technology, which is highly cost-efficient. Because the domain of the Defenders has been deliberately created, technology efficiency is principal to its success (Miles and Snow, 1978; Sabherwal and Chan, 2001).

**Prospectors**

They act dynamically in an environment that they compete. Their primary capabilities are that of finding and taking advantage of new products and market opportunities. In other words, the Prospectors are the innovators in their market. In order to locate new opportunities, they need to develop and maintain the capacity of scanning their environment (e.g., condition, trends and events) and invest greatly in individuals and groups in order to scan for potential opportunities. The Prospectors require flexibility in technology because of their broad and dynamic domain (Miles and Snow, 1978; Sabherwal and Chan, 2001).

**Analyzers**

The Analyzers combine the strengths of the Prospectors and the Defenders. Thus the Analyzers focus on “how to locate and exploit new product and market opportunities while simultaneously maintaining a firm core of traditional products and customers.” They move toward new products or new markets by following the Prospectors, and earn revenue through a fairly stable set of products and customers. In technology investment, the Analyzers must learn how to obtain equilibrium between conflicting demands for flexibility and stability. This is accomplished by partitioning production activities to form a dual technological core. That is, technologies have to include the stable and flexible components (Miles and Snow, 1978; Sabherwal and Chan, 2001).

### 2.3 Knowledge Management Strategy

KM is the process of managing organizational knowledge by way of the creation, communication, and application of knowledge in order to create business value and sustain a competitive advantage (Tiwana, 2002). Zack (1999) stated that KM strategy guides and defines the processes and infrastructure for managing knowledge. KM strategy also demonstrates how to use information technology to organize and distribute information to and from employees (Tissen, Andriessen and Deprez, 2000). KM strategy implies what should be implemented in KM, and by which approaches. When beginning a KM initiative, one’s strategy will direct what is most important or imperative. The details contain strategies for encouraging organizational members’ knowledge sharing, managing related processes, designing knowledge-based organization, securing necessary information technologies, and expanding KM initiatives into the whole organization (Kim, Yu and Lee, 2003).

**Two types of knowledge management strategy**

Hansen et al. (1999) indicated that two types of KM strategy: codification and personalization. Codification strategy centers on information technology and emphasizes the capability to help create, store, share, and use an organization’s explicitly documented knowledge. It focuses on codifying and storing knowledge in a database. It is also known as system strategy or explicit oriented KM strategy (Choi and Lee, 2002). The main goals are faster response to customers and lower cost per knowledge transaction by the reuse of codified knowledge (Choi and Lee, 2002; Hansen et al., 1999; Keskin, 2005).

Personalization strategy centers on interpersonal interaction. It emphasizes knowledge is closely bound to the person developing it and is shared mainly through direct person-to-person contacts. In this strategy, the purpose of information technology is to help people communicate knowledge, not store it. Personalization strategy is otherwise known as human strategy or tacit oriented KM strategy (Choi and Lee, 2002; Hansen et al., 1999; Keskin, 2005). It focuses on tacit knowledge that can develop core processes, obtain new understanding, and combine ability and experience in order to rapidly respond to new ideas. Therefore, it suits to a dynamic environment (Spender and Grant, 1996). Table 1 summarizes the key features of two types of KM strategy.
2.4 Sustainable competitive advantage

A major area of research in the field of strategic management is to understand the sources of firms’ sustained competitive advantage (Barney, 1991; Porter, 1985). According to Barney (1991), a firm will possess a competitive advantage while it is implementing a value creating strategy not simultaneously being implemented by any existing or potential competitors and when these other firms are unable to duplicate the benefits of this strategy. “Sustained” doesn’t mean the period of calendar time, but the inability of competitors to duplicate that strategy making a sustainable competitive advantage.

The Knowledge-based view of the firm postulates that knowledge is the only resource that provides sustainable competitive advantage (Leonard-Barton, 1995; Shariq, 1997). Khalifa, Yu and Shen (2008) found that the usage of knowledge management system enhance organizational performance. Tiwana (2002) also argues that knowledge is the only source for innovation and sustainable competitive advantage. Cohen and Leventhal (1990) also claim a Knowledge-based competitive advantage is sustainable because the more a firm already knows, the more it can learn.

2.5 Alignment between KM Strategy and Business Strategy

Several researchers have emphasized that the alignment of business and IS strategies helps to improve organizational performance (e.g. King, 1978; Sabherwal and Chan, 2001). Venkatraman (1989a) recognized six perspectives of fit, including fit as moderation, fit as mediation, fit as matching, fit as gestalt, fit as profile deviation, and fit as covariation. This conceptualization of “fit as matching” is similar to the “interaction” approach proposed by Drazin and Van de Ven (1985), which use to evaluate “fit”. “Fit as matching” is applied to this research; it is equal to “alignment as matching,” which means that “alignment is a theoretically defined match between two related variables”.

KM is the process of creating business value and sustaining competitive advantage (Tiwana, 2002). The key to success lies in choosing an appropriate KM strategy. But how does a company decide on an appropriate strategy? Hansen et al. (1999, p.109) point out that “a company’s knowledge management strategy should reflect its competitive strategy.” And KM must either be integrated with the firm’s existing strategic direction or drive it towards a new one (Davenport, 1999). Weill and Broadbent (1998) proposed a framework which depicts the alignment of business strategy and information technology. Based on the Weill and Broadbent’s framework, Tiwana (2002) proposed a framework that aligns knowledge and business strategy (see Figure 2), and explains the link between the strategic context of a firm, KM strategy, and KM technology. The formulation of KM strategy is derived from a firm’s strategic context. Knowledge management strategies, in turn, align the design and choose of KM technology.
Strategies are built around core capabilities in a process of reorganizing and deploying resources in order to attain competitive advantage (Snyman and Kruger, 2004). The knowledge-based view of the firm postulates that knowledge is the only resource that provides a sustainable competitive advantage (Leonard-Barton, 1995; Shariq, 1997; Tiwana, 2002). Zack (1999) also argued that an organization’s strategic context helps to identify KM strategy, support its purpose or mission, strengthen its competitive position, and create shareholder value. Therefore, we propose the first hypothesis:

**Hypothesis 1:** The alignment between business strategy and KM strategy is positively associated with perceived sustainable competitive advantage.

**KM strategy profiles of Defenders, Prospectors, and Analyzers**

A company’s choice of KM strategy depends on what it provides, the way it serves its customers, the economics of its business, and the person it hires (Hansen et al., 1999; Tiwana, 2002). A codification strategy is appropriate when a firm provides regular or established products or services. The main purposes of the codification strategy are faster response to customers and lower cost per knowledge transactions by the reuse of codified knowledge. It emphasizes an efficient response, high-quality, reliable, fast, and cost-effective service.

Codification strategy invests heavily in IT to codify and store knowledge. The goal of IT investment is to create a powerful knowledge base that stores reusable codified knowledge. It suits a company that uses a price-based, competitive cost model (Choi and Lee, 2002; Hansen et al., 1999; Tiwana, 2002).

As mentioned before, the Defenders strategy tends to provide high-quality (but standard) products or services at low prices in order to maintain a narrow niche. That is, they are aggressive to maintain a domain through competitive pricing and excellent customer service. Besides, the Defenders produce and distribute product or services as efficiently as possible by investing in developing a single core technology, which is highly cost-efficient. In short, a codification strategy is better suited to the Defenders. Therefore, we propose the second hypothesis:

**Hypothesis 2:** For Defenders, the alignment between KM strategy and the “codification” KM strategy is positively associated with perceived sustainable competitive advantage.
that of finding and taking advantage of new product and market opportunities. To achieve this, the Prospectors must develop and maintain the capacity of scanning the environment, and invest in individuals and groups in order to scan for potential opportunities. They require technological flexibility for a broad and dynamic domain (Miles and Snow, 1978; Sabherwal and Chan, 2001). Therefore, for the Prospectors, a personalization strategy is appropriate. The third hypothesis states as follow:

Hypothesis 3: For Prospectors, the alignment between KM strategy and the “personalization” KM strategy is positively associated with perceived sustainable competitive advantage.

The Analyzers combine the strengths of the Prospectors and the Defenders. In technology investment, the Analyzers simultaneously emphasize flexibility and stability. This is accomplished by partitioning production activities to form a dual technological core (Miles and Snow, 1978; Sabherwal and Chan, 2001). For this reason, the Analyzers require both codification and personalization strategies in tandem. The fourth hypothesis is as follows:

Hypothesis 4: For Analyzers, the alignment between KM strategy and both KM strategies is positively associated with perceived sustainable competitive advantage.

3. RESEARCH METHODOLOGY

3.1 Sample and data collection

A survey method was employed to collect data in this study. Questionnaires were administered to senior executives of firms which have implemented KM systems in Taiwan. Senior executives were selected because they play key roles in determining the KM and business strategies of firms. For the reason that the sample frame was not easily acquired, a snowball sampling method was engaged to collect data. In total, 42 completed and usable questionnaires were used for further analysis.

3.2 Measurement

A questionnaire was developed to measure the various research constructs. The questionnaires used a multiple-items method and each item was based on a 7-point Likert scale ranging from ‘strongly disagree’ to ‘strongly agree’. The pre-testing process involved academic reviews, questionnaire item sorting exercises (Moore and Benbasat, 1991), interviews with IS executives. The survey questionnaire contained two parts: general demographical questions, and perceptual scales of each construct in the research model. The demographic questions collected information related to the samples’ industry, number of employees, number of IT department’s employees, and capital scale. Based on Venkatraman’s (1989b) operationalization of business strategy, three business strategies—defender, analyzer and prospector—were examined using six attributes—aggressiveness, analysis, defensiveness, futurity, proactiveness, and risk aversion. By way of these attributes, business strategies were measured using 18 items from Sabherwal and Chan (2001). Two types of KM strategy—codification and personalization—were measured using eight items from Choi and Lee (2002, 2003). Finally, the sustainable competitive advantage is the dependent variable. This study used absolute and relative assessments of financial performance relation to competition over a period of three years, consisting of sales growth, profitability, financial performance, innovation. It was measured using 8 items from Powell and Dent-Micallef (1997), and Choi and Lee (2002)

4. DATA ANALYSIS AND DISCUSSION

Data analysis follows the method suggested by Govindarajan (1988) and Sabherwal and Chan (2001), there are four broad steps in the data-analysis process:

(1) Normalization of research constructs:

The scores on the six business strategy attributes and the two KM strategy attributes were standardized (with scores ranging from -1.00 to + 1.00), in order bring all the variables to a uniform scale (Govindarajan, 1988). Then the standardized scores were used for the next data analysis.

(2) Classification of all respondent companies into three business strategy types;

The sample companies were next classified into the three business strategy types based on the proximity of each company’s business strategy attributes to the ideal profiles for Defenders, Prospectors, and Analyzers. The followings are the steps for classification (Sabherwal and Chan, 2001):

First, the ideal business strategy profile (in terms of the six business strategy attributes) was identified pro-files for Defenders, Prospectors, and Analyzers. This profile was based on the theoretical profiles of the three strategy types in terms of the six business strategy attributes, as discussed earlier. Referring to Govindarajan (1988), high and low values for the ideal business strategy values were operationalized as +1 and -1, respectively. A medium ideal value was operationalized as a normalized score of zero. Second, the degree of fit for any given company was measured as the Euclidean distance between that
company's scores and the scores of its ideal business strategy type, identified on the basis of the focal company's strategy (Govindarajan, 1988). Third, these distances were used to classify each company into one of the three business strategy types.

3) Computation of alignment between business strategy and KM strategy:

Following the Sabherwal and Chan’s (2001) analysis method, three tasks were involved in this step. First, the ideal KM strategy profiles for Defenders, Prospectors, and Analyzers were constructed in terms of the two KM strategy attributes. This was done based on the Choi and Lee’s (2002, 2003) KM strategy profiles (summarized in Table 1). Another time, ideal values of high, medium, and low were operationalized as 1, 0, and -1, respectively. Second, the Euclidian distance between each firm’s KM strategy and the ideal KM strategy was computed for the business strategy type to which it belonged. Third, alignment was computed by subtracting the Euclidean distance from 1. Smaller distance indicates that the KM strategy is nearer to the ideal profile and that the degree of alignment is higher.

4) Testing of the hypotheses.

Research hypotheses focused on only two constructs—perceived sustainable competitive advantage and alignment. A correlation coefficient can examined the two constructs without sacrificing any significant information (Govindarajan, 1988; Sabherwal and Chan, 2001). The regression analysis was employed to obtain the correlation coefficients. Hypothesis 1 was tested by examining the correlation between perceived business performance and alignment across the three strategies. Hypotheses 2, 3, and 4 were tested using the correlations between perceived business performance and alignment within the corresponding set of companies (Defenders, Prospectors, or Analyzers).

A Cronbach’s alpha coefficient was assessed to examine the internal consistency of the items for each variable. Except the risk aversion (0.66), the Cronbach’s alpha for other constructs are above the 0.7 recommended by Nunnally and Bernstein (1994). The analysis results indicated 9, 15, and 18 of the companies to be closest to the ideal profiles of the Defenders, Prospectors, and Analyzers, respectively. Table 2 shows the regression analysis results. The results indicate that hypothesis 1 (β=0.692, t=5.133, p < 0.05) and hypothesis 4 (β=0.679, t=2.619, p < 0.051) are supported. But, hypothesis 3 is not supported. Besides, analysis results of classification indicate that only one company belongs to the Defender in the samples. Therefore, hypothesis 2 can not test further.

<table>
<thead>
<tr>
<th>Correlation between alignment and sustainable competitive advantage</th>
<th>n</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sample</td>
<td>42</td>
<td>Support for Hypothesis 1</td>
</tr>
<tr>
<td>Defenders</td>
<td>1</td>
<td>Not test</td>
</tr>
<tr>
<td>Prospectors</td>
<td>5</td>
<td>Not support for Hypothesis 3</td>
</tr>
<tr>
<td>Analyzers</td>
<td>9</td>
<td>Support for Hypothesis 4</td>
</tr>
</tbody>
</table>

Table 2. Implications of Alignment for Organizational Performance

*** p < 0.001, ** p < 0.01, * p < 0.05

The results indicate that Hypothesis 1—proposing an overall association between alignment and perceived sustainable competitive advantage—is thus supported. And Hypothesis 4 is significant, indicating both KM strategies are positively associated with perceived sustainable competitive advantage for Analyzers. But for prospectors, the alignment is not positively associated with sustainable competitive advantage. Because of the limitation of samples, most of sample companies are analyzer, a few are prospectors and only one defender, and we could not test the all relations between three business strategies and two KM strategies. However, the research findings based on the whole samples confirm the impact of alignment between business strategy and KM strategy.

5. Conclusion

Drucker (1993) indicated that the most valuable enterprise assets of the 21st century are its knowledge and knowledge workers. Managing knowledge is more important now because knowledge is one of the most strategic weapons that can lead to sustained increase in profits and competitive advantage (Choi and Lee, 2002; Snyman and Kruger, 2004). Bierly and Chakrabarty (1996) concluded that organizational performance differences between firms are resulted from their different
knowledge bases and different capabilities in developing and deploying knowledge. Since knowledge is the most important strategic resource, then KM becomes the most important capability for building and sustaining competitive advantage.

Alignment between business strategy and KM strategy is believed to improve business competitive advantage. This paper examines the impact of alignment on perceived business sustainable competitive advantage. The findings indicate that the alignment affects perceived sustainable competitive advantage for all samples. But for different business strategies, alignment seems to influence perceived sustainable competitive advantage in Analyzers but not in Prospectors. Defenders were not tested because of the limitation of sample Knowledge management should not only focus on process-oriented, but also on content--what knowledge needs to be exploited or created (Zack, 1999). Company wants to compete successfully on knowledge; it must align business strategy to what the company knows and develop KM to support business strategy.

This study is subject to a few limitations. First, the limitation of sample brings about unable analysis of Defenders, and the small sample of Prospectors may induce the bias. Future research could reinforce the sample size to investigate the impact of alignment on Prospectors and Defenders. Next this research only focuses on the impact of alignment. It may ignore other important context factors, such as organization characteristics and structure. For future researchers, they could explore the factors that influence the alignment between KM and business strategy.

ACKNOWLEDGMENTS

This research was supported by Tajen University, Taiwan on Grant No. Tajen 96014.

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