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137. A Holistic Perspective on the Performance Implications of Strategic Alignment in Knowledge Management

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Abstract

Recently, the importance of the information technology (IT) for effective knowledge management (KM) activities has been noted. The match of IT and KM is an important concern for executives. However, their efforts do not always yield positive organizational outcome since enough exceptions indicate that knowledge strategy and human resource management (HRM) strategy are interdependent that must be integrated with IT as a whole. Consequently, a linkage of effective IT strategy and KM strategy that are consistent with HRM strategy is the key to reduced costs, which in turn, will achieve a higher performance. Drawing on the concept of strategic alignment, this study proposes a KM strategic alignment model in the MIS area within which KM strategy, IT strategy, and HRM strategy, coexist. Survey research method is employed in this study. Empirical data for hypotheses testing are collected from top-ranking companies in Taiwan, yielding 161 valid samples. Performance implications of strategic alignment are examined using covariation approaches. The results suggest that strategic alignment among these three strategies contributes to business performance. Based on the research results, meaningful findings and conclusions are described and suggestions for future research are proposed.

Keywords: strategic alignment, knowledge management strategy, information technology strategy, human resource management strategy

Introduction

It is critical for business to discern what kinds of skills or capabilities they owned and, further, how to create the resources that are valuable, rare, and difficult to imitate or substitute (Barney 1986, 1991). Knowledge has been regarded as a significant resource, more important than other physical assets (e.g., land, capital and labor, etc.) in the post-capitalist society. In the new era of complex and rapidly changing business environment, therefore, knowledge management (KM) is considered a pressing issue, as corporations have found that knowledge is the critical organizational asset and strategic resource that gives a basis for competitive advantage.

Recently, firms have started to realize the importance of the information technology (IT) for effective KM activities (Alavi and Leidner 2001) and interorganizational learning (Scott 2000). It is found that an organization which has high quality fit in KM and IT (a high-high fit) achieve high KM performance and satisfaction more frequently than those whose quality fitted low on either dimension or both (Sher and Lee 2004). Effective KM project alone can't lead to success without the support of IT (Kim 2001; Sabherwal and Sabherwal 2005). Likewise, IT alone can do nothing without good KM initiatives (Kim 2001) in attaining organizational performance (Bhatt and Grover 2005). Therefore, the strategic alignment between KM for managing business activities must be considered for business performance (Asoh 2004). In other words, it is critical and necessary to choose right IT for different KM strategies (Kim 2001), but their high-high fit doesn't always yield positive organizational

outcome since enough exceptions are found to indicate that business strategy and knowledge strategy (e.g., Asoh 2004), as well as human resource management strategy (e.g., Shih and Chiang 2005) are interdependent.

It has been realized that research regarding integrated investigation of various strategies of the organization is sparse. In the practical terms, the basic alignment mechanism is "strategy", and it is though that a match between strategy and organization is key to effectiveness in realizing intended strategies. Evidences show that an absence of proper strategic alignment may cause organizations' inability to realize sufficient value from IT investments (Woolfe 1993). Alignment is not only a great contribution to potential capabilities of an organizational IT infrastructure, but also a significant positive direct effect on organizational performance (Azab 2005). Conversely, misalignment in organizations results in redundancy and inefficiency in IT functions and increase in costs and delays (Gold et al. 2001). More seriously, it can be one of the critical reasons in reduced organizational performance.

Various trends of KM research have emerged. However, few studies examine the performance implications of strategic alignment from a holistic perspective. Therefore, this study tries to make a contribution to the academia and practice on knowledge management strategic alignment by pursuing several objectives. First, it intends to provide further insights into the performance implications in broad conceptualization of strategic alignment between KM strategy, IT strategy, and HRM strategy. Second, it examines the KM strategic alignment by using the multiple perspectives of fit as "covariation" to test strategic alignment between KM strategy, IT strategy, and HRM strategy. Finally, our research devotes to shed more light on the KM strategic alignment research to reflect the simultaneous and holistic linkages between KM strategy and other strategies that are deemed useful for KM activities.

This study is organized as follows. First, the concept of strategic alignment (or fit) and several strategic alignment models in KM fields are discussed. Next, a conceptual model and several hypotheses are proposed. The development of research measurement items and data collecting methods are then outlined. This is followed by data analysis. After this, key findings and implications are highlighted. Finally, research limitations, suggestions for future research, and conclusions are then discussed.

Theoretical Background

Perspectives of Alignment (or Fit)

The concept of alignment (or fit) is a key issue in structural contingency theory (Drazin and Van de Ven 1985). Numerous terms have been associated with alignment, such as strategic alignment, fit, integration, bridge, harmony, fusion, co-ordination, and linkage. A 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). In this study, the terminology of fit and its related concept are similar to that of strategic alignment.

According to Van de Ven and Drazin (1985), fit has three approaches: selection, interaction, and systems approaches. Six different perspectives of fit are proposed by Venkatraman (1989): matching, moderation, mediation, gestalts, covariation, and profile deviation. The six perspectives can be classified into two categories according to the number of variables being simultaneously examined. Accordingly, fit as matching, moderation, and mediation can be categorized into the reductionistic perspective, whereas fit as gestalts, covariation, and profile deviation can be regarded as holistic perspective (Venkatraman1990). In this study, we focus

on a broad perspective in which multiple variables are united to examine the performance implications of alignment, (Bergeron et al. 2001), and the profile deviation and covariation approaches are used for theory testing.

Research and Models on Alignment in the KM Field

According to the discussions aforementioned, strategic alignment between business strategy and IT strategy is a critical issue in an organization (Luftman et al. 1999). However, few studies 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). Despite the limitation of research regarding strategy-related alignment of KM, some research begins to look at the impact of situational influences or contextual factors on organizations. For example, Becerra-Fernandez and Sabherwal (2001), taking the perspective of contingency theory, consider that the impact of KM process on KM satisfaction is moderated by the nature of subunit tasks being performed. After conducting several interviews and with the survey data collected from 159 individuals across 8 subunits, this study finds that the contingency framework is supported.

Based on knowledge-based view of organizations, Bierly and Daly (2002) thinks that for each type of knowledge strategy there should be internal consistency between strategic actions and other organizational practices and systems. They present a theoretical framework to show that a firm can enhance its knowledge base, and thereby positively affect organizational performance by the congruency between HRM practices and knowledge strategy. Additionally, Truch and Bridger (2002), taking knowledge orientation, strategic, shows that both knowledge and strategic orientations are influenced by business environment. This implies that the alignment between them is an antecedent for predicting organizational performance.

Drawing on Goodhue and Thompson's TTF (task-technology fit) model and the adaptive structuration theory proposed by DeSanctis and Poole (1994), Im and Raven (2003) propose a KMS performance fit model, indicating that the fit between task characteristics and KMS characteristics determines the impact on performance by individuals and groups. However, it is basically a theoretically based model in which four propositions are proposed without empirical verification. Furthermore, Shih and Chiang (2005) speculate through an empirical study to whether or not the relationships between corporate strategy, human resource management strategy, and KM strategy exist. Taking 147 large companies in Taiwan as survey samples, they find that KM effectiveness can be better measured by process outcome, learning capability, and organizational outcomes, and is influenced by the alignment between KM strategy and HRM strategy.

Finally, Abou-Zeid (2003) makes an important contribution to the concept of strategic alignment in the KM field. Based on the original ITSAM, he proposes a KM strategic alignment model (KMSAM) in which the IT strategy is replaced by the knowledge strategy with an underlying argument: "effective and efficient use of organizational knowledge requires the alignment of knowledge strategies with business strategies" (Abou-Zeid 2003, pp. 158-159). It is his thought that business strategy or knowledge strategy can be seen as a balancing act between the external domain and internal domain, which contains opportunities/threats and capabilities/arrangements, respectively.

The second important research in the KMSAM field is done by Asoh (2004). Drawing on Abou-Zeid's (2003) study of KMSAM, he proposes a model 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 organizational performance.

Research Model and Hypothesis

As discussed in the previous paragraph, IT plays a critical role in catalyzing the movement of KM . Numerous studies argue that proper IT solutions can enhance the speed of knowledge exploration and exploitation from individual to organizational members. Owing to the complexity of KM initiatives and various kinds of IT technology, firms must pay more attention to select the right IT solutions for their KM initiatives (Sabherwal and Sabherwal 2005).

From the foregoing discussions, it is reasonable to assume that knowledge-related strategy should comply with other strategies tor achieve organizational goals. Furthermore, strategic alignment (fit) between KM strategy, corporate strategy, and HRM strategy are significantly related to better KM effectiveness in terms of process outcome, learning capability, and organizational outcomes. In addition, Neo (1988) argues that interactions among IT and qualitative organizational variables would strongly affect IT performance. From the resource-based perspective, Powell and Dent-Micallef (1997) and Mata et al. (1995) also contend that ITs alone would not produced sustainable performance; combining certain human and business resources with ITs are the right way to explain significant performance variance.

Since KM is regarded as a useful instrument in implementing business strategy, and their relationship can be seen as a balancing act between the external domain and the internal domain of a firm (Abou-Zeid 2003), it is reasonable to contend that a higher business performance would be achieved if the strategic alignments between KM strategy, HRM strategy (e.g., Shih and Chiang 2005), IT strategy and HRM strategy (e.g., Cabrera and Bonache 1999) are well conducted and aligned. Consequently, this study assumes that there is something unique in an effective organizations, i.e., various patterns of KM strategy, IT strategy, and HRM strategy must be aligned for achieving organizational outcome. Thus, the following hypothesis is proposed:

H1: The strategic alignment between KM strategy, IT strategy, and HRM strategy has a significant positive direct effect on business performance, measured in growth and profitability

The conceptual model underlying the present research is illustrated in Figure 1.

Research Design

Measurement Development

Four constructs are measured in this study: HRM strategy, KM strategy, IT strategy, and business performance. The fifth construct, strategic alignment, is regarded as a latent variable for the four antecedent strategies. A multiple-item method is used to develop the questionnaire. Each item is based on a 7-point Likert scales ranging from "1 = strongly disagree" to "7 = strongly agree". For the measurement validity, this study adopts the previous well-established research instruments wherever possible with minor changes in wording. Most of the independent and dependent variables are operationalized based on related literature.

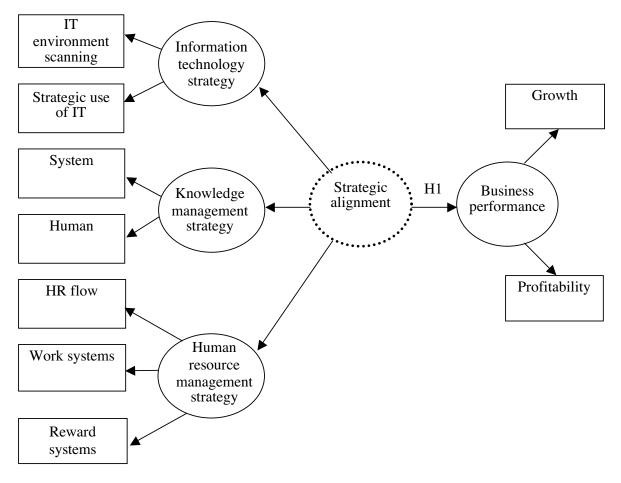


Figure 1. The Research model

The initial version of this instrument is pretested for content validity by using samples of two MIS professors and five experts in the KM field. Participants are asked to examine the survey instruments and comments on its format and length as well as the wording of each individual item. Ambiguous items are reworded based on participant feedback.

This study also conducts a pilot test using convenience samples of 3 doctoral students and 45 practitioners whose companies are successful in deploying KM activities. Then, according to their comments and suggestions, the obscure contents and structures of some items are corrected. Additionally, each item that has a value of reliability below 0.7 is deleted from the following analysis (Nunally 1978). The revised scales are then further validated and refined based on confirmatory factor analysis. Due to the limitation of paper length, only the items measuring KM strategy and IT strategy are listed in Table 1.

Data Collection Procedure

In the survey research approach, distributing the questionnaire to right person is critical. The unit of analysis of our research is an organization or a strategic business unit (SBU). The respondents should be knowledgeable about their business nature, KM activities, HRM situations, and IT deployment. Thus, the executives (CIO, CEO, CKO, Directors) and those who are responsible for devising KM within a command tent would be the right ones to answer our questionnaire.

Table 1. Item measures of constructs

Construct	Item
KM strategy:	
System	 kss1: In my organization, knowledge (know-how, technical skill, or problem solving methods) is well codified. kss2: In my organization, knowledge can be acquired easily through formal documents and manuals. kss3: In my organization, results of projects and meetings are documented. kss4: In my organization, knowledge is shared in codified forms like manuals or documents. ksp1: In my organization, knowledge can be easily acquired from experts and co-workers. ksp2: In my organization, it is easy to get face-to-face advice from experts. ksp3: In my organization, informal dialogues and meetings are
	used for knowledge sharing. ksp4: In my organization, knowledge is acquired by one-to-one mentoring.
IT strategy: IT environment	iye1: My organization uses an external information network to
scanning	identify our requirements in information technology.iye2: My organization knows the information technology used by our competition.iye3: My organization institutes a technology watch in order to change our information technology rapidly as necessary.
	iye4: My organization ensures that our choice of information technology follows the evolution of our environment.iye5: My organization uses the information technologies that will permit a rapid reaction to environmental pressure.
Strategic use of IT	 iyu1: My organization uses IT to reduce our production costs. iyu2: My organization uses IT to make substantial savings. iyu3: My organization uses IT to improve our firm's productivity. iyu4: My organization uses IT to increase our firm's
	profitability. iyu5: My organization uses IT to improve the quality of products or services. iyu6: My organization uses IT to meet the deadlines requested by our customers.

Survey research and cross-sectional observation are used as our research method. For collecting the empirical data, mailing survey research in a time frame is taken. Mailing lists are extracted from the 2005 "Common Wealth Magazine" database, including top 1000 companies in the manufacturing industry, top 500 companies in the service industry, and top 100 companies in the finance/banking industry in Taiwan. The reason for choosing the top companies in each industry is that they are the best performing companies in Taiwan. We are interested in finding out the incidence of the KM strategic alignment.

As soon as we get the mailing list, a total of 1300 questionnaires with a cover letter, and a preprinted "freepost" return envelope (Dillman 1978) are then distributed to those companies in April 2006. Two weeks later, a reminder postcard is sent to each recipient. Four weeks after the initial mailing, a follow-up letter and second questionnaire are sent to all subjects who did not return the questionnaire. Owing to incorrect address or respondents refused to participate in the investigation, 9 mailings are returned incomplete, which reduced the number of qualified samples to 1291. By the closing of the survey at the end of July 2006, a total of 169 responses are returned, of which 8 are incomplete in part of the questionnaire, yielding 161 valid samples. As a result, the gross response rate is 12.47%.

To assess the presence of non-response bias in our empirical data, we compare the early and late respondents on key attributes: sales, total assets, and the scales (employees) of firms. No significant differences are found by using T-tests of means.

Statistical Technique

In this research, we use SPSS 13 and Structural Equation Model of confirmation factor analysis with EQS to verify the reliability and validity of our research model. Model estimation is done using the maximum likelihood fitting function and sample correlation matrix. CFA involves the analysis of the measurement model, which demonstrates that the measurement model has a sufficient level of validity and reliability (Fornell and larcker 1981) for further model examination.

For assessing the strategic alignment, one must consider using multiple approaches to test the coalignment (Ven de Van and Drazin 1985) and to avoid mixed research results resulting from imprecision specification of the functional form of contingency or alignment. According to Bergeron et al.(2001), the covariation approach of alignment appear to be better suited to theory testing, thus the covariation approach are employed as the "system" perspective of alignment. Fit as covariation is a criterion-free perspective which is defined as "a pattern of covariation or internal consistency among a set of underlying theoretically related variables, and it can be best described through an illustration" (Venkatraman, 1989, p. 435). Its verbalization follows a strategy proposition that the degree of internal consistency among related variables or constituencies has significant effect on performance.

Accordingly, this study proposes the adoption of covariation perspectives of strategic alignment to prove that the strategic alignment relationship exists between KM strategy, IT strategy, and HRM strategy.

Data Analysis and Results

Sample Characteristics

The largest number of respondents comes from the manufacturing industry, representing 57.1% of the responding companies. Most of the companies have 100 to 499 employees (37.9%). Even though the questionnaires are sent to the executive officers, the respondents hold various job titles, such as top managers, middle managers, first-line managers, and others. Approximately 60.2% (24.2% + 36.0%) of the respondents have experiences more than 6 years. It indicates that the respondents have enough experience and knowledge to answer the questionnaire. The largest category (47.2%) of educational level is undergraduate degree. The second largest category is graduate school degree. These two together take up 82% of the respondents. The age of the participants ranged from 21 to 51 or above, with a largest percentage (39.8%) in 31 to 41 category. Furthermore, about 75% of the respondents are male, whereas 24.8% of the respondents are female.

Descriptive Statistics

The means, standard deviations, and matrix of intercorrelations among the variables are showed in Table 2. The correlation matrix indicates that both growth and profitability business performance are highly correlated with KM strategy (system, human), IT strategy (IT environment scanning, strategic use of IT), and HRM strategy variables (HR flow, work systems, and reward systems). It also indicates that the independent variables are significantly intercorrelated at the p < 0.01 level.

Table 2. Descriptive statistics and correlations

Variable	Mean	S.D.	1	2	3	4	5	6	7	8
1. System	4.80	0.93								
2. Human	4.70	0.83	0.66							
3. IT environment scanning	5.01	0.89	0.59	0.61						
4. Strategic use of IT	5.14	0.88	0.64	0.61	0.72					
5. HR Flow	4.62	1.11	0.43	0.50	0.41	0.40				
6. Work systems	4.54	0.96	0.51	0.51	0.46	0.49	0.66			
7. Reward systems	4.68	0.98	0.46	0.50	0.50	0.57	0.66	0.62		
8. Growth	4.49	1.06	0.38	0.44	0.33	0.38	0.49	0.40	0.41	
9. Profitability	4.43	1.04	0.40	0.44	0.31	0.39	0.55	0.43	0.43	0.87

Note: 1. N=161.

2. All correlations are significant at the p < 0.01 level (2-tailed).

Assessment of Construct Validity

Structural Equation Model with an EQS technique is used to assess the measurement model. The validity of the research constructs is assessed from an estimation and respecification of the measurement model by confirmation factor analysis (CFA). An important step in scale validation is to assess the strength of measurement between the items and associated constructs. Four measurement models are estimated respectively. In each estimated model, items that demonstrate cross load, poor loadings and reliability are dropped and the model is re-estimated. This is done to ensure that data is good fit to the measurement. We used the value of 0.5 as the threshold for factor loading assessment (Hair et al. 2006).

The four second-order confirmatory factor analyses are examined separately. For the KM strategy construct, the weak loading of the ksp4 item indicates that it would not be a constitutive element of KM strategy/human variable as initially posited. For the HRM strategy construct, the weak loadings of hrf1, hrw2, and hrr3 items also indicate that they would not be a constitutive element of HR flow, work systems, and reward systems as initially posited, respectively. Thus, these items are deleted to ensure the unidimensionality of the knowledge management strategy construct. After removing these items, we re-examined the CFA model. This time, the parameter estimates, and fit indices imply that each of the dimensions demonstrates a good fit for the observed covariances among their item measures. Furthermore, the construct reliability (ϱ value) and Cronbach's α coefficient are also greater than the recommended value of 0.6 (Fornell and larcker 1981) and 0.7 (Nunally 1978), respectively.

Hypothesis Testing

According to the arguments proposed by Venkatraman (1989, 1990), strategic alignment is specified as a second-order construct derived from three first-order constructs, which are the KM strategy, IT strategy, and HRM strategy. Business performance is also considered as a

second-order construct composed of growth and profitability. According to Venkatraman (1989), although the covariation approach can be modeled as exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), CFA is preferred for modeling fit as covariation. In this vein, a direct effects model (i.e., first-order factor model) must compete against the covariation model (second-order factor model).

Following the methodology proposed by Venkatraman (1989), which has been adopted by previous studies to examine the performance implications of strategic alignment (e.g., Bergeron et al. 2001; Venkatraman 1990), we use three criteria to assess the preferred model between first-order factor and second-order factor model:

- (1) By comparing the coefficients of determination of the two models (analogous to R²). As can be seen in Figure 2 and Figure 3, the direct effects model explains 4% less variance in business performance (R²=0.40 versus 0.44). Furthermore, according to Marsh and Hocever [81], a second-order factor model is just a parsimonious explanation of the covariation among the first-order factors. Therefore, even when the second-order model explains effectively the covariation among the first-order factors, the goodness of fit can never be better than that of the first-order model (Venkatraman 1989; 1990). The fit indices of the second-order factor model in this study demonstrates slightly lower than that of the first-order model (depicts in Figure 2 and Figure 3), suggesting the acceptance of the coalignment over the main effects model.
- (2) Calculate target coefficient (T), the ration of the chi-square of the first-order model to the chi-square of the second-order model defined by Marsh and Hocevar (1985). This coefficient has an upper bound of 1.00, and can be interpreted similar to Bentler and Bonett's (1980) delta index. In this study, the T-coefficient has a value of 0.99 (21.76/21.996) which further supports the superiority of the second-order model.
- (3) Assess the statistical significance of the loadings on the second-order factor of strategic alignment. The ML estimates (as shown in Figure 2) indicate that the three parameters are significant, meaning the three first-order factors consistently contribute to the second-order factor, termed as strategic alignment, whereas 2 of 3 parameters show insignificance in path loadings of the first-order factor model (as shown in Figure 3). Furthermore, the forth parameter (from strategic alignment to business performance) in the second-order factor model represents the impact of strategic alignment on business performance in terms of growth and profitability, providing strong support to the performance implications of strategic alignment. Overall, the fit statistics indicates a good fit of both model with the data collected from the validated measures (Strategy alignment model: $\chi_{15}^2 = 21.996$; $\chi^2/d.f. = 1.47$, p<.001; AGFI = 0.91; CFI = 0.99; NFI = 0.98; NNFI = 0.98, SRMSR = 0.035; direct effects model: $\chi_{16}^2 = 21.76$; $\chi^2/d.f. = 1.36$, p<.001; AGFI = 0.92; CFI = 0.99; NFI = 0.98; NNFI = 0.99, SRMSR = 0.028). Therefore, according to Figure 2, hypothesis 1 is supported.

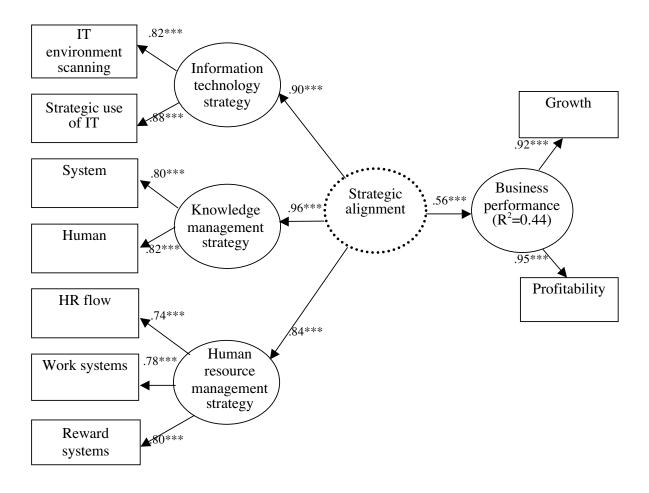


Figure 2. The strategic alignment model

Discussion and conclusion

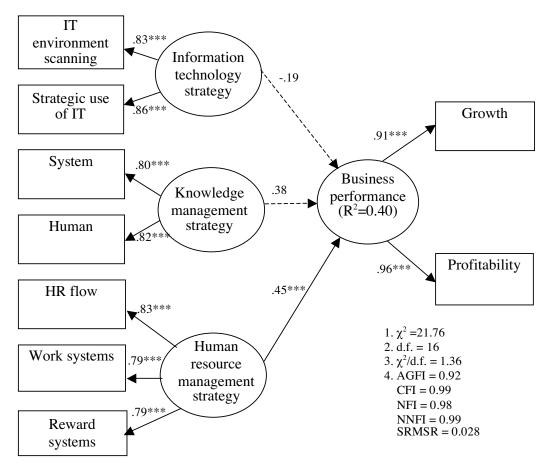
Key Findings and Discussion

The test results of the structure are summarized in Figure 2. The effect of the strategic alignment on business performance is examined. All of the paths exhibits significance at the 0.05 level. The results show that, the strategic alignment explains 44% of the variance and has significant direct effects on Business performance. Furthermore, the loadings from each latent variable to its manifest variables are also significant.

According to the analyses, the results significantly support the holistic perspective of performance implication of strategic alignment between KM strategy, IT strategy, and HRM strategy. That is, the results from both holistic approaches taken together strongly support the theoretical propositions of the performance impact of strategic alignment.

The results presented here reveal that the firms that are good at aligning IT strategy and HRM strategy with KM strategy demonstrate a high performance level. It means that firms must employ right IT and HRM practices with right KM strategies. For example, firms with system-oriented (codification) KM strategy must utilize: (1) extensive selection and training procedures and have relatively high job security in their HR flow practices; (2) compensation and promotion decisions tightly connected to employees' work performance; and (3) use broadly defined jobs with enriched design, team-based work organization, and rotate jobs among employees to familiar them with their colleagues' works in work systems. This is

done to ensure that the reused codified knowledge could store abundant expertise from different employees. Furthermore, the IT strategies of firms with system-oriented (codification) KM strategy must focus on strategic use of IT, meaning that not only to collect operational knowledge to connect people with reusable codified knowledge, but also to focus on generating large overall revenues.



gure 3. The direct effects model

On the other hand, firms with human-oriented (personalization) KM strategy must have reward systems to encourage employees to share knowledge with others; instead of providing intensive training from the company, employees' are encouraged to develop social networks so that tacit knowledge can be shared. Companies should focus on "maintaining" not "creating" high profit margins, performing external IT environment scanning, supporting the latest IT to facilitate person-to-person conversations and knowledge exchange.

It has already been noted the positive direct relationship between strategic alignment and business performance. Our study echoes this point of view. We contend that KM strategy must comply with IT strategy and HRM strategy to achieve high business performance. Thus, strategic alignment between KM, IT and HRM are critical for KM practices.

Implications

To the researchers, it has shown realized that research regarding integrated investigation of various strategies within an organization is still sparse. Furthermore, the analysis and design of an organization from a holistic perspective is important for business to achieve benefits.

Fi

Since a successful KM project must take various attributes into account to assure its positive outcome, organization, process, human resources, and IT are thought to be the key elements and enablers for best KM practices. Thus, cogitating and integrating various factors related to KM area are considered the most important tasks to researchers.

Previous studies have encouraged researchers not only to examine alignment or fit issue on research but also to use multiple perspectives to test the performance implications of strategic alignment (Drazin and Van de Ven 1985; Venkatraman 1990). As Van de Ven and Drazin (1985) stated "Studies should be designed to permit comparative evaluation of as many forms of fit as possible" (p. 358). This indicates that researchers should adopt different fit approaches to discern the importance of KM strategic alignment on business performance. Following this premise, this study uses the approaches of fit as covariation. Furthermore, we proposed a direct effects causal model (i.e., SEM first-order model) as a baseline model in comparison with strategic alignment model (i.e., SEM second-order model). The usage of covariation approach indicates that high strategic alignment between KM strategy, IT strategy, and HRM strategy has a significant positive direct effect on business performance measured in growth and profitability. Furthermore, the evidences also show that the strategic alignment model is superior to the direct effects model in explaining business performance

To the practitioners, this study finds that it is useful to view strategic alignment as internal consistency or congruence between KM strategy, IT strategy, and HRM strategy. The findings suggest that firms should aim at integrated human resources and IT solutions in KM activities, rather than just attempt to focus on KM strategies. For example, if firms try to develop social networks to link people for transferring and sharing their knowledge person-to-person, there must be reward systems to encourage them to do so. The firms should also scan the external IT environment for the latest IT to enhance the people-to-people communications. Companies who want to develop high-quality and reliable information systems to codify, store, disseminate, and reuse knowledge must provide extensive trainings to employees, have clear job definitions, and design compensations that tightly connect to employees' working performance, and use IT strategically to gain operational knowledge to connect people with reusable codified knowledge. By doing so, a higher growth would achieve. All of the above benefits require CEO or managers to take an active role in seeking KM strategic alignment.

Conclusions

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 aspect of KM. This results in highly ambiguous results, inhibiting generalization in academic research and practical operation. Based on the premise that the business value from KM investments requires the effective integration of strategic alignment between KM strategy, IT strategy, and HRM strategy, multiple approaches are necessary for strategy management research to examine the strategic alignment model construction.

Therefore, the performance implications of strategic alignment are measured with the covariation approach. Three possible antecedents of this alignment are also examined, namely KM strategy, IT strategy, and HRM strategy. The results reinforce Venkatraman's and Van de Ven's contention that different conceptualizations, verbalizations, and perspectives of analysis of alignment are necessary. A total of 161 valid questionnaires are collected from top ranked companies in Taiwan including manufacturing, service, and finance sectors. The findings show that strategic alignment of KM strategy, IT strategy, and

HRM strategy has real potential for enhancing the understanding of KM context and design as related to business performance. However, further research is necessary to examine whether the findings of this study can be generalized to small and medium size firms or other countries and cultures.

The limitation of this research concerns the causal relationship between strategic alignment of KM strategy, IT strategy, and HRM strategy and business performance. There are potentially other factors that could influence strategic alignment and business performance. Furthermore, this study measures IT strategy, HRM strategy with their original variables, since other related research use median value to break down the sample into two groups (e.g., "buy-bureaucratic" and "make-organic" HRM strategy, or "high" and "low" usage in IT strategy) as the proxies. Future research would use these categories to test their strategic alignment relationship on performance. We hope that this study can motivate and aid future research.

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