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A Strategic Alignment Model for Knowledge Management

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ABSTRACT

With the growing awareness of the crucial role that knowledge can play in gaining competitive advantage, several issues with regard to knowledge management (KM) initiatives have challenged executives. The articulation of the relationship between an organization's competitive strategy and its knowledge strategy is the most eminent. Based on the premise that the realization of business value from KM investments requires alignment between business and knowledge strategies, the issue is addressed in this paper by developing a strategic alignment model for KM. This model, which provides alternative strategic perspectives of alignment, is used to study a KM initiative at Buckman Laboratories.

INTRODUCTION

The role of knowledge as a crucial asset for enterprise's survival and advancement has been recognized by several researchers (e.g., Von Krogh et al. 2000). Moreover, by having knowledge (intellectual resources), an organization can understand how to exploit and develop its traditional resources better than its competitors can, even if some or all of those traditional resources are not unique (Zack 1999).

However, realizing the importance of organizational knowledge and its management in creating value and in gaining competitive advantage is only the first and the easiest step in any knowledge management (KM) initiative. The second and almost as important step is to answer how and where to begin questioning (Earl 2001). In fact "many executives are struggling to articulate the relationship between their organization's competitive strategy and its intellectual resources and capabilities (knowledge)" (Zack 1999).

This paper stems from the premise that the realization of business value gained from KM investment requires alignment between the business (B-) and knowledge (K-) strategies of the firm. Therefore, it addresses the aforementioned issues by developing a "strategic alignment model (SAM)" for KM initiatives. It is based on the Henderson-Venkatraman SAM for IT (Henderson-Venkatraman 1993).

The remainder of this paper is organized along the following line. The Henderson-Venkatraman SAM for IT (ITSAM) is first presented. Next, the KM strategic alignment model (KMSAM) is developed and used to study the KM initiative at Buckman Laboratories. The paper then concludes by discussing the implications of the proposed metamodel.

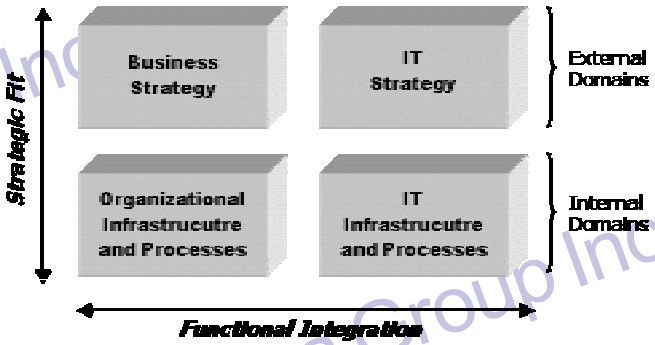
OVERVIEW OF THE HENDERSON-VENKARTAMAN STRATEGIC ALIGNMENT MODEL

The strategic alignment model (SAM), the framework for this study, is based on the theoretical construct developed by Henderson and Venkatraman (1993). In this model business success is viewed as the result of the synergy between four domains. The first two, the external domains, are business strategy and information technology (IT) strategy. The strategy domains are described in terms of (business/technology) scope, (distinctive business/IT systemic) competencies and (business/IT) governance. The second two, the internal domains, are organizational infrastructure and processes and IT infrastructure and processes. Both internal domains are described in terms of (administrative/IT) infrastructure, (business/IT) processes and (business/IT) skills. This synergy is achieved through two types of relationship:

- *Strategic fit* emphasizes the need of consistency between strategy (external domain) and its implementation (internal domain).
- *Functional integration*, which has two modes, extends the strategic fit across functional domains. The first mode, *strategic integration*, deals with the capability of IT functionality to both shape and support business strategy. The second mode, operation integration, focuses on the criticality of ensuring internal coherence between organizational infrastructure and processes and IT infrastructure and processes.

The following figure shows the elements of the IT Strategic Alignment Model (ITSAM).

Figure 1: IT Strategic alignment model (Henderson & Venkatraman, 1993)



Effecting a change in any single domain requires the use of three out of the four domains to assure that both strategic fit and functional integration are properly addressed. Therefore, applying ITSAM requires the identification of three domains: pivot, anchor and impacted (Luftman 1996). Pivot domain is the weakest and has the greatest opportunity for improvement. Anchor domain is the strongest and will be the driver of change. Finally, impacted domain is the area affected by a change to the pivot domain. Based on this distinction, twelve perspectives of strategic alignment can be identified (See the table). Among the twelve perspectives, the last four are fusion perspectives that result from fusing two of the eight single-path perspectives. In fusion perspective the pivot domain is not directly adjacent to the anchor domain (Luftman 1996).

KM STRATEGIC ALIGNMENT MODEL

Whereas the premise of the original ITSAM is that "the effective and efficient utilization of IT requires the alignment of IT strategies with business strategies" (Henderson and Venkatraman 1993), the premise of knowledge management SAM (KMSAM), in which knowledge strategy replaces IT strategy, is that "the effective and efficient use of organizational knowledge requires the alignment of knowledge strategies with business strategies". Since strategy, whether business (B)-strategy or knowledge (K)- strategy, can be seen as a balancing act

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Table 1: Alignment perspectives (Luftman, 1996)

	Domin / Strategic Perspective	Anchor Domain	Pivot Domain	Impacted Domain
1	**Strategy Execution**	Business Strategy	Organizational Infrastructure	IT Infrastructure
2	**Technology Potential**	Business Strategy	IT Strategy	IT Infrastructure
3	**Competitive Potential**	IT Strategy	Business Strategy	Organizational Infrastructure
4	**Service Level**	IT Strategy	IT Infrastructure	Organizational Infrastructure
5	**IT/Organizational Infrastructure**	IT Infrastructure	Organizational Infrastructure	Business Strategy
6	**IT Infrastructure/ IT Strategy**	IT Infrastructure	IT Strategy	Business Strategy
7	**Organizational/ IT Infrastructure**	Organizational Infrastructure	IT Infrastructure	IT Strategy
8	**Organizational Infrastructure/ Business Strategy**	Organizational Infrastructure	Business Strategy	IT Strategy
9	**IT Infrastructure Fusion** (Perspectives 1 + 2)	Business Strategy	▪ Organizational Infrastructure ▪ IT Strategy	IT Infrastructure
10	**Organizational Infrastructure Fusion** (Perspectives 3+ 4)	IT Strategy	▪ Business Strategy ▪ IT Infrastructure	Organizational Infrastructure
11	**Business Strategy Fusion** (Perspectives 5+ 6)	IT Infrastructure	▪ Organizational Infrastructure ▪ IT Strategy	Business Strategy
12	**IT Strategy Fusion** (Perspectives 7+ 8)	Organizational Infrastructure	▪ Business Strategy ▪ IT Infrastructure	IT Strategy

between the *external domain* (opportunities and threats) and the *internal domain* (capabilities/arrangements) of the firm (strengths and weaknesses) (Henderson and Venkatraman 1993, Zack 1999), the external and internal domains of K-strategy have first to be defined.

K-Strategy External Domain

In the case of K-strategy, the *external domain* involves three dimensions: *K-Scope* (what the firm must know), *K-Systemic Competencies* (what are the critical characteristics of the required knowledge) and *K-Governance* (how to obtain the required K-competencies).

K-Scope. This dimension deals with the specific domains of knowledge that are critical to the firm's survival and advancement strategies. Survival strategies aim at securing current enterprise profitability, while advancement strategies aim for future profitability (Von Krogh et al. 2000).

K- Systemic Competencies. The focus of this dimension is the set of utilization-oriented characteristics of knowledge that could contribute positively to the creation of new business strategy or better support of existing business strategy. This set includes characteristics such as:

- *Accessibility*, the extent to which organizational knowledge is made available to its members regardless of time or location (Buckman 1998);
- *Transferability*, the extent to which the newly acquired knowledge can be applied in other contexts, e.g., organizational, cultural, (Grant 1996);
- *Appropriability*, the extent to which knowledge can be imitated. Things are said to have "strong" appropriability if they are difficult to reproduce by another organization. The converse is "weak" appropriability. A related concept is that of "sticky/slippery", i.e., sticky knowledge is an integral part of a regime such that it cannot be extracted in a meaningful whole (Grant 1996, Narasimha 2000);
- *Depth and breadth* (Narasimha 2000);
- *Compositionality*, the amenability of knowledge to be synthesized from existing knowledge; and
- *Integrateability*, the extent to which the newly acquired knowledge can be integrated with existing knowledge.

K-Governance. This dimension deals with the selection and use of mechanisms for obtaining the required K-competencies. The following are examples of some "acquisition mechanisms" (Probst 1998):

- Bringing experts to the firm by recruiting specialists as full-time or temporary staff. Temporary hiring is becoming an increasingly interesting alternative.
- Tapping knowledge held by other firms through different inter-organizational co-operation forms such as joint ventures or strategic alliances.
- Utilizing the knowledge of stakeholders, e.g., customers, suppliers, employees and owners. For example, involving customers early in the product-development process could generate valuable information about their needs
- Acquiring knowledge products such as software, patents, and CD-ROMs.

K-Strategy Internal Domain

In the case of K-*strategy,* the internal domain involves three dimensions: *Knowledge (K)-infrastructures, Knowledge (K)- processes* and *Knowledge (K)-skills*.

K- Infrastructures. Organizational knowledge-manipulating processes are socially interaction-intensive. They involve social interactions and direct communication and contact among individuals and among members of "communities of practice". Therefore, they require the presence of social capital. Social capital is "the sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by a social unit" (Nahapiet and Ghshal 1998). Recognizing the importance of social capital Gold et al (2001) have identified three key K-infrastructures, i.e., technical, structural and cultural, that enable social capital. The *K-technical infrastructure* includes IT-enabled technologies that support KM activities such as business intelligence, collaboration and distributed learning, K-discovery, K-mapping, opportunity generation and security. The *K-structural infrastructure* refers to the presence of enabling formal organization structures and the organization's system of rewards and incentives. Finally, the *K-cultural infrastructure* involves elements such as corporate vision and the organization's system of values (Gold et al 2001).

K-Processes. Knowledge processes are characterized by their dual nature. On the one hand there are K-manipulating processes, i.e., processes that deal with knowledge such as acquiring knowledge, converting it into a useful form, applying it, and protecting it. On the other hand, it has been identified that cultural and organizational issues are crucial in the successful deployment of KMS (Alavi and Leider, 1999; von Krogh et al., 2000). Therefore, each K-manipulating process should be associated with one or more K-enabling process. The following are examples of K-enabling processes (von Krogh et al., 2000):

1. **Managing Conversation.** This process includes setting the guiding principles for holding fruitful conversations with respect to encouraging active participation, establishing conversational etiquette, editing, and fostering innovative language.
2. **Mobilizing Knowledge Activists.** The principal activities of this process consist of triggering K-manipulating activities throughout the different parts of an enterprise, coordinating them, and providing overall directions for them. These activities are performed by the "knowledge activist" which could be an individual, group or function.
3. **Creating the Right Context.** As K-manipulating activities are crucially dependent on social interactions among the organizational members, this process aims at setting "shared spaces" - physical, cyber, and mental - that enhance the existing interactions and foster new ones. This involves creating the organizational structures that foster solid and effective collaboration.
4. **Globalizing Local Knowledge.** This process aims at supporting the creative approach to knowledge mobilization. Since knowledge is context-sensitive, it cannot be treated as a "commodity" that can be packaged and shipped to another location, within or outside the organization, to be readily re-used. Rather, to be effective, it must be reshaped by local experience and expectations, and justified by local values. In other words, it must be re-created.

K-Skills. KM processes are by their very nature multifaceted. They involve many dimensions such as technical, organizational and human. This reflects on the nature of skills required to perform them. For example, Malhotra (1997) defines a senior Knowledge Executive such as a Chief Knowledge Officer (CKO) or the Organizational Knowledge Architect as the person who should have the combined capabilities of a business strategist, technology analyst, and a human resource professional. The ability to facilitate the ongoing process of knowledge sharing and knowledge renewal, the ability to develop the human and cultural infrastructure that facilitates information sharing, and the ability to utilize the available technologies for serving the creation, sharing and documentation of knowledge are some examples of the required skills.

KMSAM AT BUCKMAN LABORATORIES

In order to illustrate its interpretive power, KMSAM it will be used to study one of the KM initiatives at Buckman Laboratories (Buckman 1998, Fulmer 1999, Pan and Scarbrough 1999, Rifkin 1996). The first KM initiative, global knowledge sharing, was introduced when Robert Buckman, who became the new chairman and CEO in1978, was convinced that the company was too "product driven" and not sufficiently "customer driven". This shift reflected Buckman's belief that "cash flow is generated on the front line with customers, by associates…who have built relationships of continuity and trust, face to face with the customer" (Fulmer 1999). To realize such a strategic shift the percentage of salespeople, i.e., those employees that is "effectively engaged with the customer", was increased from 16% in 1979 to 80% by 2000 (Rifkin 1996). Moreover, salespeople must provide fast and correct answers to customers by deploying the company's tacit knowledge, which is in the heads of the company's associates, at the points of sale. The new K-strategy that emerged from this business strategic shift was characterized by its emphasis on associates' expertise (K-scope), accessibility, integrateability and breadth of knowledge - "replace the depth of knowledge offered in a multi-tiered hierarchy with the breadth of knowledge that is the sum of the collective experience of employees" (Fulmer 1999) - (K-systemic competencies) and "utilizing stakeholders' knowledge" as the main mechanism for acquiring knowledge (K-governance).

The implementation of this new K-strategy was accomplished by developing K-infrastructures, K-processes and K-skills. The first componen of K-infrastructures, K-technical infrastructure, is K'Netix, a global corporate intranet consisting of e-mail, seven forums, files of company knowledge and databases of 'fluid' knowledge. K'Netix's forums are "open spaces" where anyone can post a message, question, and/or request for help. The second component, K-structural infrastructure, is Knowledge Transfer Department (KTD) which is formed by merging three departments: IS, Telecommunication and Technical Information Center. The last component, K-cultural Infrastructure, includes a reward system, "the most powerful people are those who become a source of knowledge by sharing what they know" (Rifkin 1996) and Buckman's Code of Ethics that "provides the basis for the respect and trust that are necessary in a knowledge sharing environment" (Fulmer 1999). As both Bauckman's B-strategy and K-strategy are customer-driven the K-sharing flow includes processes such as acquiring knowledge (listening to customer, identifying the gap, information search) and converting knowledge into useful form (formulate response, present response to customer). Finally, the K-skills at Buckman Laboratories are exemplified by forum "sysop" (system operator) position, which has been established to facilitate discussion, promote usage, track requests and make sure that they were answered and assist users.

From the previous discussion one can identify "K-infrastructure fusion" strategic alignment perspective is the one that adopted by Buckman Laboratories. In this perspective B-strategy is the anchor domain that drive the change, K-strategy and organizational infrastructure are pivot domains and K-infrastructure and processes is the impacted domain.

CONCLUSION

Based on the premise that the realization of business value from KM investments requires alignment between the business and knowledge strategies and on the IT strategic alignment model (SAM) developed by Henderson and Venkatraman (1993), a KM strategic alignment model (KMSAM) is developed. The interpretive power of KMSAM is illustrated by studying the KM initiative at Buckman Laboratories. Moreover, it provides executives with alternative strategic perspectives that can be used as guidelines for aligning K-strategy and B-strategy.

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