



Knowledge Utilization Capability and its Dimensions

KEYWORDS

Knowledge Utilization Capability, Combinative Capability, Systems, Coordination, Socialization and Assimilation Capabilities.

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ABSTRACT *As innovative solutions become more complex, requiring specialist knowledge and specialized software support even more deeply skilled, competing specialist firms have appeared. A knowledge-based perspective of the firm has emerged in the strategic management literature which states that the services rendered by tangible resources depend on how they are combined and applied, which is a function of the firm's know-how i.e. knowledge. While the combinative capabilities generate new applications from existing knowledge, knowledge utilization capability is the capability of an organization to synthesize new knowledge and reconfigure it from both the existing and new knowledge via the inter-organizational linkages. The systems, coordination, socialization and assimilation combinative capabilities of firm exploit knowledge during "interactions" institutionalized within a firm. This finally leads to knowledge utilization capability in a firm as typified in this paper.*

1.0 Introduction

Increasing emphasis is given to the areas in which international service business should extend itself (Quinn, 2000). Chief amongst those is the exploration of capabilities enhancement via knowledge utilization. It is during the operational stage in any international deal, wherein the partnership flourishes that knowledge utilization enabled competitive advantage is built. The service provider must be ensuring knowledge transparency over time as it is important to capitalize on experiences shared with clients in the past. By taking advantage of these shared experiences the vendor can help its clients learn. This also implies that vendor must thoroughly understand the industrial processes of its main clients so that it can fully exploit all opportunities for service and productivity improvements (Quelin & Duhamel, 2003).

Knowledge is the intimately defined and specialized power of translation required to capture customer requirements and reproduce them in the language of subsystem performance specifications. It is based upon the many detailed understandings of the linkages between user requirements, system parameters, and component specifications and is unique to each company, intuitively developed in countless conversations by different teams of strategists (Venkatesan, 1992).

Companies with successful knowledge strategies follow certain well-accepted principles by: (1) concentrating more power than anyone else on a few capabilities that customers genuinely care about; (2) innovating constantly to ensure that their performance and value-added stay ahead of competitors; (3) developing conscious flexibilities to deal with changing competitor pressures and opportunities; and (4) leveraging their resources significantly by using the capabilities and investments of others (Quinn, 1999).

2.0 Knowledge Utilization Capability

A knowledge-based perspective of the firm has emerged in the strategic management literature (Cole, 1998; Spender, 1996a, 1996b; Nonaka & Takeuchi, 1995). The oft repeated framework of "knowledge systems" in organizations is grounded in the sociology of knowledge (Berger & Luckman, 1967; Gurvitch, 1971; Holzner & Marx, 1979) that views organizations as social collectives. According to this stream of research, organizations are portrayed as consisting of four sets of socially enacted "knowledge processes" (1) creation, (2) storage/retrieval, (3) transfer, and (4) application (Holzner & Marx, 1979; Pentland, 1995). While this view represents

both the cognitive and social nature of organizations as knowledge systems, it does not mean a linear sequence for the four processes delineated above. Instead, the four organizational knowledge processes may be tightly intertwined (Alavi & Leidner, 2001). Additionally, the construct of knowledge utilization capability is introduced as the harbinger of new knowledge creation and its application via the incorporation of the existing and new knowledge.

3.0 Combinative Capabilities

A firm's ability to "generate new combinations of existing knowledge" and "to exploit its knowledge of the unexplored potential of the technology" is described as "combinative capabilities" by Kogut and Zander (1992). New technological fields emerge through researchers' problem solving activities. These efforts result in ideas and techniques representing knowledge (Lauden, 1984; Rosenberg, 1982). Thus, technology is a form of knowledge and technological change can be understood by examining knowledge development. Thus, in terms of knowledge, "a firm's combinative capabilities synthesize and apply current and acquired knowledge" (Kogut & Zander, 1992). The use of the term "combination" by Kogut and Zander is associated with the term "integration" as used by Grant (1996). The idea behind the concept of combinative capabilities is that it is the integration of knowledge, rather than the knowledge itself that forms the basis of a firm's competitive advantage. But, creating new knowledge doesn't occur in abstraction from current abilities. Rather, new learning, such as in innovations, is product of a firm's combinative capabilities to generate new applications from existing knowledge. Thus, combinative capabilities imply the intersection of the capability of the firm to exploit its knowledge and the unexplored potential of the technology.

Although, there are three major types of combinative capabilities of a firm that have been identified by Van den Bosch, Volberda & Boer (1999), this paper and its conceptualization of knowledge utilization extends this framework by proposing a fourth combinative capability. Van den Bosch, Volberda & Boer (1999) have discussed the three combinative capabilities termed as the systems capabilities, coordination capabilities and socialization capabilities. Added to this framework is the fourth combinative capability labeled as the assimilation capability. This is necessitated by a need to complete the knowledge conversion spiral in inter as well as the intra-organizational relationships.

A firm reconfiguring existing knowledge can use the four combinative capabilities to absorb knowledge located both within and outside the firm. Thus, Van den Bosch, Volberda & Boer's (1999) three combinative capabilities, as well as the fourth assimilation combinative capability that is introduced in this paper is employed.

As explained earlier, the idea behind the concept of combinative capabilities is that it is the integration of knowledge, rather than the knowledge itself that forms the basis of an organization's knowledge utilization capability. Though the use of the term combination of Kogut and Zander (1992) runs parallel to the term integration used by Grant (1996a), and the term configuration used by Henderson and Clark (1990), the underlying mechanisms an organization has at its disposal to achieve them remains unstated. The specification of the different combination or integration mechanisms an organization has at its disposal and the impact of these on the outcome of the knowledge integration process has been discussed in detail by Van den Bosch, Volberda, & Boer, (1999). Thus, they suggest three types of combinative capabilities via their framework, which can be both of an intra and inter-organizational nature. These are the systems, coordination and socialization capabilities.

4.0 Systems Capabilities

Systems capabilities in terms of direction, policies, procedures, and manuals are often used to integrate explicit knowledge. Nonaka (1994) calls this "combination". This capability describes the extent to which behaviors are programmed in advance of their execution. Individuals exchange and combine explicit knowledge through formal exchange mechanisms such as a priori procedures, formal language, codes, working manuals, information systems, etc. The primary virtue of systems capabilities is that they eliminate the need for further communication and communication among client and vendor in an outsourcing relationship. While in routine situations behavior of participants is predictable, that is, they know what to do, and they can react very quickly, the systems capabilities refer to the dynamic capabilities that are more formalized, explicit, and changeable by management. Besides, they provide a memory for handling the daily, routine situations.

5.0 Coordination Capabilities

Coordination Capabilities refer to lateral ways of coordination. These methods of coordination might be explicitly designed, but may also emerge from a process of interaction (De Leeuw & Volberda, 1996). These capabilities accumulate as a result of training and job rotation, natural liaison devices and participation. Education and training indirectly achieve what rules and procedures, as a part of systems capabilities, do directly.

Firstly, on the job professionals appear to be working autonomously, but in fact they may be guided by trained skills and acquired knowledge. Job rotation helps build up knowledge domains via exposure to different functional teams in an organization.

Secondly, mutual adjustment (Mintzberg, 1979) is a means of knowledge coordination which is regulated by the organizational liaison devices. These liaison devices result in lateral forms of communications and joint decision-making processes that cut across functions and lines of authority. The effect is that the capacity to process information and to coordinate knowledge is increased (Galbraith, 1973).

Thirdly, participation in decision-making increases knowledge utilization in situations in which delegation is a necessity. Thus, participation describes the extent to which subordinates take part in the decision-making process of superiors. A higher degree of participation results in a richer knowledge architecture, based on various contributions of participants at lower levels.

6.0 Socialization Capabilities

Socialization capabilities refer to the ability of the firm to produce a shared ideology that offers members an attractive identity as well as collective interpretations of reality. These capabilities result from the firm's culture in terms of a system of ideas, or inferred ideational codes lying behind the realm of observable events. These give rise to social integration that goes far beyond the systems and coordination capabilities discussed earlier.

7.0 Assimilation Capabilities

Besides the three combinative capabilities mentioned above, the fourth combinative capability i.e. the capability to assimilate at an organizational or intra-organizational level is introduced in this thesis.

Nonaka (1994) depicted the assimilation combinative capability to happen during the internalization phase which is the fourth phase of the knowledge conversion spiral. This phase is characterized by 'operational knowledge' that according to Nonaka (1994) happens when explicit knowledge gets converted to tacit know-how (Christensen & Bang, 2003).

Theories of assimilation have drawn attention to use of complex technical knowledge once it becomes known to the user (Purvis, Sambamurthy, Zmud, 2001). Assimilation is defined as the extent to which the use of technology diffuses across the organizational projects or work processes and becomes routinized in the activities of those projects and processes (Tornatzky & Klein, 1982; Cooper & Zmud, 1990). Having established this theoretical rationale for the new construct termed as assimilation combinative capability, it is defined in the ensuing discussion.

Assimilation Capabilities refer to the ability of a firm to incorporate the new knowledge from the external environment with existing knowledge resulting in changes in work practices. This is expressed by the willingness of the firm to modify its business, administrative, technical or logistical practices. The modes enabling the knowledge assimilation are working with specialty groups to incorporate industry benchmarks into practice guidelines, linking with the extra-project communities in the parent and vendor companies and via the technology workshops to improve technical standards.

This is over and above the systems, coordination and socialization capabilities mentioned earlier as this involves corporate integration of external or new knowledge. This assimilation combinative capability is most meaningful in a competitive firm.

8.0 The Knowledge Utilization Capability Dimensions

According to Kogut and Zander (1992) the "intersection" of the capability of the firm to exploit its knowledge and the unexplored potential of knowledge is what they mean by the term combinative capability. While the combinative capabilities generate new applications from existing knowledge (Kogut & Zander, 1992), KUC is the capability of an organization to synthesize new knowledge and reconfigure it from both the existing and new knowledge via the inter-organizational linkages. The systems, coordination, socialization and assimilation combinative capabilities of a firm exploit knowledge only via their "interaction" with the knowledge utilization strategies institutionalized within a firm. This finally leads to knowledge utilization capability.

This capability develops in a context-dependent and path-dependent manner (Nelson & Winter, 1982; Dosi & Marengo, 1994). Interactive learning steps taken in development involve tacit dimensions and causal ambiguity (Polanyi, 1966; Lippman & Rumel, 1982). Levitt & March (1988) suggest that learning routines is often local and interpretation of experience is difficult, either because generalizations are drawn from small samples in complex and changing environments or reflection is separated from action (Nelson & Winter,

1982). Such and other organizational capabilities are harder to separate from each other if more linkages between them stem from experience-based learning. Articulating interfaces and combining capabilities within and between organizations is far from easy. Thus, knowledge utilization capability may be extremely valuable in the competitive scenario in which it evolves and in which it is conducted (Mahnke, 2001).

Thus, the nexus of combinative capabilities and knowledge utilization approaches leads to the four basic dimensions of Knowledge Utilization Capability as the systems, coordination, socialization and assimilation capabilities (see Figure 1).

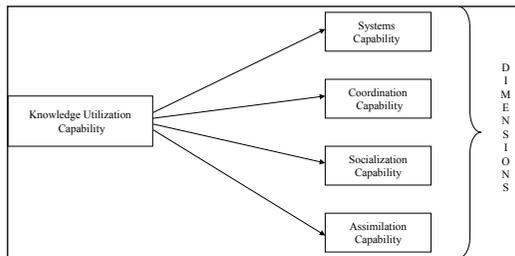


Figure 1: Knowledge Utilization Capability and its Dimensions

9.0 Conclusion:

Hence, the Knowledge utilization capability and its dimensions are typified from the literature and explained in this paper. This elaborates on knowledge management discipline and has practitioner and future research implication.

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