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A KNOWLEDGE POSITIONING FRAMEWORK OF ORGANIZATIONAL GROUPS

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ABSTRACT

This research offers a knowledge-positioning framework that allows for incorporation and recognition of the many forms of knowledge at work in organizations. Early frameworks aimed at representing and unifying organizational knowledge, are used as a basis for a more connected knowledge framework. From an academic perspective the research builds on established theoretical work in the area of organizational knowledge, which calls for a more integrated and all-encompassing view to be taken of both organizational knowledge and organizational knowing. Case material on the knowledge management activity at two medical device organizations (referred to as Case A and Case B hereafter) is used to illustrate various points within the conceptual design.

KEYWORDS: Knowledge Management Theory. Knowledge Based View of the Firm. Knowledge Strategy.

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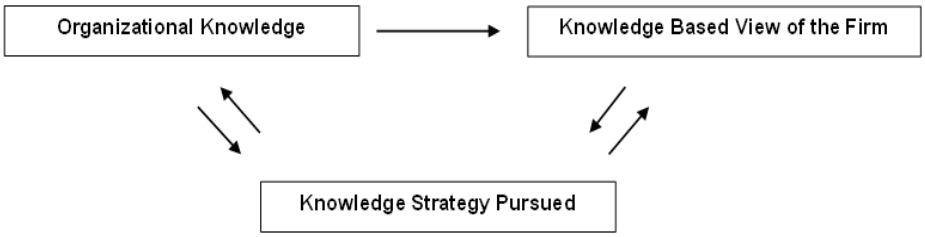
1 INTRODUCTION

This paper is divided into nine sections. Following this introduction section, Schultze and Stabell's (2004) framework, which is the founding principle for this paper, is presented. Sections three and four discuss the first two elements of knowledge strategy, organizational knowledge and the knowledge-based view of the firm, and the dichotomies that exist in the extant literature. Section five draws on O'Brien's (2013a, 2013b) case studies, which look at knowledge activity at two medical device companies, to discuss the existence of multiple knowledges within organizations. Section six discusses the final element of knowledge strategy, that being the actual knowledge strategy pursued; this is also discussed in light of exploitation and exploration activity being conducted at Case A and B. Section seven proposes a framework for positioning multiple knowledge groups within an organization. Section eight returns to Case A and B and a mapping of various organizational groups on the knowledge strategy-positioning framework. Section nine features a brief conclusion and calls for future research.

Organizations are structured around many understandings of knowledge; whether that be power, knowledge as meaning, knowledge as an asset or knowledge as process, these knowledges co-exist through the many informal networks that make up an organization. However, Schultze and Stabell's (2004) review of knowledge management literature and their resulting framework shows a different story emanating from knowledge-based research. The framework reviews knowledge based research's gravitation toward contradictions, opposites, poles and dualisms, citing how organizational knowledge elements are often represented in an "either/or" language. This leads to the potential benefits from mutuality being overlooked and in many cases, a trading of broad perspectives for bias. Knowledge strategy theorists, just as in knowledge research in general, regard knowledge as either objectively or subjectively based; this in turn has led to an over emphasis on either the process or asset aspects of knowledge strategy (Grant, 1996; Spender, 1996a, 1996b). Secondly, Schultze and Stabell (2004) investigate the role knowledge and knowing play in the organization and propose a unification of the literature under the term duality. A more connected perspective of knowledge strategy, discussed in this paper, enhances Schultze and Stabell's framework by incorporating the knowledge elements specific to knowledge strategy and in doing so proposes a novel way of representing knowledge strategy that recognizes the differing views on knowledge and the management of knowledge that are present

in an organization at any one time. Knowledge strategy, as shown in figure one, is comprised of three main components; firstly, organizational knowledge; secondly, the knowledge-based view of the firm, which is the contextual setting in which knowledge strategy occurs; and lastly, the actual knowledge strategy pursued in terms of how organizations close their knowledge absences and gaps. Knowledge strategy is a continual trade off between managing and allocating subjective and objective knowledge, people and technology, and the knowledge-based assets and processes of the organization (March, 1991; Zach, 1999, 2005).

Figure 1 - *Components of a Knowledge Strategy*.



Source: Schultze & Stabell (2004)

Within management theory, organizations are seen to focus on either the knowing activity (Spender, 1996a, 1996b; Cook & Brown, 1999; Orlikowski, 2002) or the possession of knowledge (Grant, 1996, 2002; Teece, 2001). The knowledge-based view of the firm is divided along the same dualism lines, with the majority of theorists viewing organizations as operating within a neo-functionalist or constructivist perspective (Schultze & Stabell, 2004). An organization's dominant position in relation to how it views itself as a knowledge-based firm and how it views its own organizational knowledge dictates the knowledge strategy pursued. Here the dichotomies within knowledge strategies are an organization-level choice; with organizations choosing to divide their attention between exploitation and exploration (March, 1991).

The justification for this paper lies in the futility of attempts of KM, as a discipline. It has been somewhat limited in its attempts to comprehend its underlying and fundamental concepts; in essence, it is striving to manage what it does not fully understand. Some authors in the area who have studied the concept of knowledge and management have realized that the terms are indeed mismatched (Alvesson and Karreman, 2001) or have been too broadly used (O'Brien, 2013a). What is needed is a classification of the types of knowledge that, firstly, can be managed and, secondly, impact on organizational performance and even classification of the types of KM.

Researchers seem to have difficulties in defining what knowledge within the organization is and "black box" the issue (Moffett and Hinds, 2010; Alvesson and Karreman, 2001). Writing in the area of KM comes from both academic and practitioner sources with some seeing the field as one driven by consultancy companies rather than academic research in which there is a disconnect between the theory and practice (Wilson 2002). Each needs to inform the other sufficiently. The field of KM does however, originate from a worthy base – an economically fuelled recognition of the growing importance of knowledge as an input to the organization when compared to the traditional material inputs "*as free natural resources and cheap labor are exhausted, the last untapped source of competitive advantage is the knowledge of people in organizations*" (Davenport, 1997: 191).

2 THE SCHULTZE & STABELL FRAMEWORK

Within Schultze and Stabell's (2004) framework, in table one below, knowledge-based research is presented as existing in one of four quadrants: the dialogic discourse, the critical discourse, the constructivist discourse or the neo-functionalist discourse. A level of socially based consensus controls all four quadrants. Both the critical and neo-functionalist discourses are representations of the dualisms and objectified language found in the literature. Conversely, the dialogic and constructivist discourses are depictions of the increasingly subjective views of knowledge research. Each quadrant represents a different metaphor of organizational knowledge, this is expanded further within the framework to encompass the role knowledge is perceived to play in the organization as well as existing theories which subscribe to these views.

The framework proposes a linking of the varying perspectives on organizational knowledge under the term duality, which the authors cite as applying "both knowing/and thinking", however, the term duality also refers to "opposing forces that act simultaneously on the same phenomenon" (Robey and Boudreat, 1999, cited in Schultze and Stabell, 2004). Schultze and Stabell's (2004) framework also contends that knowledge-based research cannot transcend across quadrants, thus implicitly limiting the framework's ability to represent literary unification and therefore a truly connected approach to knowledge strategy. Thus it is not apparent that the term duality represents connectedness in the true sense of the word, prompting

this paper's re-interpretation of knowledge strategy under a more all-encompassing term: "connected" (p. 556).

Table 1 - Dualism and Duality in KM Research

	Duality	Dualism
Dissensus	**Dialogic Discourse:** **Metaphor of Knowledge:** Discipline **Role of knowledge in Organizations:** Deconstruction of totalising knowledge claims, creation of multiple knowledges **Theories:** post structuralist, feminist theories, post-modern theories	**Critical Discourse:** **Metaphor of Knowledge:** Power **Role of knowledge in Organizational underclass:** reformation of social order **Theories:** Labour process
Consensus	**Constructivist Discourse:** **Metaphor of Knowledge:** Mind **Role of knowledge in Organizations:** recovery of integrative values, generation of understanding **Theories:** structuration theories, theories of practice, sense making, actor network theory.	**Neo-functionalist Discourse:** **Metaphor of Knowledge:** Asset **Role of knowledge in Organizations:** progressive enlightenment, prediction, optimal allocation of resources **Theories:** resource- based view of firm, transaction cost theory, information processing theory, contingency theory.

Source: Schultze & Stabell, 2004, p. 556

3 PERSPECTIVES ON ORGANIZATIONAL KNOWLEDGE

As stated, how an organization regards its organizational knowledge is an important element in the creation of an overall knowledge strategy. Organizational knowledge and knowing literatures centre on the objective and subjective divide. Essentially, the objective and the subjective divide can be understood as the difference in grammatical terms between the verb to know (verb: action, doing and practice) and the noun knowledge (noun: things, facts). Authors within knowledge strategy areseen to adopt one stance or another (Grant, 1996; Spender, 1996b); recently, however, the trend has moved toward commentary on the debate (Cook and Brown, 1999; Orlikowski, 2002) and attempts at reconciliation (Schultze & Stabell, 2004).

Objective organizational knowledge is a cognitive possession and commodity; it is static, taxonomic and positivistic. Knowledge types are categorized according to these asset-based characteristics, while the unit of knowledge is emphasized over the knowing action (Grant, 1996; Sveiby, 1997; Teece et al., 1997; Lloria, 2008). Organizational knowledge is objectified most

succinctly through the categorization of knowledge. In addition to tacit, implicit and explicit (Polanyi, 1962), other ways to categorize knowledge types include declarative, procedural and causal; conditional and relational (Hislop et al., 2000; Lloria, 2008); know-about, know-how, know-why, know-when and know-with (Sveiby, 1997). Chiva and Alegre (2005) refer to objective knowledge in terms of representation and cognitive possession. The empirical qualities of knowledge are the main focus of this objective view that knowledge is emphasized as something that can be possessed by both people and organizations (Nelson and Winter, 1982; Nonaka and Takeuchi, 1995; Grant, 1996; O'Brien, 2013b). The perceived ease of transfer, representation and measurement (Chiva and Alegre, 2005) afforded by the objective view has fuelled in many respects knowledge strategy literature's fixation with the externalisation of knowledge and a subsequent focus on knowledge management systems (McDermott, 1999). Blacker (1995) summarizes the traditional or objective approaches to organizational knowledge as offering, "*a compartmentalised and static approach to the subject*" (p. l02l). In their critique of contemporary approaches to knowledge management, Alvesson and Karreman (2001) refer to knowledge management literature's prevailing view of knowledge as "*objective (justified true belief) and thing-like*" (p. 999). This trend toward the objective in knowledge management strategy literature emphasizes knowledge as something "*explicit that is quite distinct from philosophy or values*" (Pfeffer and Sutton, 1999, p. 92).

Within the subjective view of knowledge, the act or practice of knowing takes precedence, a constructivist perspective is adopted where knowledge is seen to be both dynamic and emergent in nature, while the social aspects of the knowing process are emphasized (Spender, 1996b; Spender and Scherer, 2007). This subjective view of knowledge focuses on the emergent and latent qualities of knowledge, such as "*the traditional conceptions of knowledge as abstract, disembodied, individual and formal are unrealistic*" (Blacker 2004, p. 351). Thus, knowledge is understood to be a creating act, not solely a representation. This creating act is referred to as knowing or practice, where "*practice refers to the co-ordinated activities of individuals and groups in doing their real work as it is informed by a particular organizational group or context*" (Cook and Brown, 1999, pp. 386-387). The subjective view of knowledge reflects the personal element of knowledge inherent in the original intentions of Polanyi's (1969) work, namely that "*the ideal of a strictly explicit knowledge is indeed self- contradictory; deprived of their tacit coefficients (personal to the individual) all spoken words, all formulae, all*

maps and graphs, are strictly meaningless" (p. 195). The subjective viewpoint sees knowledge as situated in practice. Research in this area includes the study of communities of practice (Brown and Duguid, 1991), activity systems (Blacker, 1995; Spender, 1996b) and network and relational effects (Dyer and Singh, 1998; Lane and Lubatkin, 1998). This points to the importance of community or social membership as a context for knowledge generation and combination. Researchers have called for a move away from the dominant-objective focus on organizational knowledge literature and to move toward a focus on organizational subjective knowing include McDermott (1999), Orlikowski (2002), Moffett and Hinds (2010), and Moffett and McAdam, R. (2006). Spender (1996a, 1996b) among others argues that knowledge should be regarded as neither an "observable" nor "transferable" commodity, and therefore cannot be discussed in objective terms.

4 PERSPECTIVES ON THE KNOWLEDGE-BASED VIEW OF THE ORGANIZATION

Strategy debates concerning knowledge increasingly centre on whether the knowledge-based view of the firm represents a new theory of the organization (Eisenhardt and Santos, 2001). If knowledge is to be the basis for a theory of the firm, it stands to reason that a consensus on the nature of this knowledge should be reached. It is here, however, that distinctions can be drawn among knowledge-based approaches. Certain researchers argue that the knowledge-based view of the firm results from the development of the resource-based view by extending our understanding of the term resource to include intangible assets such as knowledge (Grant, 1996; Conner and Prahalad, 1996; Grant, 1997).

The Neo-functionalist focus is on tacit elements of knowledge resources due to the problems of imitability and transferability conferred by the specific characteristics of tacit knowledge. These characteristics, therefore, give the organization a knowledge-based advantage above what could be achieved by the market. Emphasis is also placed on the importance of the co-ordination aspects of these knowledge resources. A balance is thus required between the need to co-ordinate knowledge specialists through integration, while also protecting the valuable tacit components of their knowledge (Grant, 2001). The view taken of knowledge by these theorists reflects the objective view of organizational knowledge where knowledge is discussed in terms of being an asset, a stock and a resource, and is capable once externalised and codified of being

transferred with little importance placed on contextual issues. Thus the problem of a knowledge strategy for those coming from the resource perspective becomes the protection of individually held tacit knowledge and the hierarchical integration or co-ordination of knowledge specialities, but is therefore aligned with the organizational goal of achieving competitive advantage (Grant, 1996; Spender and Scherer, 2007).

The Constructivist perspective contends that the knowledge-based view of the firm should be inherently different from the resource perspective (Kogut and Zander, 1995; Spender, 1996b; Spender and Scherer, 2007). From the constructivist viewpoint, organizations exist because they exhibit a greater efficiency than the market at generating and transferring knowledge through relational systems; thus organizations are regarded as "repositories of social knowledge" (Kogut and Zander, 1995, p. 76). The view taken of the organization is that of an open system, co-evolving with its environment and engaging in knowledge creation through links between autonomous knowledge-creating systems, be they individuals, teams or organizations (Spender, 1996a, 1996b). The focus of the constructivist perspective lies in social systems. Researchers align closely with the organizational learning perspective (Levitt and March, 1988; Levinthal and March, 1993; Eisenhardt and Santos, 2001) and their work can be likened to the more subjectively based community-of-practice approach (Brown & Duguid, 1991; Wenger, 1998, 2000) and evolutionary or capabilities approach (Kogut and Zander, 1992). From an evolutionary approach, Kogut and Zander (1992) regard knowledge creation within the organization as a path-dependent phenomenon and thus the result of the exploitation and imitation of existing organizational capabilities. Both Spender and Kogut and Zander echo Nelson and Winter's (1982) early evolutionary theory by citing the importance of collective organizational knowledge, whereby the organization has a role independent of individual organizational members of knowledge creation, capture and storage or memory (March, 1999).

5 KNOWLEDGE AT CASE A AND B

The knowledge-based literature is divided in relation to the view of knowledge held by various theorists; the same is not true of organizations themselves. Within organizations, multiple types of knowledge and knowing exist, which in turn leads us to believe that multiple types of knowledge based co-ordination also exist, differing across groups, communities and networks,

within any one organization. O'Brien's (2013a) case on knowledge activity at Case A and Case B offers significant examples of multiple knowledges and perceptions of knowledge at work in an organization. Upon investigation the author cites these organizations as developing "*multiple knowledge sharing processes and systems within its network*" (O'Brien, 2013a).

As an affront to the threats of globalisation and the increasing need for technical support, Case A and Case B recognize the importance of explicit knowledge management (O'Brien, 2013a, 2013b). One of the main aims of Case A and Case B's knowledge management strategies are to make tacit knowledge more explicit, and thus into an enterprise-wide knowledge; to this end all knowledge related procedures and rules are available to employees in explicit form through organization-wide knowledge repositories. Technology systems play a large role in Case A and Case B's objective and asset-based view of knowledge. Link is a database of problem reports intended to document and distribute knowledge throughout the organization. Case A and Case B have also invested in an employee suggestion system, which receives thousands of ideas per year; approximately 75% of which are successfully implemented. The organizations also recognized the importance of communities of practice as networks within which skill and practice-based knowledge sharing can occur. Case A and Case B also seek to exploit community-of-practice knowledge through Web-based facilitation techniques, pointing to a belief in the ability to transfer and represent knowledge successfully. Training is also conducted through technology, namely the training of hundreds of Case A and Case B contractors through an integrated management solution. Since 2002 both companies have increasingly made their sales and marketing knowledge more centralized through codification. This codified knowledge is available to Case A and Case B employees and partners worldwide. The empirical qualities of knowledge at Case A and Case B are represented as part of the organizations' annual reports, in which knowledge is characterized and measured by elements such as human and intellectual capital.

Case A and Case B view their knowledge practices as embedded in culture and not implemented as a separate and independent effort; this is achieved through continual learning in the Kaizen and lean approaches. The Kaizen system supports practice-based learning by viewing "mistakes as occasions to learn" (Dutta and Chaturvedi, 2005, p. 11). Employees are encouraged to generate ideas and aid in Case A and Case B's evolution. To this end, emphasis is placed on the personal approach to knowledge creation and the development of hands-on experience

through action learning (learning-by-doing). One-on-one training takes place through an apprentice program, known as the mentoring system. This practice-based training continues to the group level, where new groups are joined by extremely skilled, older worker groups. Case A and Case B recognize the importance of facilitating communities of practice for the sharing of knowledge processes and practice- and skill-based dissemination; this is achieved by identifying the role played by self-organized human interactions (O'Brien, 2013a). Case A and Case B also practice knowledge openness within its value chain, by viewing production and quality knowledge as non-proprietary; for example, free-of-charge problem-solving consultation is offered to suppliers, who then showcase the results of the process to any other interested suppliers. This openness allows for knowledge dissemination and proliferation. This also facilitates the building of long-term knowledge-sharing relationships with value-chain members, allowing for the sharing of skill and practice-based knowledge. Skill- and process-based knowledge acts as part of Case A and Case B's knowledge base through the Case A and Case B education system, namely the learning management philosophies "70/20/10" and "Link" systems, respectively.

6 THE KNOWLEDGE STRATEGY CHOICE: EXPLOITATION OR EXPLORATION

All knowledge strategy is in essence a search process, be that a search for new technical knowledge or new organizational forms (March, 1999). Knowledge search activity allows for organizational self-adaptation, which in turn closes knowledge and thus strategic gaps (Zack 1999, 2005). Knowledge strategy therefore aligns with March's (1991) discussion on the constant trade off that exists between exploitation and exploration. Organizations face the choice of dividing attention and resources between two alternative strategies, these being the path-development exploration of new possibilities or the path-dependent exploitation of old certainties (March, 1991; March, 1994). Importantly, when knowledge strategy tendencies are investigated, exploration and exploitation activity are shown to be influenced by knowledge co-ordination mechanisms (Tushman, 2003) and dominant knowledge perspectives (Levinthal and March, 1993). These links are discussed in figure two. Exploitation and exploration result in changes to organizational forms, optimal production methods and innovation implementation methods among other things. Within innovation literature authors have cited knowledge as at risk of

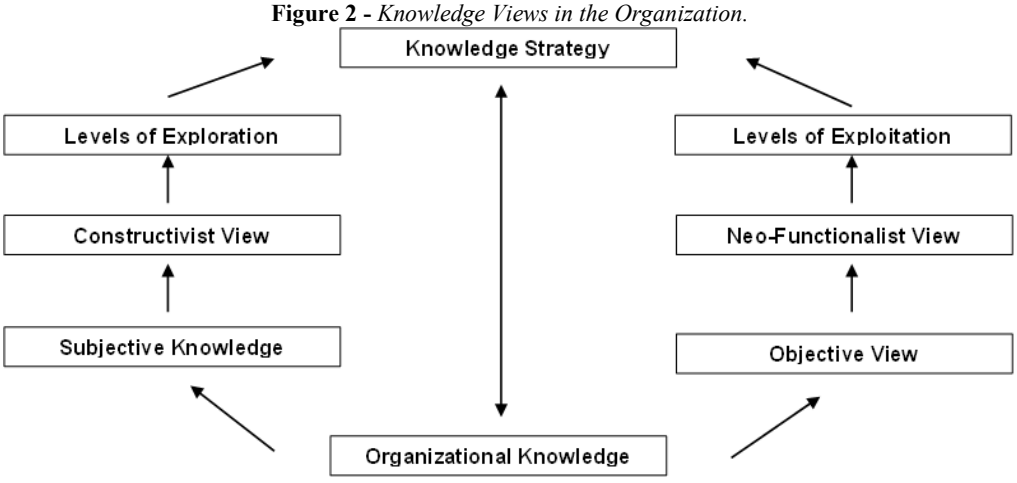
suffering from obsolescence due to ever-changing environments (Eisenhardt, 1989). Conversely, knowledge is more valuable as shown in other research, the older the innovative process (March et al., 1991).

Exploitation refers to a concentration of search activity on technologies similar to the searching organizations' own core knowledge and is seen to include the re-use of technology already internal to the organization through experiential refinement and the selection of existing routines. Added to the exploitation search domain is the dimension of search depth (Katila & Ahuja, 2002), which refers to how deeply an organization re-uses its existing knowledge. Exploitation facilitates competence building through a recurrent concentration on areas of established organizational competence (Baum et al., 2000). It benefits from increasing returns, to scale, in that local search in one area renders all other local searches in that area more efficient (Levinthal & March, 1981), relative certainty, in that inventors learn from past mistakes (Fleming, 2001) and it also facilitates the development of absorptive capacity (Cohen & Levinthal, 1990). Exploitation results predominantly in incremental innovation (Nelson & Winter, 1982) with examples including incremental organizational change (Kelly & Amburgey, 1991), mergers and acquisitions (Ginsberg & Baum, 1994), technological choices (Stuart & Podolny, 1996) and strategic alliances (Simonin, 1997; Gulati & Gargiulo, 1999). An organization focus that is biased toward exploitation risks an inability to develop new capabilities, new opportunities, an over reliance on subjectively framed outdated experience and therefore obsolescence (March, 1994). In effect, success can lead to a situation where exploitation drives out exploration. Despite this, however, Kahneman and Tversky (1979) found that even when the perceived value from exploration is greater than exploitation, organizations might take a loss rather than invest in exploration. Organizations that regard knowledge as an object have high use levels of knowledge management systems (McDermott, 1999; O'Brien 2013a, 2013b). These systems of knowledge re-use evidently lend themselves a greater level of path-dependent activity and exploitation.

Exploration takes place in technological domains far removed from its own core technologies, through planned experimentation (Levitt & March, 1988; March, 1991; Baum et al., 2000; Rosenkopf & Nerker, 2001; Katila & Ahuja, 2002). Added to exploration dimension is the facet of search scope (Katila & Ahuja, 2002), which refers to how widely an organization explores technologically distant landscapes. Exploration is the main driver when achieving

competitive advantage (Levinthal & March, 1993) and has been shown to aid in the creation of architectural competence (Henderson & Cockburn, 1994) and dynamic capabilities (Teece et al., 1997), due to its ability to result in radical innovations. Examples of exploration include, university-industry partnerships (Laursen & Salter, 2006), partnerships with government agencies and independent inventors (Katila, 2002). Levinthal and March (1993) recommend an exploration strategy whereby organizations explore the successful explorations of others; however, as they state exploration is a system-wide phenomenon and such a strategy would result ultimately in a decrease in the amount of technologies available for exploration. An organization focus biased toward exploration incurs many of the costs associated with search and experimentation without gaining proportionate benefits due to the public-goods nature of the results of exploration (Levinthal & March, 1993; March, 1994). Exploration requires a certain level of risk aversion, which is linked to time and cost barriers; however, this also implies increased rewards (March, 1994). Organizational groups that regard knowledge in the subjective sense, and thus focus on the facilitation of community and network-based conditions, are likely to find their ability to conduct exploration enhanced (McDermott, 1999) through increased boundary spanning activity (Leonard-Barton, 1995). Under regimes of decentralization with regards to R&D activity, organizations also show increased ability to engage in exploration (Tushman, 2003), as demonstrated by figure two.

Figure 2 - *Knowledge Views in the Organization.*



Source: Tushman (2003)

7 EXPLORATION AND EXPLOITATION AT CASE A AND B

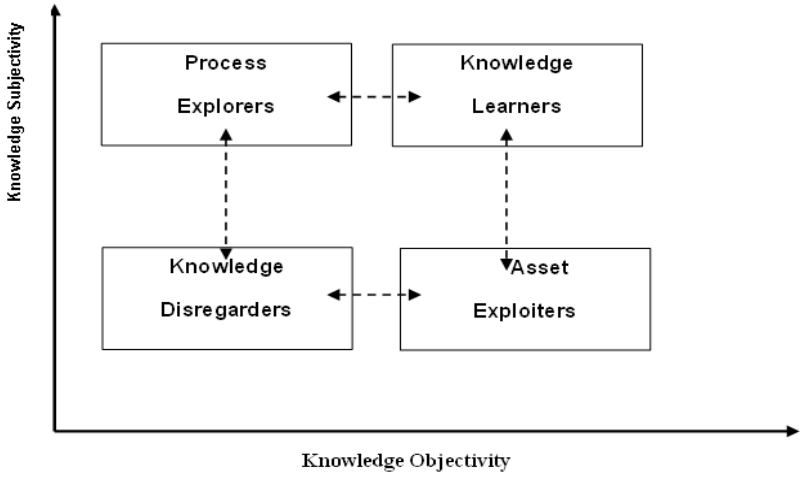
O’Brien’s (2013a) casework on Case A and Case B highlights a combination of both exploration and exploitation activity at the organization. Case A and Case B also demonstrate many of the characteristics of ambidextrous organizations (Tushman & O'Reilly, 2004), in that organization-level centralisation and decentralization is practised depending on the activity in question. This explains in part how exploitation and exploration co-exist harmoniously in Case A and Case B, as decentralized innovation has been shown to enhance exploration levels and centralisation has been shown to aid exploitation activity (Tushman, 2003). Centralized production at Case A and Case B has enhanced the organizations’ abilities to exploit and re-use organizational knowledge. While exploration at Case A and Case B resulted in, among other things, the creation of the world's most innovative medical devices, this development was also achieved through one the fastest development processes worldwide. Decentralized exploration is encouraged annually through the “Innovation Series Lectures”, a series of seminars and lectures open to and provided by all Case A and Case B employees. Exploitation activity at Case A and Case B is more centralized, using organizational learning. Case A and Case B exploitation also focuses on organizational learning through quality circles; refinement therefore leads to fewer problems over time. Customer knowledge management also is held in high regard as a source of external knowledge similar to each organization’s own core knowledge.

8 POSITIONING FRAMEWORK FOR ORGANIZATIONAL GROUPS

Any entity composed of many individual units, as organizations are, cannot be understood by invoking simplistic singular categorizations (Spender, 1996b; Cook & Brown, 1999; O’Brien, 2013a, 2013b) thus a more connected knowledge-based strategy must look at organizations at the community, group and department level. Dominant strategy positions in relation to knowledge can be mapped, but these must bear in mind the fact that organizations at any one time have multiple knowledge discourses at work. At any one time, both exploitation and exploration are competing within the organization for resources with individual organizational groups championing the case of one strategy over the other. This strategy preference is framed in the main part by the group’s position in relation to knowledge (Levinthal & March, 1993). Drawing on the three elements of knowledge strategy discussed in the preceding sections, four possible knowledge strategy positions can be mapped in a more connected Knowledge Strategy Position

Framework in figure three; these are Process Explorers, Knowledge Disregarders, Asset Exploiters and Knowledge Learners. All four strategy positions are mapped in relation to level of regard for knowledge subjectivity and objectivity within the organizational group in question as shown in figure three below.

Figure 3 - *Multiple Knowledge Positions of Organizational Groups.*



Fonte: Levinthal & March (1993)

Those organizational groups exhibiting a high regard for both subjective and objective knowledge should enjoy a sustainable knowledge and innovative advantage based on organizational learning premises and a balanced approach to exploitation and exploration (Levinthal & March, 1993) that incorporates the process and asset elements of organizational knowledge (knowledge learners). Those lagging in regard for both knowledge positions are at risk of knowledge stagnation (knowledge disregarders), as well as low levels of both exploitation and exploration activity and innovation in general. Those groups with a superior regard for objectively based knowledge should exhibit a greater propensity toward an exploitation-based knowledge strategy focusing on the codification of knowledge and re-use through knowledge-based systems; activity within these groups will predominantly result in incremental innovation (Asset Exploiters). Those organizational groups with a higher regard for subjectively based knowledge should exhibit a greater tendency toward the exploration of technologically distant knowledge through a process-and-practice based approach, such as the facilitation of boundary-spanning communities of practice. The activity of organizational groups focused in this way will

result mainly in radical innovation (Process Explorers). It is important to note that organizational groups can change their knowledge strategy position by adopting a new regard for knowledge; for example, knowledge disregarders can move to an asset exploiter's position through the increased recognition of the importance of knowledge as a group asset and the implementation of a knowledge management system aimed at the codification, capture and re-use of group knowledge.

9 POSITIONING CASE A AND B'S KNOWLEDGE

Returning to O'Brien's (2013a) case studies A and B, multiple knowledges have already been shown to exist within various organizational groups. These can be mapped on the Knowledge Strategy Framework. Asset Exploiters at Case A and Case B include the quality circle groups; these groups place a high regard on the codification of operational and production knowledge and the exploitation, dissemination and re-use of this knowledge throughout the organization. Training groups within Case A and Case B represent Knowledgeable Learners; these groups exhibit a high regard for the advantages of both subjective and objective knowledge. Training involves participation in a practice-based Sensei system and exploration activity for those being trained; however the "70/20/10" and "Link" problem databases, and the re-use of the codified knowledge contained within, also represents an essential element of training at Case A and Case B. Development teams at Case A and Case B operate predominantly as Process Explorers incorporating the Kaizen or practice-based learning approach, or the hands-on experience approach, and the personal approach to knowledge creation, all of which facilitate exploration activity. The results of these development teams include such radical innovations as the world's least invasive heart stint. Knowledge disregarders are more difficult to come across at Case A and Case B; however, new contractors and the difficulties they have in first implementing Case A and Case B's approaches to knowledge learning act as examples. These contractors, while they are members of Case A and Case B's knowledge network, have a disregard for subjective and objective knowledge when compared to the knowledge culture that exists in the more established parts of Case A and Case B's knowledge network. Thus, contractors must adopt, among other things, a new approach to engineering leadership, knowledge management, design variations, the development process, and organizational design. Once this is achieved, the

contractor groups can migrate to another position on the connected knowledge strategy framework based on a shift in their regard for organizational knowledge. It is important to remember that all teams within Case A and Case B interact with each other throughout the training, product or service development, and marketing and selling initiatives.

10 CONCLUSION

Assessing one's knowledge clearly is a central goal for organizations to consider in the face of changing market and economic conditions. Being aware of knowledge types in any organisation is important and is a driver for organizations to both adapt and reinvent themselves in the face of these various challenges. In this paper, the author highlighted some of the knowledge types in the case organizations. The insights that are highlighted by the framework also are important for the organisations going forward. The framework is useful as a way for organisations to evaluate the position. The organisation then can adjudicate action to increase knowledge in these areas. Most organizations have some regard for their own knowledge and contain belief in their knowledge networks; this regard varies, however, at the group level in terms of a knowledge focus. This focus changes across groups in terms of the level of regard for subjective and objective knowledge. This paper offers an alternative way of looking at knowledge positioning – one that recognizes the varied nature of the knowledge that exist within any system and potentially acts as a building block for future knowledge strategy positioning empirical work. The paper shows that those organizational groups exhibiting a high regard for both subjective and objective knowledge should enjoy a sustainable knowledge and innovative advantage based on organizational learning premises and a balanced approach to exploitation and exploration that incorporates the process and asset elements of organizational knowledge learners. Future papers in this domain should look to more varied empirical work to further the theoretical claims of this research.

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UM FRAMEWORK DE POSICIONAMENTO DE CONHECIMENTO DE GRUPOS DA ORGANIZAÇÃO

RESUMO

Esta pesquisa oferece um framework de posicionamento de conhecimento que permite a incorporação e o reconhecimento das muitas formas de conhecimento no trabalho nas organizações. Os primeiros frameworks buscavam representar e unificar o conhecimento organizacional, e foram usados como base para um framework mais integrado de conhecimento. Do ponto de vista acadêmico, a pesquisa baseia-se em trabalhos teóricos na área de conhecimento organizacional, que exige uma visão mais integrada e abrangente do conhecimento e do conhecer organizacional. Evidências dos estudos de caso nas atividades de gestão de conhecimento em duas organizações de aparelhos médicos (referenciados como Caso A e Caso B) são usados para ilustrar vários aspectos do projeto conceitual.

PALAVRAS-CHAVE: *Teoria da Gestão do Conhecimento. Conhecimento Baseado na Visão da Firma. Estratégia do Conhecimento*.

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