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Socializing a Knowledge Strategy

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Abstract

Proponents of the resource-based view of strategic management have argued for processes that align organizational knowledge resources to business strategy. In this view, competitive advantage accrues from accelerating organizational learning and non-appropriable knowledge. An empirical approach known as *socialization* counters theories of both institutionalization and "strategic alignment." Socialization enables knowledge strategy through values leadership and practice-led process. Based on organizational structuration, socialization creates enduring, flexible process structures constructed by practice participants. Socialization results in sustainable processes, uniquely configured to business strategy, and more enduring and resilient than adopted or published process structures. Values leadership orients participants toward the goals, meaning, and value of organizational knowledge. Socialized business processes are non-transferable, driven by strategic intent, and oriented to enduring organizational values that protect process integrity. A socialization approach integrates practice-level internal knowledge networks to support business processes and strategy, leveraging knowledge more effectively than institutionalization approaches.

INTRODUCTION

Since Nonaka's (1991) concept of the knowledge-creating company, businesses have attempted to organize knowledge as a resource or asset of the firm, with the purpose of creating competitive advantage based on knowledge. Recent surveys and industry trends show that, after a decade of development of knowledge management (KM) as a technology enabler for organizational learning and knowing, few of KM's original propositions have been fulfilled. Contemporary firms have found Nonaka's model of the knowledge-creating company untenable in practice, for reasons ranging from cultural differences to the changing business climate. The originally envisioned promises of information technology have failed to harness tacit knowledge in any meaningful way and "knowledge sharing" applications have largely reverted to document exchange within the current deployments of organizational portals. But regardless of KM technology overreach, the significant opportunities for competitive advantage envisioned by *knowledge strategy* have been overlooked by modern organizations. Since the advantages of knowledge strategy are not associated with recognized methods for quantifying internal rates of return, consulting practice has also bypassed this opportunity. We find in knowledge strategy a strong theoretical basis with few empirical applications.

Knowledge strategy was proposed by Zack (1999) and others during the period of rapid KM technology diffusion, and remains overlooked by many strategy thinkers. Most research following Zack focuses on strategies for knowledge management, and not knowledge-based strategy. This discussion builds upon Zack's proposition and explicates the relationship of knowledge resources and processes to competitive *business strategy*. The relationship of organizational knowledge to competitive advantage is often noted, but poorly operationalized in research and practice. The following discussion presents an operational model based on organizational knowing, processes, and values. An empirical approach known as *socialization* counters the popular theory of "strategic alignment." Instead, this treatment develops a model of enabling knowledge strategy through values leadership and practice-level socialization.

Recent research revises Nonaka's and Zack's models and suggests strategic applications of the basic theories behind knowledge management. This body of work draws together theory and observation in applications to business strategy. Penrose's (1959) theory of strategic growth underpins the notion that superior knowledge resources enhance the firm's competitive position. A well-established line of thinking and research extends from Penrose through Nelson and Winter's (1982) evolutionary economics theory to current strategy research (Grant, 1996, Zack, 1999, Venkatraman and Tanriverdi, 2005). This school of thought views the firm as a collection of dynamic capabilities that create and integrate knowledge as a necessary resource for competition. A major goal of business strategy drawing from this *internal* perspective is to develop dynamic capabilities that effectively respond to changing, *external* market trends and competitive conditions.

While management research has explicated a meaningful association between strategic growth theory and knowledge practices, a daunting gulf of execution is found in management practices. Theoretically sound research does not necessarily inspire leadership action. The linkages between knowledge strategy and organizational leadership are rarely described empirically, with some notable exceptions (Winter, 1987). While Nonaka's (1991) research presents extraordinary observations from Japanese business culture, there are cultural determinations and organizational barriers in the application of such models in different business climates and organizational cultures.

Rescuing Strategy from Knowledge Management

Knowledge management (KM) developed within industry from the converging trends of management theories of organizational knowledge and the rapid diffusion of cost-effective information technology (IT). The influential convergence of technology overshadowed the management theories, which remain underappreciated in firms that deployed KM, expecting to build knowledge-creating organizations. We find almost no current research or even case studies reporting the effectiveness of organizational knowledge strategies *sans* IT. Yet research from a sociology of knowledge perspective shows the static models of knowledge adopted by most technology frameworks are inadequate at best (Orlikowski, 2002), and may be ill-conceived for the purposes of dynamic organizations.

Failed knowledge management initiatives are common, if not legendary. Obviously failures are not as widely publicized by firms as "successes," which are often merely those projects succeeding by fact of their completion. From the very start, KM technology suffered difficulties with organizational adoption and business purpose. Chae & Bloodgood (2006) report a meta-analysis of KM-related initiatives (including IT and organizational change initiatives), finding more reports of KM failures than success. Also citing Malhotra (2004) and Mertins et al (2001), they report a study across more than 1200 European firms that fewer than ten percent were satisfied with their KM initiatives.

Some critics in information science consider the appropriated concept of knowledge in KM as a meaningless glorification of "information." Wilson (2002) exhausts the published literature to that date in a critical meta-analysis deconstructing the value and meaning of "knowledge" as found in peer-reviewed KM articles. He finds no relationship between Polanyi's (1967) concept of *tacit knowing* and the framing of *knowledge* across the business and information systems literatures. If Wilson is at least partially correct in his analysis, the emphasis on knowledge as a stock/resource may be misleading and widely misinterpreted. He places blame on its highly-visible adoption by management consultancies and the original Nonaka research itself (for misconstruing Polanyi). However, Wilson and other critics also miss the context within which Nonaka's work is presented. While Nonaka correctly cites and interprets Polanyi's tacit knowing, the knowledge-creation cycle has been lifted from context and widely used as a general purpose model of organizational knowledge *management*. Knowledge creation is not a general process applicable to all organizational functions.

Simple explanations readily appear for the "failure" of KM to take hold. Our management theories of knowledge may be wrong, from Nonaka (1991) to Chae & Bloodgood, (2006), untenable and untested. The focus on KM technology may misdirect valuable organizational attention, preventing organizations from implementing valuable knowledge management theory. Or organizations generally lack the thoughtful leadership necessary to deploy *organizationally-centered* knowledge management, a critique that emerges between the lines in Nonaka's own explanations of the cross-cultural differences between KM as found in Japan and the U.S.

Knowledge Management *as technology* cannot resolve or address the paradox of knowledge strategy. In the concept of knowledge strategy, managers recognize the competitive advantage of organizational knowing and learning, guided by strategic goals and constituted in effective internal processes. The paradox emerges when executives envision the strategic value of developing knowledge as a resource of the firm, but have no control, accounting, or valuation of knowledge as an actual asset. The top-down vantage point of (traditional) strategy is unable to generate knowledge exchange within an organization, unlike the control of other assets. Simply put, knowledge does not function as a strategic *asset* (Venkatraman and Tanriverdi, 2005), it cannot be sold or exchanged like a building or plant. Strategically, firms following this model may operate from an unworkable theory.

Another explanation accounts for these and also suggests a resolution. The development of "strategic knowing," or knowledge contributing to organizational competitiveness, is not a matter of cultivating and cataloging knowledge assets. It is based on the dynamic capabilities orientation (Grant, 1996, Teece, et al. 1997), rather than the stock assets view inherent in knowledge management. Strategic knowing is a process of organizational socialization that occurs over time, under the guidance of values-oriented leadership. (While this is not Nonaka's "socialization" as the function of transferring tacit-to-tacit knowledge, the notion of an organizational knowledge exchange is similar).

Reframing the Strategic Context of Knowledge

The argument for organizational investment in knowledge management is based on business strategy, competitiveness based on innovation or market growth. But the essential promises of knowledge management have not been widely fulfilled since the widespread emergence of Nonaka's formative definitions. Management theory appropriated Knowledge Management as way to implement Nonaka's theory, but only to invest in popular technological panaceas that eventually disappointed. IT deployments, KM among them, can delay the difficult changes necessary to accomplish organizational knowledge integration as people focus on the new functions routinized by information systems.

Recent research (King and Zeithaml, 2003) finds the value and leverage of knowledge resources highly variable by industry and organization, and a generic set of knowledge resources will not be competitive across industries. Competitive *specific* knowledge, non-appropriable processes and capabilities, are not amenable to development using a common method across firms. Therefore, deployment of similar technological (IT) enablers across firms also results in no competitive advantage to any one firm solely due to the change. Venkatraman and Tanriverdi (2005) note that while IT investments have been shown to improve intra-firm performance, IT fails to satisfy the competitive requirements of "rareness, inimitability, non-substitutability." It nearly goes without saying that the best possible outcome with even advanced technology would be a more advanced, but still commonly available, baseline of technological infrastructure. Improving productivity does not necessarily improve competitive position, and at best it supports operational effectiveness and to some extent growth. They argue that knowledge resources may not be accessible using quantitative "content-free" approaches such as R&D expenditures, patent data, or research surveys that presuppose managers' assumptions about organizational knowledge.

We should therefore concede that technology-based knowledge management made promises that were impossible to fulfill, whether due to technology or inappropriate models of knowledge. But the inability to develop a strategic approach to leveraging a firm's knowledge may have more to do with its priorities, routinized processes, and organizational values. In most firms, except the start-up and small, a vast organizational gap stretches between strategic management and knowledge-based practices. The applications of "knowledge" are very different between these organizational domains. In strategic practice, the fundamental definitions and understanding of knowledge, whether possessed by individuals or organization, relate to knowledge as *owned by the firm* as a competitive resource. At the level of *practice*, knowledge remains deeply embedded in individual expertise, localized communities of practice, and unique work processes developed in the course of everyday problem solving. How do we resolve these two differently-scaled organizational knowledge resources?

Observations of product development organizations characterized by continuous knowledge work reveal knowledge functions as an *activity*, not as an asset or collection of identifiable resources. Even the commonly-held notions of tacit and explicit *knowledge* betray this objectification of knowledge. As Orlikowski (2002) points out, Polanyi's (1967) original conception of *tacit knowing* was based in the performance of practice, of know-*how*, not know-*what*, as she claims "enacted – every day and over time - in people's practices" (2002, p. 250). Choo (1998) also promotes the notion of the "knowing organization," based on Weick's (1995) organizational sense-making and organizational learning (Argyris and Schön, 1978). Nonaka (1991, 1996) also speaks of *knowing*, but his core model of the knowledge creation process encouraged a turn toward objectification, which neatly corresponded to the extraordinary diffusion of information technology within the same decade. While this "resource view of knowledge" may have led to the innovations known as knowledge management systems, its impact on competitive business strategy was disappointing. In recent work and interviews, Nonaka clarifies his stance toward the vision for management action As Venkatraman and Tanriverdi (2005) state in their conclusion:

> "The current state of clarity in this area is woefully inadequate if this is to emerge as an important anchor for new perspectives of strategic management. Time is right for making important strides in this area so that we can better understand drivers of organizational success that go beyond tangible assets." (2005, p. 59)

It is no wonder that the promise of "competing on knowledge" has proven confusing in practice. From a strategy perspective (rather than knowledge practices), it appears there are no *objects* called knowledge to manage, no levers to move "knowledge" in this way. However, adapting to the distinctions developed in the concept of "knowing" rather than knowledge fundamentally revises the strategic notion of "competing on knowledge." These are not subtle differences, but instead significant variations that should update our mental models about knowledge management, knowledge strategy, and even "knowledge work."

STRATEGY AND ORGANIZATIONAL KNOWLEDGE RESOURCES

Knowledge strategy is an application of a resource-based, internal strategy directed toward improving competitive performance, as opposed to a school or theory of strategic thought (Mintzberg, 1990, 1994). Essentially this means "competing on knowledge," as opposed to competing by position, growth, customer intimacy, or other relationships to the market that improve or maintain competitive leverage. Knowledge strategy has often been reduced to innovation strategy, under the assumption that innovation is the most knowledge-intensive process in most firms. Some accounts of knowledge strategy develop "strategies of managing knowledge," (Tierney, 1999) which, as explained, result in IT deployment for "knowledge sharing" as document management, and coordinating and cataloging intellectual

property. My account of knowledge strategy is based on the Zack (1999) definition of coordinating intangible resources (referred to as knowledge) toward a planned, sustainable competitive advantage.

But unlike most approaches to competitive strategy, knowledge (or "knowing") is exclusively a resource of the firm, and does not necessarily correspond to industry or market structures. Knowledge, as informed capability, constitutes the core of all competencies. To a great extent, knowledge strategy is a model of competency development. While organizational knowing may be the most *significant* enabler of firm capabilities and non-appropriable processes, but does any firm compete solely on its "knowledge" as a competitive strategy? Most published perspectives of knowledge strategy affirm its enabling relationship to *business strategy*,

The notion of distinguishing a knowledge strategy from business strategy suggests an inherent difficulty of mobilizing knowledge as a business resource. After all, we do not speak of human resources as a competitive strategy. But knowledge has been adopted as such, at least by innovation strategists, if not growth and market/industry strategists. While human and organizational knowledge may be core competitive resources, few firms maintain an active knowledge-based strategy as a practice in strategic management. This suggests one, or a mix of, the following situations in strategic management:

- Knowledge strategy remains insufficiently developed in theory and practice to deploy in competitive business strategy,
- Knowledge has been fully adopted as an internally managed resource and requires no exclusive strategic resolution, or
- Managers largely ignore knowledge resources in strategic thinking and typically focus on competitors, industry structures, and other externalities.

As with most applications to organizational knowledge management, Zack's (1999) approach distinguishes the value of developing tacit and explicit knowledge resources. The central contribution of this approach shows in reciprocal relationship of coordinating KM with business strategy, and aligning and developing knowledge resources as an organizational strategy. Organizational knowledge therefore follows a firm's competitive demands, as the strategic *internal* complement to an externally-facing competitive strategy.

Internally-focused approaches to business strategy (e.g., cultural, learning, organizational) adopt a resource-based view (RBV) of the firm (Penrose, 1959, Barney, 1986) as a theory of growth. Zack (1999), taking this view of "Penrose rents," expresses knowledge strategy as an *alignment* of an organization's knowledge resources to its competitive business strategy, with the aim of leveraging internal resources in the context of external competitive demands. Alignment is viewed as a strategic selection process:

> "How should an organization determine which efforts are appropriate, or which knowledge should be managed and developed?" (1999, p. 125)

The development of the knowledge strategy approach draws from this guideline, suggesting "the most important context for guiding knowledge management is the firm's strategy," and this link, "while often talked about, has been widely ignored in practice" (ibid, p. 125).

Such a link may seem obvious to business thinkers. But the links between business strategy and knowledge are by no means direct. Business strategy is a complexity management exercise, with its focus on markets, risk and uncertainty, growth of market share and profit, product portfolios, customer retention, alliancing, and competitor growth. Organizational knowledge represents complex human issues and practices, such as individual and team knowledge integration, organizational learning, unique and embedded routines and

management processes, intellectual property and intangible capital, and incentives and benefits for knowledge sharing. Given these differential goals and drivers, knowledge strategy decision makers inhabit different organizational worlds from those setting business direction. How should decision makers identify and select investments in knowledge and organizational change with strategic goals set by executives in a completely dissociated context?

Knowledge is viewed as "the fundamental basis of competition" (Zack, 1999, p.145). But knowledge does not arise as a freely available resource; it emerges within and makes sense within a particular organizational culture, is directed toward organizational goals and constrained within contexts of organizational processes and values. Organizational knowledge and values represent competitive resources, since these enable cooperative behavior toward economic development, and resist appropriation or replication by competitors. Therefore even individual knowledge ties deeply to the organizational context, and may be significantly non-transferable outside that context (Barney, 1986). To some extent, individual experts (and their knowing) are not readily transferable to other firms due to their unique expertise drawing from a co-emergence of their learning and knowledge within the organizational context of its development.

Another paradox emerges from the question of where organizational knowledge actually lives. Do we find "organizational knowing" within the person (organizational *agent*), or the organizational *structures* that motivate and generate the knowledge-producing activity of the person? From a strategic management perspective this question is key, since leadership must select the highest-leverage internal investments in an internal strategy. This account proposes a resolution of the paradox in both theoretical and pragmatic terms. The structures of organizational knowing are located in the firm's processes and related community practices. Individual know-how is deeply integrated within these processes, and is also subject to and motivated by individual and institutional *values*. We propose the link between values and processes as a significant, yet missing function in strategic management.

Organizational Functions of Knowledge Strategy

The first decade of knowledge management (1991-2000) started with observations of knowledge used as flow, as knowledge creation (Nonaka, 1991), then recognized as exchange or transfer (Zander and Kogut, 1995). The eventual reliance on IT enablers that popularized the field largely focused on knowledge as an *asset* of organizations (Hall, 1993), an approach which (by definition of asset) converts knowledge into a target of management, subject to budgeting, controls, and procedure. In practice, organizations found knowledge *as assets* to be intangible, unmanageable by classic means of control, and difficult to transfer and apply to concrete situations requiring expertise or innovation. The mistakes made in KM applications were, predictably, those of applying then-current information technologies to the emerging knowledge problems. Technology claims were often based on operationalizing subtle cognitive concepts, such as the "conversion of tacit to explicit knowledge." Other claims, such as searching for unrealized knowledge through data mining, were based on emerging IT capabilities, but were unsupported by empirical research or the original theories leading to such operationalized approaches. This divergence of KM technology from its originating theory eventuated in significant disconnects between claim and operational system.

A more critical perspective of the knowledge management literature reveals knowledge treated as a property contained within individuals, and as a manageable resource expressed in similar terms as information. The common dichotomy of tacit and explicit knowledge as referring to "types" signifies this model in use. The knowledge *creation* cycle (Nonaka, 1991) has been detached to refer to taxonomic types of knowledge, which was not the intent of its originating context (even if Nonaka does describe

knowledge creation as "stock"). Once defined as *types*, categories became appropriated as ostensible resources in information technology and asset management approaches. It remains common in practice to hear of projects attempting to encode tacit knowledge into explicit forms for organizational reuse (Drew, 1999, Tierney, 1999), implicitly referring to knowledge as a stock (Venkatraman and Tanriverdi, 2005).

Venkatraman and Tanriverdi (2005) identify three schools of thought of knowledge adoption in strategic use: As stock, as flow, and as driver of an organizational capability. While all three perspectives offer value as strategic drivers for knowledge, they attest to similar criticisms with the stocks and flow perspectives as cited here. Essentially, the value of knowledge as a strategic assets or stock (from the RBV perspective) is that strategic knowledge stock (per Penrose) are non-tradable, non-imitable and non-substitutable (Teece, 1998). This is often reflected by firms in measures such as research and development spending, which reflects consideration as a cumulative asset base.

From a strategic perspective, knowledge resources are better viewed as an organizational capability, as dynamic practices that create and integrate knowledge (Grant, 1996, Teece, Pisano, and Shuen, 1997, Zack, 1999) and not as ostensible assets (stocks). Theoretical support for this approach draws from Penrose's (1959) resource-based view of the firm in which sustainable competitive advantages accrue to firms that leverage internal knowledge to develop unique, non-replicable routines and processes (Spender, 1994, Grant, 1996). Here the focus is on continuous, dynamic learning practices, as embedded in routines or processes. While strategy cannot quantify the asset value of knowledge as stock, strategy should specifically select knowledge processes to be adopted or enhanced for competitive advantage. This involves the identification of missing or subperforming capabilities and selection of processes and practices that will reliably produce the required performance.

There are few good examples of firms effectively adopting knowledge strategy as business guidance. Knowledge management theories may have launched numerous experimental IT implementations, but managers may not find KM sufficiently motivating to dramatically reconfigure a firm's approach to strategy, planning, and human resources. Organizations are more likely to take incremental steps toward a knowledge-based business strategy, an approach which treats valuable human-centered knowledge as one of many "intangible" resources. Since Porter's (1980, 1998) ideas remain influential in corporate strategy, we might also expect to find a continuing reception of resource-based strategy as a complementary or supplemental approach.

In many Western firms, adapting resources and initiatives to an emergent or learning-oriented strategic models may incur significant risks in operations and management disruption. There are several reasons for this assertion, ranging from the difficulty most organizations have in designing competitive strategies, to the disruptive shift caused by significant changes in strategic goals, to the need to re-educate or replace management to accomplish and execute a knowledge-based strategy. Investment in enhancing the dynamic capability of processes (and the people participating in those processes) can be incompatible with cost drivers (as found in most process re-engineering). Although process re-engineering (Davenport, et al, 1990, Hammer and Champy, 1993) has been widely misapplied since its inception, cost-based process redesign continues as a common business response, arguing against a process-oriented knowledge strategy. Reviewing the originating claims of business process re-engineering (BPR), its model suggests substantial value as a type of process-based knowledge strategy. This view has been supported by current research into process redesign as strategy (Wu, 2002) and has matured to embrace knowledge-enabled BPR applications (Heusinkveld and Benders, 2001).

As with other trends in popular management, or "management fads," the originating theories and unique real-world applications of those theories had significant merit. However, general applications of such theories may often fail in practice, essentially proving the strategic knowledge claim of non-transferable

processes and inimitability. Even a cursory review of the successful implementations of knowledge creation (Nonaka, 1991, 1996) and BPR reveals potential conjoint factors influencing the successful cases, such as national and organizational culture, organizational need and commitment, the fortunate coordination of such initiatives to compatible business strategy, supportive organizational values, and so on. Organizations are laboratories of social complexity, but published accounts typically distill theoretical claims beyond the pragmatic applications that proved the original claim. The real-world applications in actual firms show mixed results.

Research indicates that competitive advantages are created by the very uniqueness and embeddedness of firm-specific processes that generate market growth and are difficult to transfer. We should not expect business or knowledge strategy to be any more transferable than successful processes. In fact, strategic management is a type of knowledge-based process, subject to the same factors of uniqueness to firm, leverage of specialized internal resources, uniquely motivating values, and significant inimitability. Strategy is always a "custom solution" to a business problem.

Yet the purpose of research is to learn from observations and develop reliable accounts to enable further learning. We must make generalizations from particular cases that correspond closely enough to theoretical models to suggest general working theories of pragmatic strategic practice. We find from the history of these theoretically-driven approaches to management strategy two strategic knowledge functions of every organization: processes and values. Many organizations modify their processes to adapt to changing market drivers or strategic intent, and it may be the most common lever employed in implementation. Top-down process change, while necessary, is insufficient.

Processes carry the organizational values and expectations for the internal customer served by the process, as well as individual and practice values of process participants. Therefore all constituents of an integrated, interconnected process are affected when the practices and routines used in that process change. But the most significant overlooked factor may be the difficulty in changing embedded organizational values within processes, that tend to maintain an operational status quo (Jones, 2002) regardless of the process mechanics. Organizational values determine the priorities upon which decisions are made (Christensen, 1997, Oliver, 1999, Dose and Klimoski, 1999), implicitly constraining the range of practices and filtering the opportunities available in new practices.

Resource-Based Strategic Perspective

Before the rise of two knowledge-based trends in business (innovation and knowledge management), popular approaches to strategic planning adapted Porter's (1980) Five Forces model of strategy. Porter's model was based on competitive positioning within an industry structure to generate monopoly rents. Firms defined strategy based on five positions within their markets, based substantially on a stable, knowable field of competition.

While a resource view strongly implies a coherent internal knowledge strategy, observations and popular articles show most firms operate from and within an industry-facing, Porter (1980, 1998) perspective based on industry structure, positioning, and external competition. One need only to consider the extraordinary rise of mergers and leveraged financing of global and large national firms in the first years of the 21st century. The Five Forces perspective continues to dominate popular business thinking, and more importantly, in the guidance of execution. If we evaluate the models of knowledge strategy in the context of contemporary business conditions and even cultures, these two approaches appear to be incompatible in theory and practice.

Nelson and Winter (1982) and Teece (1984) were early critics of Porter's external "industry" view, holding to a model of strategy based on internal resources of the firm, of which knowledge can be considered among the most significant. More recently Spender (1994), Kogut and Zander (1996), Grant

(1996), and Zack (1999) further developed theories and dynamics of knowledge-based resource strategy, drawing from Penrose's (1959) theory of the growth of the firm. Penrose's observations were significant contributions to strategies of economic value, from empirical explanations of growth dynamics based on leveraging internally-managed resources. Adherents to Penrose promote a view of knowledge and learning as developing unique, non-appropriable routines from practices in the firm that lead to growth, and are sustained due to their effective adaptation to markets.

An essential Penrose notion is that a firm's only competitive advantage rests in its superior adaptation to business conditions by effectively coordinating its internal resources. Most of these resources are considered intangibles, such as competencies, employee knowledge, unique organizational routines, and ability to learn. Penrose rents (the power to extract revenues from markets) were based on the notion that a firm's unique knowledge-based capabilities were economically unfeasible to replicate. Growth is based on coordination of resources (and *learning within routines*) to develop "excess resources" that could be deployed to the market at zero marginal cost, an incentive for innovation and continued growth.

Nelson and Winter's early (1982) proposition held that a firm's strategic knowledge capabilities are developed in collective practice, "embedded in the form of routines and operating procedures, allowed for the possibility that the collective had knowledge which is unknown to any of its members." Spender (1994) identifies how both explicit and implicit knowledge show up socially and individually, focusing on the competitive value of social collective knowledge. Collective knowledge in organizational routines can be viewed as emerging from coordination among resources, a highly context-specific property of the firm's practices, contextually embedded in practices, it cannot be appropriated by competitors or even individuals that leave the firm.

For example, Microsoft has developed unique practices in its forms of software engineering that have been described and copied by competitors. However, the coordination of resources between product lines, staff roles, and deep knowledge of product code, the operating system code, and their internal processes cannot be replicated within a competitive timeframe. To the extent that their product lines remain dominant in the marketplace, Microsoft's knowledge-based collective operations establish a powerful beachhead against competition. Both efficient and "dynamic," refreshed by research, their processes sustain advanced product lines and frustrate competitors through sheer scale of output.

A socialization case study is presented in this chapter from a firm identified as Autoline in prior research (Jones, 2002a). Autoline, like Microsoft, had gained a dominant market position for two decades through the widespread embeddedness of its retail management systems. What had started as an external business strategy for this firm became visibly more internally focused as the dominant product line sustained its competitive position. For two decades, Autoline's strategic perspective was oriented toward growth of its dominant product line beachhead, and its organizational values reflected that orientation. Internal resources were focused on supporting growth of the product portfolio, but not knowledge-based practices. During the growth period, the firm reduced research and development, market research, and new product design capability, even while expanding product lines to meet the growing market.

As the market changed over time, the values espoused by executives also reverted from industry-facing positions to a customer-focused, intimacy perspective. This shift in strategic outlook demanded the coordination of internal responses to the strategy. New executive leadership initiated a clear position of values leadership, focused on customer needs and a radical change to product portfolio targets. This resulted in an intentional shift of values (toward a strong customer-centered values system) and processes (creating new design, sensing, and feedback practices), all as internally-developed resources of the firm.

KNOWLEDGE STRATEGY IN PRACTICE

We turn to practice to consider the feasibility of such a competitive knowledge strategy, aside from theoretical considerations. Competitive business strategy in practice answers the strategic question, "how do we compete?" In popular management thinking, one of three broad orientations toward market competition are employed, growth (or market value), operational effectiveness (or cost reduction), and customer intimacy (or market share). Market growth or overall value through products and services drives innovation; Effectiveness drives internal knowledge sharing and management, to leverage use of knowledge to avoid costly reinvention and churn. Customer intimacy drives innovating services for customers, leveraging customer knowledge, and sustaining revenues through customer retention.

Consider the interactions and possible decisions manifested by the directions of both business and knowledge strategy. If business strategy is to be used as guidance for knowledge initiatives, then which strategic goals are best supported by knowledge? What knowledge resources are best driven by business goals? An illustration of these relationships shows in Table 1, where both strategic orientations are mapped to these three fields of competition.

	Growth and Value	**Operational Effectiveness**	**Customer Intimacy**
Knowledge Strategy	Product Innovation Knowledge Creation Intellectual Capital	Process Innovation Developing Learning Culture Knowledge Sharing	Product Innovation Customer Knowledge Integration Branding Knowledge
Business Strategy	Product Sales Time to Market Distribution Networks Pricing Strategy Patent Leverage	Process streamlining Supply chain mgt Financing processes	Customer retention Customer product needs Revenue growth Alliance strategies

Table 1. Business and knowledge strategy processes.

Table 1 portrays processes (associated with drivers or needs) for the two strategic vectors. The relationships between business and knowledge drivers are simply represented, with explicit orientation to external and internal management processes. The chart is illustrative of the difference in focus and management between knowledge and business strategies. These differences are oversimplified in the table and discussion to clarify the relationship of strategic management to process. In strategic practice, the drivers may be similar but strategies will integrate as many drivers as necessary to respond to competitive demands.

For example, *product innovation* suggests an internal converse of the external business drivers of product sales and customer needs. Knowledge creation may be a necessary internal driver associated with patent leverage or pricing strategy. An organizational learning culture (and *process innovation* in its many forms) may be cultivated to respond to the internal drivers for operational effectiveness. Because process innovation (improvement of internal routine effectiveness) is typically deployed in strategies for improving operational performance, it is more suited as a response to the cost/performance drivers underlying the selection of operational effectiveness strategy than a response to growth demands. Of course, in large, complex organizations multiple strategies may be integrated into a whole plan of

action. The table is meant to distinguish the selections afforded each major driver, within a simplified model of the three common competitive orientations.

In a rapidly changing and globalized business environment, traditional strategic practices (planners and boards) have been jettisoned in large firms, and in many cases these roles have not been realigned to contemporary thinking or research. Reductive (if exhaustive) SWOT analyses and hybrid strategies (product innovation and cost reduction) have sufficed as practice in many organizations. We should not expect knowledge strategy to find widespread converts across boardrooms, even if justified as competitive. The traditional roles of strategy *advocacy* have been largely taken up by management consultants, which are more beholden to quantifiable external or internal strategies, since they cannot efficiently learn and analyze internal knowledge networks.

Some strategy thinkers (Beinhocker, 1999, Collins and Porras, 1996) advocate adaptive strategies, ensuring the organization has a repertoire of action options available to it as population of strategies. Internally-oriented knowledge strategy meets the criteria for an adaptive strategic repertoire, providing as it does a sustainable, organizationally-embedded role for deploying business strategy.

For internal knowledge strategies, substantial organizational investment must be made, and new programs require time and learning of organizational members. Clearly it is more difficult to implement programs considered as potentially "overhead" when external conditions suggest a focus on production. So how do decision makers identify the internal strategic "alignments" to processes that have the highest leverage or influence on the others? What path dependencies might be coordinated among knowledge processes, where one "informed capability" accelerates the performance of other activities in internal value chains? How do the values of decision makers determine the investment in knowledge-based processes?

Strategic Knowledge Integration

Grant (1996) identifies the goal for a knowledge-based strategy is to develop the dynamic capabilities of the firm, to establish organizational responsiveness to changing markets and competitive situations. According to Teece (1998), dynamic capabilities are "the ability to sense and then to seize new opportunities, and to reconfigure and protect knowledge assets, competencies, and complementary assets and technologies to achieve sustainable competitive advantage." Dynamic capabilities turn on *knowledge integration*, in Grant's (1996) view the core function of the firm itself. Knowledge integration is a function of incorporating the experience of knowing and learning into the processes of complex work. A core notion in this approach is the competitive effectiveness of non-replicable routines, which Grant (1991) asserts, as idiosyncratic, scarce, non-transferable resources created and sustained largely by tacit knowledge in the context of production work. Whether by improving routines or complex processes, integration serves the firm by constructing repeatable practices that embody the learning of multiple experts and practitioners. Repeatable, yet often implicitly learned practices minimize the organizational burden of reproducing effective results in innovation or production.

The purpose of knowledge integration is defined as the achievement of flexible integration across multiple knowledge processes. The perspective on knowledge used in strategic assessment now becomes a critical choice. If knowledge is viewed as asset stock (as the KM view typically adopted), integration of stock knowledge leads to IT implementation, knowledge portals, document management. If knowledge is viewed as flow and exchange, integration should lead to new and effective practices and accelerated organizational learning. Following the dynamic capability view, integration leads to coordinating knowledge flows within the practices of currently effective, adaptive routines that produce value for the firm.

Embedding knowledge in organizational routines is made more challenging when the critical knowledge changes rapidly, as in technology industries. Supporting dynamic capabilities calls for a flexible organizational strategy, enabling responsive adaptation to market change while furthering the development of competitive capabilities. The ability to shift the organization when market dynamics change is considered highly dependent on the firm's ability to adapt its knowledge to emerging situations, and to learn collectively.

But knowledge strategy research has not been oriented toward management guidance and practice. While a sound theoretical basis for knowledge strategy has been developed, there are few published applications, perhaps also due to the confidentiality of meaningful strategy. A significant gap remains between theories of dynamic capabilities of the firm and the decisions necessary to energize dynamic capabilities, and to motivate knowledge integration. At some point managers require guidance for using the frameworks to improve knowledge-based processes and firm performance based on the theory and empirical observations developed in this field.

To further anchor knowledge strategy to practical management, guidance is required to identify the best leverage points (factors that have maximum influence with least relative effort) and dependent relationships between these variables. These can be simplified as two working models for these purposes:

1) A working model of dynamic organizational capabilities.

A simplified model that describes the fit of organizational resources, routines, and actions to the firm's goals of knowledge integration.

2) A description of organizational interaction within this model.

A model of the functions or variables within the organizational processes that guides process decisions and practice development.

RPV: A resource-based dynamic capabilities model

Zack (1999) outlines a framework for operationalizing knowledge strategy, but few other published examples are found, leading toward questions of feasible deployment. The Resources-Processes-Values framework developed by Christensen (1997) to guide innovation strategy serves the same purposes of competitive knowledge strategy (within which *innovation* is a candidate strategic process). The RPV model represents a resource-based strategy framework, based on empirical research and application (with theoretical support). RPV enjoys operational credibility due to its development over numerous applications in innovation consulting with large product firms. Because management theory remains inadequate if not successfully applied, this leading *empirical* framework is offered for critical examination and "reverse engineered" back to theoretical foundations to promote a proven innovation model to knowledge strategy applications. This approach is consistent with Mahoney and Sanchez (2004), who suggest a pragmatic turn in management theory, wherein meaning and value are realized from the outcome of actions taken from the strategy. They describe the pragmatic, contextual orientation to strategy development as resolving the dissociation between strategy formulation and implementation. RPV, having been developed empirically as a response to innovation cycles that occur across many industries, meets the tests of pragmatic theory specified by Mahoney and Sanchez (2004).

Table 2 illustrates the RPV framework, identifying types in each of the three dimensions. Resources, (consistent with Penrose) are assets, materials, and business instruments recognized by the firm as valuable. Resources are typically things and assets, identified and managed by common accounting

practices, and can be obtained, transferred, sold. Resources are considered fungible, and are readily obtained and transferred, as opposed to processes and values, which are embedded, non-transferable, and unique. Christensen's model does not explicitly resolve knowledge as a resource, but relies on conventional definitions.

RESOURCES	**PROCESSES**	**VALUES**
Assets, materials that can be bought, sold, transferred. People Technologies Product lines Facilities & Equipment Information Cash & Investments Brand & Corporate identity Distribution channels	Routines & practices that transform resource inputs into value. Personnel Hiring Training, Organizational Development Product Development Project Management Manufacturing Accounting, Budgeting Market and Customer Research Product design & testing	Organizational criteria that underlie priorities and decisions Cost Structure Corporate Reports Customer Interaction Opportunity scale & scope Organizational Culture Espoused Corporate Values Values in use, as practices Ethical actions & statements

Table 2. Resources, Processes, and Values (adapted from Christensen, 1997)

Christensen's model provides reference to a published empirical strategy, to support two arguments: 1) the saliency of values in strategic management, and 2) the relationship of processes and values to practice and leadership. If resources are the firm's objects (nouns), processes are the functions (verbs) in RPV, avoiding the need to define knowledge in terms of object or action.

Processes encapsulate knowing and doing, both in explicit representations and tacit "tribal knowledge." Processes constitute all the types of business, production, and knowledge work practices that are defined methods for coordinating multiple inputs, resources, and labor into internal value and products and goods for sale. They range in scale from those formal, institutionalized business processes to intermediate added-knowledge processes such as product design and development, to informal practices that have been routinized through continual use and learning. Christensen notes that processes, as dynamic organizational capabilities, reveal choices of practices that necessarily exclude other possible choices. The RPV process model suggests that a productive capability represents an organizational investment in a way of performing knowledge work. The development of processes represents a cumulative, expensive set of skills learned over time, which become repeatable, embedded routines, as the "mechanisms through which organizations create value are intrinsically inimical to change" (ibid p. 164).

RPV explicitly describes the function of values, a unique aspect of RPV compared to other models of process or knowledge management. These organizational values are not the motivational platitudes displayed on the walls in headquarters. Values are a significant type of knowledge "asset," as a valuable function for coordinating resources within the firm. Values include organizational knowledge ("how we do things"), individual knowing, community and team-level norms, and govern the details of how processes are performed. As enduring constructs, they define a firm's identity and its style of work life.

An organization's values are complex and often contradictory formations of collective knowledge and organizational priorities, and can be described as "values systems" in the organization. They are a type

of tacit knowledge (Jones, 2002a) and demonstrate individual action (Argyris, 1992) in the organization as *values in-use*. Being largely tacit and contextually embedded, values are difficult to self-disclose as explicit issue or as knowledge, but they influence processes, products, and technologies, and are observable in use (Jones, 2002a, Johnson, 1997). Values systems are distinguished from "value systems," which are defined as networks of value-producing services in a production supply chain network (Parolini, 1999, Normann and Ramirez, 1993).

Values perform significant, if overlooked, functions in growth, innovation, and strategy. There are several categories of values found in operation in organizational contexts (Jones 2002a), but there are consistent *functions* of values that operate regardless of type and level. Values generally constrain and often define *how* people work within a process. For example, professional services firms support sophisticated processes, such as client development, that incorporate long-standing and tacit values that cultivate a desired type of client relationship, as well as more overt requirements relating to communication, billing, and sales. They influence the priorities of work practice and determine the style and presentation of internal deliverables and production outputs.

Values reflect priorities, both of which are often in conflict in organizational life. In work settings, individual and organizational values may be widely inconsistent, and values systems may be internally inconsistent as well. They are not always productive and positive; they may be hidden and anti-productive. People value knowledge sharing in general, for example, but also value career advancement, and may "hoard knowledge" when it can be used for personal gain. Values also embed (and thereby both hide and sustain) counterproductive priorities within organizational units, showing up in dynamics such as inter-departmental competition. Most firms can identify some organizational values, as with an individual's ethical values, that are historically established and inviolable, such as cooperation and respecting peers. Since the assessment of performance to values is subjectively determined, the evaluation of values can be notoriously relative.

Christensen identifies values as the source of all prioritization decisions, which may be generalized to all decisions. From a strategic perspective, values are important because cost structures reflect values and priorities. Markets and projects are identified and selected or disregarded, rapidly and strategically, based on the filter mechanism of organizational values. Theoretically, if an organization could renew and determine its values in practice, these values would redefine the business, its priorities, processes, and interactions with customers. As a strategic functions, values are highly leveraged, since they have some influence on all decisions. If managers could direct organizational and individual values to adapt to strategy, the ideal of "alignment" could be realized. But instead, the problem of deeply embedded values prevents the very possibility of this rationalized approach to organizational dynamics.

THE STRATEGIC FUNCTION OF VALUES

The concept of "values" has been used cautiously in research. Instead of values, the nearly synonymous *norms* (Giddens, 1984) is found in social research, or *principles* in leadership research, with slightly different meanings in those contexts. A value is held by an individual as a meaningful principle from which one responds with action or concern, or a strong preference for a type of behavior. Organizational values are principles and preferences explicitly communicated or espoused, while values *in use* (as theories in use, Argyris and Schön, 1978) are preferences which drive responses and action, but remain implicit.

Values direct an organization's knowing and doing, which affords them an extraordinary (and underemployed) leverage in strategy. Values constitute the underlying beliefs and core principles and

priorities by which organizational and individual decisions are made. Values are the least transferable of resources, due to their embeddedness in non-transferable processes, informal practices, social/occupational networks, and history. In RPV, values are the slowest factor to change, and are also "important to the individual, have effects in a variety of situations, and are comparatively difficult to change" (Dose and Klimoski, 1999).

Values and values systems show a bidirectional valence pattern with respect to strategic management. They *follow* strategic changes over time, as strategies based on significant business realities also change the values systems within the firm. But in current situations they *lead* decisions, by influencing and constraining the range of options available to business strategy. Therefore, firms rarely execute strategic decisions in deep conflict with their current organizational values. In both directions, the change of values systems lags other business changes, since their embeddedness ensures they are perhaps the last organizational function to release from a former enculturated pattern. But the persistence of values ensures they also lead new strategic efforts due to their pervasive influence within current thinking as change decisions are contemplated.

Values (in-use) are resistant to change, due to their social embeddedness within the historical memory and social practices of the organization. They are difficult to change because the tacit agreement necessary to propagate new values requires a structural change not just in normative behaviors, but in meaning, power, and legitimation. Values are too embedded to be managed as organizational tools; *meaningful* changes to espoused, explicit values systems cannot be changed by a committee and just posted to the wall.

Values systems are collections of values within a process or organizational unit that exhibit dependencies or collective relationships. Independent values identified in use may regularly co-occur with similar values or specifically dependent values. When occurring as a values system, the independent priorities or principles may not be easily separable. Consider the values system of "innovativeness," nearly always an aggregate values system. The related values of innovative thinking, creativity, individual excellence, and competitiveness may co-occur in an organizational setting, and recur due to social reinforcement of their performance. Competitive strategy may require transformative change within an organization, and while process changes are often planned, the impact of historical organizational values is not typically foreseen at the level of strategic decision making. Values enable or constrain all other priorities by virtue of history and organizational culture. Values are not functions that can be changed by command.

Values also become anchored within organizational processes throughout everyday performance and enhancement cycles. In processes, the selection of specific operational routines is usually based on organizational priorities and individual work/professional values. These values systems accrue within processes to become inherent values of the process. Innovation management (product design, development, and marketing) are especially sensitive to organizationally embedded values. Barriers to radical innovation in large organizations are found in both overdeveloped product development processes and the associated values systems inherent in successful and long-standing practices. In large organizations, the risks of "creative destruction" of processes and values systems must be weighed against the foreseeable or strategic value of radical innovation. Christensen (1997) and Jones (2002b) empirically demonstrate that large product firms may be structurally unable to radically innovate, partly due to the function of inherited values systems within the current innovation practices.

Christensen (1997) describes the macro dynamics of values in innovation.

> "One of the bittersweet rewards of success is, in fact, that as companies become large, they literally lose the capability to enter small emerging markets. Their disability is not because of a change in the resources within the companies – their resources typically are vast. Rather, it is because their values change." (ibid, p. 190).

Organizational values both reflect and precede the changing approach to competition, shifting preferences from innovation and other knowledge-based strategies to exploiting the growing market. The organizational locus of power shifts from product managers and designers to marketing, sales, and even accounting, champions of the new values that define "success." A recent trend of "high design" in the stable and slow-growing consumer products sector (e.g., Procter and Gamble) does little to dispel this assessment, since design managers are elevated to newly created leadership positions to reflect the strategy. But it remains a continuation of an "exploitation" growth strategy, not an exploration (or radical innovation) strategy. Furthermore, while industrial design is an innovative knowledge *practice* that adds considerable value, the contributions to many corporate brands are often incremental, and in the US, serve to bring American market design values closer to the traditionally more advanced European high design standard. The branded design strategy (while often linked with the language of innovation) largely remains a market-facing instrument of a market exploitation strategy. This current trend should engender more "positive" organizational values than found in examples of other firms deploying customer base exploitation strategies, *leading* future innovations and organizational change due to a larger scale values change.

As strategic choices and associated values spread through the firm during growth, the organization also forms large social networks. As the successful firm embraces more conservative business values over time, they embed into management processes, from market research to human resources, from R&D to sales. As both customer intimacy and margin-oriented values unify with everyday project and product management practice, these values become implicit and more resistant to change. The same values that create team loyalty, organizational purpose, and a shared sense of identity also implicitly limit types of work practices, investments, and customers. Values are considered the ultimate source of decisions (Maslow, 1965, Christensen, 1997, Oliver, 1999). However, being tacit in everyday use, managers cannot easily see these constraints, let alone question their impact.

Integrated Model of Organizational Values

The organizational researcher has multiple classifications of values from which to draw in developing workable models for strategic consideration. We do not suggest one class will produce superior strategic insights over another, since so many social and pragmatic business variables will always intervene with analysis or comparison. The selection of a valid values framework may be considered a lens for magnification of desired aspects and minimization of others. Several models have been developed in support of studying individual values, moral decisions, and orientation to work practice. For example, a human resources strategy might select the frequently-cited Rokeach (1973), or managers might review Dose's work values models (Dose, 1997, Dose and Klimoski, 1999) for guidance on productive team composition.

A small set of values models are widely-referenced across the organizational literatures (e.g., Rokeach, 1973, Dose, 1997) indicating their acceptance and applicability to continuing research. Many researchers adopt Rokeach's definition, and have developed upon this well-accepted model of human values (Rokeach, 1973; Braithwaite and Law, 1985, Schwartz, 1994, George and Jones, 1997). Some researchers have used this prior work as a basis for studying or developing "universal" approaches to human values

(Schwartz, 1994, Ellis and Hall, 1994). As defined by Rokeach (1973), values are “an enduring organization of beliefs,' that are "general plans employed to resolve conflicts and to make decisions." Rokeach’s values model shows personal choice based on appropriate behaviors (*instrumental*) or end states (*terminal*), both of which support personal or socially directed values. Instrumental values generally correspond to the values involved in organizational action, and terminal values to those inviolable or “protected” values (Baron and Spranca, 1997) which hold across transactions and display resistance to trade-offs.

Maslow’s (1965, 1971) values model developed from the psychological model of the hierarchy of needs. Maslow distinguishes between “deficiency” values and the terminal values of being, B-values, which motivate individuals beyond merely personal value. Many of the B-values refer to almost Platonic ideal states, while many others represent non-controversial human and social values such as honesty, justice, and autonomy. Maslow’s work extended the notion of values to embrace a “fusion of facts and values,” and left a legacy of research questions and testable propositions that even today remain unaddressed.

Even Nonaka (1996, 2001) has often spoken of the “foundation of knowledge” as the ideals of truth, goodness, and beauty (Kalthoff, Nonaka, & Nueno, 2001). These represent the terminal ideal values, and correspond to Maslow’s “values of being,” which he asserted were experienced by people as a single fusion of all higher values. Like Maslow, Nonaka’s claims represent an ideal that motivates the expression and exchange of knowledge.

In organizational values research, Jones (2000, 2002a) developed a composite model for use in data collection and analysis, including four families of composites. The composites were constructed both inductively and synthetically from empirical research rather than deductive models based on moral theory. The four families of values systems specified both *individual* (humanistic and design) and *institutional* (organizational and technical) values systems.

Individual values

Design values – Drawn from Friedman (1997), Kling (1996), Kumar and Bjorn-Andersen (1990) and several design studies. Situated in design research, this composite drew from models affecting the design of systems and products, not human values.

Humanistic values – Humanistic values integrated the human values of Rokeach (1973), and incorporated Maslow’s (1971) values framework.

Institutional values

Organizational values – Organizational values constructs were drawn from empirical case studies (e.g., Walsham and Waema, 1994) and mapped to well-supported values models (Crosby, Bitner, and Gill (1990).

Technical/engineering values – Drawn from Kumar and Bjorn-Andersen (1990) and Banathy (1996), these values apply to systems engineering and development practice, the processes of focus in the research.

The organizational values family is of most interest to the strategic function, although the technical values have bearing on embedded values in specific organizational processes. The composition and range of the organizational values are displayed in Table 3:

Organizational values	Range of Attributes	
1. Economic	Profit driven	Socially driven
2. Information as symbolic	Policy focus	Communicative
3. Control/power	Centralized	Distributed
4. Management style	Participative	Autocratic
5. Locus of decision making	Decentralized	Centralized
6. Leadership style	Informality	Formality
7. Communication style	Open	Closed
8. Organizational processes	Structured	Flexible
9. Task coordination	Single way	Multiple alternatives
10. Impact on work	Job enrichment	Isolation
11. Focus of work	Customer focus	Internal focus
12. Social nature of work	Participatory	Non-participatory
13. Team behavior	Cooperative	Competitive

Table 3. Institutional Values Framework – Organizational Values (from Jones, 2000)

Most of these values are easily identified within organizations, and are testable by self-selection within the range of attributes, and by case study and observational research. Values systems occur together within a focus organization, such as "open communication, flexible process, participative management." The attempt to produce a generalizable model negates the variety and range of values that might also be incorporated. The strategic function of values, again, should be to enhance the unique values systems that complement both strategy and organizational culture. A specific values model such as the example in Table 3 may be used to evaluate change from a baseline, or to take measure of specific processes in question as an organizational strategy progresses.

While many researchers extol the virtue of values as positive motivating drivers in organizations, unexamined values may have a significantly negative influence on strategic change. Christensen's (1997) RPV model complements Jones' (2000, 2002a) findings of embedded values in processes mediating new practices toward the form of existing values. Jones (2000) found values function as barriers to innovation due to the resistance of either strongly-held personal values or embedded process values to adapt to organizational demands. Both models present organizational perspectives on knowledge resources for managing innovation. Both assert, from empirical observations, that values underpin organizational decisions and processes, and strategy is guided by and depends on values espoused in decisions and statements of priority. As values are embedded in processes, (and in turn are embedded in communities and social networks), *processes* are the knowledge structures affording opportunity for agency and action.

But effective process change requires knowledgeable intervention and conservation of values consistent with the process participants. Processes must therefore be adapted by the organizational communities whose values are at stake in the organizational commitments and everyday operation of the process. Consistent with Nonaka's (1991) "middle-up-down" approach to management of knowledge practices, a *socialization* methodology coordinates knowledgeable participants and conserves the adaptation of their values. The socialization approach requires understanding and assent from organizational members to fully engage with and adapt the business strategy (to associate the new values inherent in the strategic intent). Socialization generates lateral relationships that support social networks for knowledge creation and maintenance. The virtuous cycle of socialization between process and values recommends a complementary function to strategic management.

SOCIALIZATION OF PROCESSES AND VALUES

How do managers effect changes to organizational functions based on this strategic perspective? We are interested in guiding the diffusion of selected values systems within the organization and within key, leveraged processes. A socialization approach asserts the necessity of process leaders and participants in defining new processes, performance metrics, and deliverables. Socialization also recognizes the need to negotiate changes to embedded values to minimize unproductive (but not necessarily *creative*) conflict. Socialization gains validity from its understood function in other organizational contexts, but also counters the unrealistic passivity implied in its opposing construct, the notion of *strategic alignment*.

The Unrealistic Expectations of Strategic Alignment

A central organizing principle of traditional strategic thinking is the requirement for alignment of organizational resources and processes to a defined strategic agenda and competitive posture. As strategic research continues to develop theoretically and empirically, the assumptions underpinning alignment break down. Two assumptions include:

1. That some agents in the organization can conduct work toward *alignment*, based on a communicated strategic purpose in the organization.

2. The notion that strategy represents a fixed agenda to which resources can be aligned.

Alignment suggests that organizational structures and participants are capable of intentionally adapting to commanded directions and to initiate novel activities consistent with a selected executive vision. It also assumes a top-down hierarchical diffusion of strategy toward which passive actors are expected to metaphorically "align."

Few commentators have challenged this received notion. Without belaboring the implied hierarchical, even military "command and control" model implied in the concept, observations about the function of alignment find no ability to coordinate resources "by alignment" within an established firm. The notion of "alignment to strategy" appears to have entered the vernacular as a rationalization developed from management consulting, not from business research. Consistent with both adaptive and learning strategy models, Ciborra (1998), who calls for a return to empirical investigations of actual practice, calls the alignment concept "bankrupt" as a basis for research.

The Socialization of Processes to Strategy

In terms of organizational dynamics, a function is required that coordinates knowledge strategy through values leadership (top-down) and process adaptation (bottom-up) to enable the virtuous cycle described. The notion of "socialization" displaces strategic alignment as a functional mechanism for such a resource strategy. "Strategic alignment of knowledge" fails in both practice and theory. The abstractions of strategic intent do not match the concrete demands and motivations of organizational practice, of people working within teams and occupational communities. Concurrently, new knowledge in the organization is developed at the level of practice, in projects and production. Top-down strategy has limited access to the contextual knowledge within processes.

Socialization as used here in the context of process agrees with the operational definition cited in most studies (Louis, 1980, Kraimer, 1997), except that typically socialization is considered a time-limited cycle of initiation or indoctrination into an organization. This extension of socialization to a dynamic organizational context, wherein processes and values are created and led by strategic change, we find that Louis (1980) still holds:

> "a process by which an individual comes to appreciate the values, abilities, expected behaviors, and social knowledge essential for assuming an organizational role and for participating as an organization member" (ibid, p. 229).

Socialization of values, capabilities, and behaviors is repurposed toward modifying the routines of ongoing practices, to adapt or create new processes within the organizational community that owns the process. Whereas indoctrination of the newcomer assumes socialization occurs at the organizational level, adaptation of work practices assumes a socialization among existing participants, each of which may display variances among expected values systems. Indoctrinating socialization involves substantial tacit knowing and tacit agreement. The social networking mechanism of process socialization also draws upon tacit knowing and interpersonal and team communication. Socialization encourages the agency of all participants to identify congruence between their values and the proposed routines and structures of the strategic initiative or target process.

Process socialization was developed empirically, as an explicit alternative to top-down institutionalization for the introduction of new knowledge-based practices in the organizations studied in this research. Theoretical support for this approach draws from organizational structuration (Orlikowski, 2002, Orlikowski and Robey, 1991) and social networks in knowledge practices (Liebeskind, et al, 1996). The essential claim argues for practice-level constitution of processes and inscribed values, as two necessary components of process structure. Strategically-motivated processes are constructed by organizational teams and experts most closely involved with the performance of the process. While not all values are shared with management, a shared values system is constructed with management in the specification of deliverables produced in the process. This processual view of strategic change corresponds to the duality of agency and structure, as a *structurational* process (Orlikowski, 2000, 2002).

The theoretical perspective of structuration (Giddens, 1984, DeSanctis and Poole, 1994) explains the evolution of structures in organizations as mutually co-constructed by participants and the structures they define over time, such as business and innovation processes. Individuals and group processes recursively develop structures that produce intentional group outcomes. Both strategic management (typically executives) and practice-level leaders create structures and inscribe associated values in the communication and diffusion of those structures. Participating actors negotiate from agency (and their own values systems) to adapt their personal values and practices to new structures, or to negotiate changes to structures (e.g., business strategy or process).

Structuration further informs the notion that individual values (norms) and organizational values co-evolve with structures. Certain individual values, promoted in practice, survive organizational challenges to become "legitimated" and recognized as reinforcing the values and practices important to strategy. For example, socializing the process of user-centered design in a product organization necessitates a concomitant commitment to new values identified with a product's "user" as a central representation of a customer. Not only are new practices introduced to learn about, observe, and design for the "user," but new values are socialized through distinctions made about the value of users, the business value of user data, and the competitive value of user preference. These distinctions encounter resistance from pre-existing, enduring commitments (e.g., customer) which are negotiated, not replaced. Over time, deeply held values associated with both user and customer are evidenced throughout the organization, creating an organic internal demand for the new process and technical practices associated with the values system.

The Socialization of Values to Strategy

The socialization of processes requires knowledge integration at the level of *practice*. Individuals in defined practices or belonging to practice communities (Lave and Wenger, 1991, Brown and Duguid, 1991) generally hold education and expertise in a skill area (e.g., engineering, design, or planning) as

well as in the business domain. While values disclosure within practice communities evolves over the course of collaboration and knowledge sharing, socialization accelerates deployment across functions and communities. The opportunities to identify and disclose values in-use occur with *values conflicts* during the coordination of activities in organizational processes, working in teams with members of other organizational functions (Jones, 2002a). Both managers and practice leaders must learn to identify and communicate the values conflicts that occur in process redesign and transition.

Given the importance and leverage of embedded values (persistent values in-use), a knowledge strategy should propose alternative values systems within the context of process socialization. Alternatives are represented as new priorities and metaphors for action associated with the adapted process and clarified in the course of everyday decision making. Values alternatives sets may be identified as priorities and key process objectives. Practice leaders (as process owners) serve as stewards of both process and practice-level values, and can take responsibility for identifying competing values systems and negotiating conflicts. The resolution of values conflicts results in integrating the contribution as new learning (knowledge) in responsible processes.

Given the social leverage of values *in-use*, a function of knowledge strategy should be to develop values "alternatives" within the context of knowledge management activities, identified and clarified in the course or everyday decision making. Stewards of these practice-level values can take responsibility for identifying competing values systems and even negotiating conflicts. In management practice, this shows up as "ownership" of job functions or new processes.

While originating with individuals, knowledge and values develop *from* individual knowing and learning, becoming not so much encoded but enculturated in the organization. Through numerous conversations, communication, and enacted practices in the organization (e.g. in design practice, design reviews, product walkthroughs, prototyping etc.), individual knowing, methods and procedures, and values continually exchange through the course of everyday production work. While new organizational routines and resources are introduced into teams and projects through formal training and new methods and practices, they will remain constrained or become diffused by the context within which knowledge is recognized and deployed in the organization.

CONCLUSION

The knowledge strategy perspective does not replace competitive business strategy as practiced; rather it offers complementary guidance within a resource-based strategic perspective. However, traditional strategic planning is regarded as a notoriously poor instrument for long-range business strategy, due to rapid market changes and environmental complexity. The socialization of processes and leadership toward enhanced values systems asserts a more enduring and sustainable path to a desired competitive standing. It is argued that to deploy a knowledge strategy the firm must undergo a significant reconfiguration of the processes and values responsive to strategic intent, to achieve the dynamic capabilities realized by knowledge integration.

Organizational processes are the coordination capacities and defined routines within which individual tacit knowing is located. Processes and routines must be refreshed by knowledge creation and transfer, but not merely within projects or skillcraft practices. To develop non-replicable, competitive knowledge processes, unique practices learned in the "art of doing" must be re-integrated within the overall schema of production and coordination.

Organizational values are institutionalized guiding principles and priorities that influence behavior and decision making. Changing embedded values systems requires identifying the values in-use throughout

the organization or the processes of strategic interest. As opposed to changing explicit company "slogans," the espoused values on a wall plaque, cannot be easily accomplished directly. Consistent with the definition of institutionalization, over time people accept the underlying culture and its values as given. Values in-use might be accessible to intervention if they were not deeply embedded, but they would also be much less powerful in the social functions they also serve, the purpose of orienting action and simplifying decisions based on understood (yet often unexplicated) priorities.

This model proposes a strategic function for values, following a methodology known as socialization, complementary to organizational authority. Overt programs and actions taken by new managers often fail due to the resistance inherent in deeply socialized, highly stable values systems. Any successful attempt to leverage deep knowledge as a competitive strategic resource must acknowledge the existing values systems that reward, enable, and deploy organizational knowing within an intact social system.

Socialization as a management function involves values leadership, including the introduction of new opportunities (career, project, organizational) aligned with values oriented toward the outcome of knowledge practices. The embedded organizational values anticipated to follow socialization should also be considered, since these underlying values systems will persist after socialization, and theoretically until business strategy significantly shifts. While this requires an authentic, long-term commitment, the returns to the organizational culture from the commitment to change accrue immediately.

Values leadership and socialization is important for several reasons. Values set decisions criteria for management and resource deployment. If not refreshed by pragmatic means (i.e. leadership and socialization), the historically embedded values of the organizational culture will maintain the status quo, and revert redesigned processes to a prior state of practice. Values offer a pivotal standpoint for leadership, allowing managers to identify behavioral and practice examples in reference to competitive strategy. By managing to values and not processes, managers empower practice leaders (as teams) to own processes and continually integrate new learning to ensure competitive renewal. Disclosing values in the context of cross-functional process coordination allows participants to assess organizational commitment to strategic goals. People do not respond emotionally to strategies, but they do respond to values and can identify values conflicts. I suggest these conflicts expose opportunities for engagement, dialogue, and reconfiguration of organizational practices.

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