INDIGENOUS KNOWLEDGE AS A STRATEGIC RESOURCE: AN ETHICAL AND SOCIETAL CHALLENGE

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Abstract

Organizations, particularly large multinational firms, have a substantial impact on the economies and societies in which they operate. Unfortunately some far-reaching influences are not anticipated, and, the consequences of these organizational actions can create long-term, adverse outcomes. Increasingly, indigenous knowledge has been recognized as a valuable strategic resource offering rare, inimitable, non-substitutable and effectively commercialized insights for new agricultural, biological, pharmaceutical, and aesthetic products. While the business case for industrialized companies to acquire and use indigenous knowledge is compelling, and the economic results of these activities are highly profitable, the unanticipated costs can be serious and irreparable, particularly for the communities that provided the original knowledge resource. This paper describes the strategic attractiveness of indigenous knowledge and provides examples of unintended, but severe, adverse consequences for the surrounding business and social ecosystems that can result from the use of this knowledge by non-indigenous firms. We articulate the business logic for the use of indigenous knowledge from the perspective of the resource based view of the firm. We then discuss the ethical concept of ‘respect for persons’ and argue that explicit consideration of this principle in the strategic decision making process would illuminate the previously unrecognized outcomes. We use a case example to illustrate how considering both the resource-based strategic value of indigenous knowledge and the principle of ‘respect for persons’ when making choices about the use of these resources would yield more desirable and more sustainable outcomes for both the firm and the indigenous community.

Keywords: Indigenous Knowledge, Resource-based View, Global Ethics
As many have observed, organizations have a substantial but, at times, unacknowledged influence on the broad social and economic systems in which they are embedded (Coleman, 1974; Perrow, 1991; Stern & Barley, 1996). Organizations shift the structure of society through their influences on social life and occupational patterns. They shape the physical landscape through decisions that effect societal patterns from urbanization to immigration to transportation to agriculture. Corporate choices regarding labor, material, technology, information, and related resources and factors of production influence and constrain many facet of life in a global society. Organizations sway political activities through their direct influence on standards of living around the world, and through policies regarding preference or discrimination. Firms influence interactions across networks of activity from healthcare to agriculture to education to state sovereignty, to the strength of the economy. Organizational actions also create cascade effects on the larger society through a process of small wins (Weick, 1984), path-dependent actions (the decisions and options one faces for any given circumstance is constrained by the choices one has made in the past) (Williamson, 1993), and lock-in (Waldrop, 1992). Despite recognition of the pervasive power that organizations, particularly large multinational firms, have on society and the human condition, research focused on understanding, interpreting, anticipating, or deliberately influencing the consequences of organizational activity on the larger social system has been sparse (Stern & Barley, 1996).

When an action is purposefully set in motion, it is generally assumed that the initiator sought or at least accepted the intended and anticipated outcomes. Otherwise the activity would not have been deliberately set in motion (Merton, 1936). Even though outcomes may be viewed negatively by another group of stakeholders, the adverse impact of anticipated outcomes is not a
surprise. Furthermore, it is reasonable to presume that at least an informal cost benefit assessment of both the intended benefits and the recognized liabilities (from the perspective of the action generator) was conducted prior to making a strategic business decision. For example, the loss of green space is a recognized liability associated with increased commercial development and the loss of U.S. jobs is an acknowledged cost associated with outsourcing. These ‘downsides’ are often explicitly considered in the cost-benefit analysis preceding complex business decisions. We refer to these kinds of recognized and anticipated adverse consequences as ‘acknowledged costs.’ To prevent the implementation of business decisions that involve collateral costs that are recognized and accepted by decision makers, those in opposition must generally change the cost-benefit calculations by raising the cost of the adverse consequences from the point of view of the decision maker.

However, many consequences of purposeful social action are unanticipated and therefore, not considered explicitly in the decision making process. At times unanticipated outcomes are a pleasant surprise. For example, when senior citizens became attracted to Nintendo’s Wii and emerged as a dominant market for this gaming system, the unexpected benefit was quickly rationalized post hoc and capitalized upon in revised strategic plans. At other times, however, unintended consequences are negative, severe, and difficult to undo. Unintended negative consequences parallel acknowledged costs in terms of their adverse impact, but they present a much more challenging problem in terms of prevention or reconsideration since their occurrence is a surprise.

Unexpected consequences can arise for a number of reasons such as misreading initial conditions, errors in inferences about causal relations, influence from unexpected sources, poor execution of a plan, an overly narrow or parochial perspective, or mindless behavior that was
purposeful but habitual so failed to account for new contingencies (Perrow, 1961). Merton (1936: 901) argues that unintended consequences generally arise from three sources: ignorance, error, or expediency. Regardless of the lack of intention or expectation, the adverse impact of some consequences of organizational action can be severe for both the firm and the larger society. This situation is the focus of our paper.

This paper examines an important, but largely unrecognized impact of organizational action on global social and economic systems that results from the juxtaposition of current strategic management paradigms designed to help firms achieve competitive advantage in the knowledge economy, with current environmental, societal, and biological realities that are typically considered outside the relevant frame of reference for most corporate decision makers. The resource-based view (RBV) of the firm argues that strategies designed around resources that are valuable, rare, inimitable, non-substitutable, and readily exploited by a firm are a foundation for building competitive advantage (Barney, 1991). The knowledge-based view of the firm underscores the strategic importance of knowledge as a valuable intangible resource that often meets these criteria (Grant, 1996a; Spender, 1996). A firm’s absorptive capacity (defined as it ability to acquire, assimilate, transform and exploit new external knowledge (Cohen & Levinthal, 1990) is seen as a crucial strategic competence for enabling knowledge resources to yield competitive and performance benefits for an organization (Lane & Lubatkin, 1998; Zahra & George, 2002). Indigenous knowledge, often termed as traditional ecological or biocultural knowledge, is “knowledge developed by local people through direct interaction between human beings and nature” that indigenous people use in their everyday lives to sustain their existence (Maragia, 2006: 203). Because indigenous knowledge is created by the iterative interactions and relationships across a community over time as it blends culture, environment, and societal needs,
it is a path-dependent, often causally ambiguous, intangible knowledge resource. Increasingly indigenous knowledge related to health and medicine, agricultural products, and livestock has been found to be a valuable, rare, and non-substitutable resource for products in great demand in markets that are more commercially developed than the source economies. Appetite suppressants, specialty foods, and pharmaceutical products are important examples. The dilemma arises in terms of the ways in which these resources are acquired and exploited.

Observations of various commercial applications of indigenous knowledge suggest that strategic choices have been made that violate the ‘respect for persons’ principle and as a consequence create discord between a firm’s identity and its actions and set in motion adverse consequences that undermine societal well-being. It is not clear whether the societal consequences of applying the absorptive capacity and related strategic capabilities of large, technologically sophisticated, and economically advantaged firms to indigenous knowledge acquisition and commercialization are anticipated but potentially miscalculated, or whether they are unforeseen and therefore, unintended. While the remedies may be different depending on the extent to which societal consequences are foreseen, the analysis presented in this paper suggests that regardless of the intent, the way in which indigenous knowledge is being used may be undermining the sustainability of the very competitive strategies these organizations are using indigenous knowledge to initiate and simultaneously creating contradictions between a firm’s identity and its actions.

We begin with an analysis of indigenous knowledge as a resource viewed from a contemporary strategic management perspective. Included in this discussion are several illustrative case examples of the commercialization of indigenous knowledge by multinational firms that led to notable business success as measured by conventional financial indicators such
as return on investment, profitability, increased market share, and competitive advantage. This is followed by a more detailed examination of three of these illustrative cases using an ethical lens to articulate the societal consequences of these applications of indigenous knowledge. Our analysis suggests that adverse societal consequences, which may have been unanticipated, initiate technological and biological discontinuities that destroy the source of strategic value that the indigenous knowledge resource initially created. In other words, inappropriate use of indigenous knowledge undermines both business and societal sustainability. We argue that a strategic business analysis which incorporates ethical frameworks in evaluating the application of indigenous knowledge increases the probability that adverse consequences will be anticipated. Further we propose that explicit recognition of societal consequences of business decisions related to indigenous knowledge is the first step toward reorienting the cost-benefit calculations that lead to their selection.

**INDIGENOUS KNOWLEDGE AS A STRATEGIC RESOURCE**

**Assessing the Strategic Value of Intangible, Knowledge Resources**

Resources are “the tangible and intangible assets firms use to conceive or and implement their strategies” (Barney & Arikan, 2001: 138). The resource-based view argues that a firm’s competitive position is derived from its ability to obtain, use, and protect resources that are valuable, rare, and non-substitutable (Barney, 1995; Penrose, 1959; Wernerfelt, 1984). In other words, some firms outperform others because their resource endowments are heterogeneous, unequal and superior, and the firm is able to maintain these differences despite the efforts of rival organizations (Barney, 2007). Knowledge resources, as one type of intangible resource, are particularly likely to be heterogeneous, unequal (or asymmetric), and of uneven value across firms (Grant, 1996b) making knowledge resources particularly indispensable for creating and
sustaining competitive advantage. Indigenous knowledge is distinguished from other knowledge resources by its origins. Rather than being developed through formal Western scientific processes, intentional business innovations, or strategically designed combinative capabilities by entrepreneurs or within formal corporations, indigenous knowledge originates from the intuitive, culturally-embedded, emergent and iterative activities of indigenous people as they sustain their place in the natural world. The objective of indigenous knowledge is the sustained livelihood of the community rather than commercialization, and the outcomes of indigenous knowledge are considered public goods within the local community.

A review of the RBV literature suggests that four factors underpin resource attractiveness: exploitability, coherence, sustainability, and liability. In addition, the ability to obtain resources is a function of a firm’s capability for developing the resources internally or factor markets that exist for those resources.

Superior resources do not guarantee superior performance. Exploitability reflects a firm’s ability to realize the value-creating potential of its resources (Barney, 1995). This ability is related to the norms, values, culture, policies and managerial capabilities of an organization. In addition, exploitability is tied to compensatory relationships in which the change the level of one resource or capability is off-set, symmetrically or asymmetrically, by changes in another resource or capability (Black & Boal, 1994). A firm’s identity is often seen as a linking mechanism that enhances or suppresses relationships across intangible, knowledge-related resources in part because of the organizational context that is created (Kogut & Zander, 1996).

Coherence captures the extent to which an organization’s bundle of resources and capabilities supplement and complement each other (Wernerfelt, 1984). Black and Boal (1994) argue that coherence is enhanced if resources are members of a complex network created by
direct and indirect, socially-created links. Further, resources that are co-specialized (i.e., must be used in conjunction with one another or have higher economic value when employed together) tend to have greater coherence than non-co-specialized assets (Peteraf, 1993). Absorptive capacity (Cohen & Levinthal, 1990), organizational identity (Kogut & Zander, 1996), and a firm’s dominant logic (Prahalad & Bettis, 1986) tend to reinforce coherence among a firm’s intangible and knowledge resources. Together, these forces create a context that defines, shapes, interprets, and utilizes a firm’s knowledge assets. However, this is not always to a firm’s advantage. Resource coherence is a source of competency traps (Barnett & Hansen, 1996; Oliver, 1997) and core rigidities (Leonard-Barton, 1992) that can undermine a firm’s adaptive abilities and capacity for capitalizing on emerging opportunities.

From a general business perspective, sustainability has been defined as the ability of an development intervention to continue accruing benefits long after the initial input has been withdrawn (Blowers & Glasbergen, 1995). From an ecological standpoint, this means that the activity can be continued indefinitely without damaging the environment, depleting the resource, or undermining long-term social, environmental, or cultural relationships (Epstein, 2008). RBV scholars have adopted a more specialized, yet compatible, perspective with respect to sustainable competitive advantage and argue that sustainability is a function of limits to competition including resource rareness, inimitability, imperfect substitution, isolating mechanisms, and imperfect mobility (Peteraf, 1993). Knowledge resources are particularly amenable to forces that promote sustainability including path dependent development, causal ambiguity, social complexity, and embeddedness (Barney & Arikan, 2001). As with the preceding factors, sustainability is context-dependent reflecting characteristics of the organization and its surrounding ecosystem.
Issues pertaining to liability operate to reduce a resource’s attractiveness. Cognitive sunk costs occur when there are social and psychological costs for changing a firm’s habits and routines (Zollo & Winter, 2002). Competency traps develop around resources whose longevity is considered evidence of their value (Oliver, 1997). Structural inertia (Hannan & Freeman, 1984), competitive inertia (Miller & Chen, 1994), organizational momentum (Kelly & Amburgey, 1991), and the dominant logic of the top management team (Prahalad & Bettis, 1986) can work to reinforce the status quo in terms of resource acquisition, application, and integration making a firm vulnerable to market shifts and reducing opportunities for recognizing discontinuous competitive options. Limits to effectiveness are considered particularly difficult to recognize with intangible resources, including knowledge resources, because these resources become part of the contextual fabric of an organization.

Finally, factor markets for knowledge resources are rarely perfectly competitive. Knowledge resources are characterized by uncertainty regarding the value of the information, difficulty in determining appropriate pricing strategies, incompleteness, and information asymmetry (Davenport & Prusak, 1998; Grant, 1996b). These conditions increase the variation in organizational insights regarding the future value of a specific knowledge resource (Demsetz, 1973). This is particularly likely in the case of indigenous knowledge since the commercial potential of the knowledge may be obvious to a corporate strategist in an international corporation because of their industrial frame of reference but completely unknown to members of the indigenous community because of their values and way of life.

**Implications for Indigenous Knowledge**

As with all intangible resources, indigenous knowledge is embedded within a situation-specific context. Guidelines developed from resource-based views of the firm encourage
organizations to ensure that valuable intangible strategic resources remain causally ambiguous and tightly embedded in a firm-specific context to prevent imitation and, in addition, to ensure that the outcomes of their application are protected from appropriation by rival firms. The more tangible the outcomes of the application of intangible resources become, the more necessary it is to protect the tangible results thought patents, copyrights, or other forms of legal protection if the originating organization wants to appropriate the value of their intangible resources. For example, while a firm’s innovation processes may be largely intangible and difficult for a rival to replicate, to maintain a solid competitive position a firm must also protect the outcomes of their innovation routines through patents, copyrights, pedigree registries, and other forms of legal protection. These mechanisms enable a firm to ensure compensation for the intangible asset contribution needed to realize the high quality tangible outcome.

Within the local environment, strategically valuable indigenous knowledge is a public good meaning that it is “infinitely extensible and its use by one person does not deprive others of its use” (Spender, 1996). In its natural context indigenous knowledge is collective, typically contains both implicit and explicit elements, and is embedded within the culture, norms, and routines of the society in which it originated. However, when indigenous knowledge is appropriated by organizations that derive their norms, values, behaviors, and goals from an entirely different context the knowledge is treated as the proprietary property of the corporation. It is then protected by practices and policies implemented by corporate strategists whose goal is to transform indigenous knowledge into a private good and control its application to achieve the strategic and economic interests of the firm. Indigenous knowledge becomes controlled by those who are separated from the originating context and who may not recognize the ecological or cultural consequences of their choices and actions.
As will be illustrated in the following examples, indigenous knowledge is readily exploitable by industrialized, technologically sophisticated firms that have a keen appreciation for the commercial applications of biological, agricultural, pharmaceutical, and aesthetic solutions developed by indigenous populations. Observed case examples suggest that exploitability, coherence and factor market considerations favor the commercialization of indigenous knowledge by industrialized organizations. In addition, observations indicate that the liabilities associated with the successful application an industrialized firm’s existing resources and capabilities tend to obscure crucial sustainability concerns associated with the application of indigenous knowledge.

These conclusions are based on several observations. Differences in context, culture, economic orientation, mean that competitively valuable applications of indigenous knowledge are more apparent and more easily implemented by corporations embedded in highly industrialized settings than for indigenous local organizations. Recognition of the potential value coupled with viable implementation strategies enhance exploitability and contribute to asymmetry and opportunism in knowledge factor markets. Differences between complementary resource bundles managed by industrialized organizations and those managed by indigenous populations mean that effective commercialization of indigenous knowledge is more viable and more profitable for multinational corporations than for indigenous local organizations. Because of this coherence, multinational corporations can leverage their production, marketing, distribution, and financial resources to convert the outcomes of indigenous knowledge into scalable, commercially successful, widely distributed products in multiple markets. Competitive resource-based perspectives driving many business models used by successful multinational corporations emphasize internal capabilities and accomplishments and consequences for
strategically important stakeholders rather than consequences for the larger society or business ecosystem. This orientation introduces liabilities for both the corporation and for the indigenous community regarding sustainability of the business strategy, the resources used to implement it, and the context which enables the indigenous community to survive. The crucial influence of context is not as clearly recognized and apparently is not as fully understood or appreciated with indigenous knowledge as it is for more familiar intangible resources such as organization culture, social capital, complex capability networks, or innovation capability. As a result, there are serious unintended adverse consequences that result from the application of indigenous knowledge in a very different economic and social context.

**Consequences of Current Frames for the Commercialization of Indigenous Knowledge**

Recently, a number of examples of the effective commercialization of indigenous knowledge have received attention. These examples illustrate the conclusions outlined in the prior section. Hoodia, a desert plant used for generations by the San people of Namibia to stave off hunger, was patented by Pfizer as an appetite suppressant and diet aid. After a ten-year legal battle, Pfizer finally offered the San compensation of $30,000 and six percent in royalties. The native populations of Zimbabwe engaged in selective breeding over generations to promote desired traits such as docility, reduced need for high nutrient food, and small calves to ease the birthing process among the Tuli, a humpless native cow. In 1945, under colonial rule, Tuli embryos were frozen and sold to commercial beef breeders in Australia with no compensation to the communities who developed the breed. Instead, the colonial-backed beef industry and the colonial government received the royalties. The Ojibwa and Chippewa communities in Minnesota have cultivated varieties of native wild rice for centuries and both the rice and the cultivation process are integral parts of the culture of these native communities. The University
of Minnesota began ‘cross-breeding’ and patenting strains of wild rice that had been cultivated by the Ojibwa and Chippewa for centuries and as a consequence of the commercialization process, caused changes in the environment and in the genetic diversity and composition of the rice causing over half of the original wild rice varieties to become extinct. The need tree has been used by indigenous communities in India for fuel, food, dental hygiene and other medicinal purposes for centuries. W. R. Grace patented certain extracts from the neem, causing the price of neem to increase to the point where indigenous populations can no longer afford its use. Basmati, a fragrant and culturally significant rice cultivated for centuries by indigenous people in India, was patented by RiceTec. The patent carried a stipulation that all functionally equivalent strands also fell under the patent. After numerous protests by indigenous community organizations in India, RiceTec revoked its patent in 2001.

These and other examples raise several important issues. First, the value of the outcome of indigenous knowledge is clearly recognized by companies capable of exploiting the results for commercial and strategic gain. Second, since existing knowledge provides the basis for assessing the relevance of new knowledge, industrialized business organizations have a strong advantage over indigenous community groups when it comes to recognizing the commercial value of what they know. Third, the value of the path-dependent, culturally-embedded, processes that led to the strategically valuable knowledge is often overlooked or ignored. Fourth, current strategic analysis frames do not explicitly incorporate relevant assessments of potential non-business consequences increasing the potential for unanticipated, adverse cultural and societal problems. Fifth, when these serious problems come to light through the efforts of community-based protests or through the international legal system, the merits of the protest are compelling and lead to compensatory action. Sixth, compensatory action after the fact is
generally insufficient to overcome the social, biological, or cultural damage that initial disregard for the origins of valuable indigenous knowledge creates. Finally, disregarding the cultural and societal origins of indigenous knowledge violates the ‘respect for persons’ principle’ and, therefore, we propose that explicit consideration of ‘respect for persons’ as a deliberate component of strategic decisions related to indigenous knowledge is an effective way to anticipate and preclude the type of adverse consequences that have been observed in the past.

‘RESPECT FOR PERSONS’ AS AN ETHICAL FRAMEWORK FOR STRATEGIC DECISION MAKING

Defining ‘Respect for Persons’

While the concept of ‘respect for persons’ may not have been settled definitively from a technical or philosophical point of view, there is strong agreement that this principle is of the upmost importance when it comes to deciding what actions are permissible. ‘Respect for persons’ is an effective guideline governing both individual actions as well as cooperative group actions and has been thoroughly woven into the fabric of our moral life (Bowie, 2007). In this section, we discuss ‘respect for persons’ as one of the most accepted practical models of ethical behavior in management and show that the ‘respect for persons’ cannot be violated without severe, and often irreparable, adverse consequences.

Philosophers derive the ‘respect for persons’ principle from the following assertion: individuals should never be treated as merely a means to an end, they should always be treated as ends in themselves (Bowie, 2007). We can look to ourselves to see that we, as individuals expect to be treated in a certain way, and so by analogy the ability to require respect should also be true for all individuals (Bowie, 2007). As a corollary to this assertion, if an individuals value the ability to make decisions for themselves for their own reasons then they must also accept
responsibility for their decisions and for the associated outcomes of those choices (Bowie, 2007). The acceptance of responsibility and accountability makes individuals unique from other beings since it determines our moral status (Bowie, 2007). Consequently, philosophers argue, the ‘respect for persons’ principle is essential to our understanding of how we should treat other human beings.

In developing a framework to promote ethical business decision making, Donaldson (2007) assumes that strategists are concerned with and want their decisions to be ethical. He also assumes that this is not always a straightforward analytic situation since strategists also want and need to work with people and organizations in a variety of international settings. He recognizes that a global environment contains many cultural differences in terms of standards, values, and beliefs. Consequently, strategists must make decisions that account for and tolerate these differences. The ethical dilemma facing a strategist is how to satisfy these assumptions and conditions especially since the acceptance of a number of cultural differences can run counter to their own ethical standards and beliefs.

Based on these assumptions, Donaldson (2007) developed three clear, practical guidelines for ensuring ethical behavior in business based on a social contracts perspective. First, he contends that decision and actions must respect core human values. Second, decisions and actions must respect local traditions. Third, when making decisions and implementing actions, decision makers must understand that the situational contexts matter and need to be taken seriously. These three guidelines provide a basis for navigating the ethical dilemma posed by diverse cultures, norms, standards, and beliefs. Incorporating these three factors in strategic decisions, will help ensure that the ‘respect for persons’ principle is not violated.
The concept of core values (the first of Donaldson’s guidelines) is articulated in terms of respect for human dignity, respect for basic rights, and good citizenship. Some business activities invariably require instrumental transactions between individuals, and much of the time our business interactions reflect interdependencies in which some actors benefit more than others. However, embedded in the value of human dignity is the notion that no human being is worth more than another and, therefore, our interactions should strive to recognize and preserve the humanity in those with whom we interact. This perspective ties human dignity to respect for local traditions. Moreover, respect for human dignity means that individuals should not be required to engage in actions that are demeaning, require them to bear disproportionate costs while others experience disproportionate benefits, or otherwise undermine the self-respect of the individual. Finally, respect for human dignity includes placing an appropriate value the contributions individuals make to collective outcomes. One way to accomplish this is to follow standards of distributive justice and provide reasonable compensation to individuals that is proportionate to their contribution. Another facet of distributive justice is the concept of sustainability. Sustainability requires economic activities to generate wealth and meet current needs but to also preserve the environment and the social community and its resources so that future generations have the same opportunity to meet their needs (Epstein & Roy, 2003). Sustainability also links respect for human dignity with respect for local traditions.

Respect for basic rights can be demonstrated through processes that maintain standards of equity, fairness, and impartiality and by ensuring informed consent (Cavanagh, Moberg, & Velasquez, 1981). Informed consent (Berg, Appelbaum, Parker, & W., 2001), legal condition, asserts that individuals are moral agents and, as such, should be assumed to have the ability, willingness, and responsibility for making decisions for themselves. In addition, the concept of
informed consent requires those having disproportionate power to ensure that unreasonable information asymmetry is eliminated. Informed consent reflects the underlying concepts of respect for human dignity and basic rights. Because individuals accept responsibility for their own actions and for the outcomes of those choices and behaviors, they require information that allows them to make rational and informed decisions. They need to be able to accurately consider the implications of their own choices on the ability of others to meet their fundamental physical and psychological human needs. In a business setting, activities should be designed to create conditions that promote free and informed choice, responsible autonomy, and do not prevent others from obtaining resources needed to sustain their personal and societal well-being.

Good citizenship asserts that members of a community must work together to support and improve the institutions on which the community depends. Good citizenship acknowledges the concept of business ecosystems and underscores the importance of context when making and assessing business decisions. Good citizenship places an ethical lens on interdependence and exchange relationships and links respect for human dignity with respect for local traditions and with a need to understand and appreciate contextual conditions. In a business setting, the value of good citizenship recognizes systemic realities such as distance in both time and space between actions and consequences, shared fate, and unpredictable outcomes (Senge, 1990).

Although in philosophy, the ‘respect for persons’ principle is usually justified from a Kantian perspective, we think a Utilitarian perspective is equally compelling, especially if group cooperation, group consensus and systemic implications are part of the utilitarian calculus. Simply stated, utilitarianism is the consequence-based view that decisions and actions are morally acceptable as long as they produce the greatest amount of pleasure/happiness and the least amount of pain/unhappiness. Some have argued that maximization of profit can be
considered the maximization of pleasure. From this perspective, as long as the pleasure from the profit outweighs the pain it causes, the decisions and actions enabling profit maximization are considered morally permissible. Narrow, economically-focused cost/benefit analyses which some have used as a measure for assessing business actions are closely related to this perspective on utilitarian analysis (Freedman, 1963). Many others have argued that financial outcomes are insufficient for assessing organizational performance (Carroll, 1979; Epstein, 2008; Kaplan & Norton, 2001). We argue that ‘respect for persons’ should always be included in a utilitarian analysis, and that this factor be accorded a sufficiently high value that violating the ‘respect for persons’ principle would invariably require a reassessment of the strategic choice.

Our current economic climate shows what happens when ‘respect for persons’ is disregarded. Current economic conditions demonstrate why business decisions need to be assessed from both a short-term and a long-term perspective, how unacknowledged interdependencies can yield far-reaching outcomes, and that if we fail to consider consequences of our strategies and actions on individuals who are not directly involved in either the choice or the implementation activities, the results can be devastating and unwieldy. Unfortunately, a common trend has been to emphasize the short term, to only consider immediate dependent relationships, and to disregard many of the implications of business decisions for individual stakeholders. While the results of these tendencies are now obvious for financial institutions, the housing market, and the domestic automobile industry, parallel consequences in terms of strategies for the use of indigenous knowledge have not been so broadly apparent.

To summarize, ‘respect for persons’ can be operationalized by making choices that explicitly safeguard core human values, appreciate and preserve local traditions, and strive to anticipate the consequences for the larger economic, social, and ecological context more
accurately and comprehensively. In the case illustration that follows, we demonstrate how these guidelines can be used in conjunction with the resource-based view of the firm to reduce the propensity for incurring unanticipated, irreparable adverse consequences from the use of indigenous knowledge.

AN EXAMPLE: NEEM AND THE NEEMIX PATENT

An Abbreviated Summary of Events

The *azadirachta indica*, or the neem tree, has been used by indigenous communities in India for fuel, food, dental hygiene and other medicinal purposes for centuries. The tree produces a number of versatile and valuable chemical compounds which cannot be replicated in the laboratory, but which are extremely desirable for a number of commercial uses in an international market. W.R. Grace and Co. patented certain extracts from the neem, causing the price of neem to increase to the point where indigenous populations can no longer afford its use.

The neem tree is native to several countries with subtropical climate. It serves many purposes that are badly needed within these countries. For example, because the neem tree matures in only 5-7 years, it is a sustainable source of timber while stabilizing the soil to prevent vast and substantial erosion. The neem tree also is one of the only affordable means of shade for these hot climates. In India, farmers have been using a recipe of neem seeds and water as a highly effective, and environmentally friendly, pesticide against insects that would otherwise destroy their livelihood. Because of its importance as a multi-functioning resource, neem has become part of India’s social and cultural heritage. The properties of the neem tree are taught in all school curriculums as vital part of India’s health education and traditional agricultural training. In India, the neem tree and its properties have become a “cure all” for many ailments experienced by humans and for many problems found in the environment. It has been used to
prevent tooth decay, as a treatment for virus, as a contraceptive, and to fix skin abnormalities such as leprosy. In addition, neem is used as pesticide to kill many dangerous biting insects, and serves as a standard resource for keeping crops used for food and commerce healthy and flourishing. All the benefits of neem have been used in ways that reflect cultural traditions and at very little cost to indigenous communities in India. The cultures of indigenous communities often embrace a close and symbiotic relationship between human beings and the natural environment. The position of the neem in Hindu culture in particular reflects this connection.

It would seem that these benefits would lead to widespread use of neem but because of its chemical instability, it was not a good choice for mass production. Local use was restricted to small batches of products used on an as needed basis. However, when it was needed, it was always available as a traditional and abundant resource for the local community.

However, after purchasing the rights of western research regarding the neem tree and its properties, W.R. Grace, a company with the goal of producing environmentally friendly pesticides, was able to formulate a storage-stable version of neem. In 1994, W.R. Grace acquired a patent from the EPA and registered the product under the name Neemix. By 1995, controversy began regarding the legitimacy of the patent. Because neem was a cultural and traditionally used product, farmers in India were joined by 200 organizations from various countries including the U.S., in an effort to get the patent revoked. In addition to many arguments against the patenting of neem products, they argued that the patent allowed W.R. Grace to basically steal indigenous knowledge without giving compensation to the people who generated it. Those protesting the patent believed that W.R. Grace had no right to patent neem calling the request a case of “biopiracy” (Shiva, 1997). The Foundation for Economic Trends (FET) questioned whether the US patent system had the right to grant the patent in the first place
and whether they could fairly compensate the indigenous population. Jeremy Rifkin, president of the FET claimed that “Whatever little incremental change W.R. Grace put on this is small compared to the native knowledge that has been accumulated generation after generation on the use of this tree” (Severance, Shapiro, & Werhane, 2008: 184). It became apparent that indigenous populations in developing countries value their intellectual property rights in the same way that Western corporations do, and want to protect those rights just as vigorously.

A second issue is equally important. The neem tree has been essentially a “free tree” for the indigenous population of developing countries and granting a patent on any neem-based product would prevent the abundance supply necessary for it to remain a free tree. Although W.R. Grace issued a statement indicating they had done nothing wrong and that their patent would not affect the abundance and use of the neem tree for indigenous populations. This was not an accurate assessment.

In 2005, the Indian government successfully argued and won their case against the granting of the patent stating that the neem tree and neem based products were indeed traditional Indian knowledge and not eligible for patenting (BBC, 2005).

**Juxtaposing the Resource-Based View with the Indigenous Community Perspective**

The primary criteria for evaluating the use of a particular tangible or intangible resource from the perspective of the resource-based view of the firm concerns the extent to which that resource is valuable, rare, inimitable, non-substitutable and exploitable, and the extent to which the resource fits with and contributes to a firm’s overarching strategy. From the prospective of W. R. Grace, indigenous knowledge demonstrating the versatile and highly beneficial uses of various neem extracts and the desirable properties (e.g., rapid growth, drought resistance, etc.) of the natural resource itself clearly meet the criterion of high value. From the perspective of the
indigenous community, the valuable agricultural, medicinal and cultivation attributes are a vital part of the communal knowledge base, but in addition, the neem has important cultural, spiritual, and communal significance which augments the pragmatic value of the plant.

As a renewable natural resource, the neem tree can be intentionally planted and cultivated offering the potential to expand resource availability, making the resource less rare. However, as with any natural resource, climate and soil requirements limit cultivation to certain regions. In addition, unless harvest and planting activities are managed for sustainability, the resource can be depleted over time or in certain areas. As long as the indigenous knowledge regarding the value of the neem and the control of the natural resource remained within the domain of the indigenous communities, sustainability of the natural resource was maintained by practices deeply embedded in the culture and heritage of the community. Creating a rare resource was seen as contradictory to the best interests of the community. In fact, the neem is proscribed as one of five plants that are considered essential in an Indian garden. However, when external organizations with entirely different values, goals, frames of reference, and constraints began to control this resource, the perspective on sustainability shifted dramatically. Rather than ensuring sustainability of the resource for the multiple practical and cultural uses within the indigenous community, sustainability was redefined to focus on sustainability of the neem tree for selected commercial uses within the larger international community.

To date, the multiple benefits from the neem have been found to be non-substitutable, in that the agricultural, medicinal, and other uses cannot be met to the same degree by other natural resources or commercialized products. This non-substitutability of natural extracts from the neem is seen as a key component of value from a commercial perspective. However, this assessment only considers a portion of the overall knowledge and natural resource. In the same
way that the agricultural and medicinal applications of the neem are non-substitutable, the environmental and social benefits such as shade, soil protection, and source of fuel are equally irreplaceable for the indigenous community.

There is abundant evidence demonstrating the profitable commercialization of neem extracts leaving no doubt as to the exploitability of this resource by industrial organizations. Likewise, there is ample evidence demonstrating the ability of indigenous communities to generate and discover a wide array of useful applications of the neem that enable these communities to sustain their livelihoods and the culture. Exploitability of the neem by the local communities is clear evidence of the local importance of the indigenous knowledge these societies created. Without this indigenous knowledge it is unlikely that industrialized firms would have recognized the value of the natural resource, since it went ‘undiscovered’ and unexploited until quite recently. What was unacknowledged and uncompensated was the role that indigenous knowledge played in enabling the commercial exploitation of the natural resource by industrialized firms. Even more troubling is the negative interaction between commercial exploitation and indigenous exploitation in which increased success in the economic realm, which enhances the viability of multinational corporations, appears to be decreasing sustainable exploitation within the indigenous populations and undermining the ability of these communities to continue to thrive.

The issue of inimitability is in many ways the pivot point for the concerns raised in this paper. The process of creating indigenous knowledge is causally ambiguous, serendipitous, socially complex, path-dependent, and embedded in historical events and experiences. The knowledge that is created becomes part fabric of the community. Indigenous knowledge is rarely documented in the formal, explicit manner found with innovation outcomes and
intellectual capital developed by industrialized companies. And it is not within the cultural frame of reference of these communities to try and protect this knowledge from imitation through the use of patents, copyrights or other formal protections for intellectual property. In fact, since indigenous knowledge is considered a collective, cultural integration mechanism, the intent of these communities is to share this knowledge as widely as possible and to firmly embed it in the practices and policies governing the community. It is this perspective that makes local communities vulnerable to the appropriation of their knowledge and their resources by industrial firms with vastly different orientations and completely different agendas.

In summary, industrial organizations and indigenous communities rely on contrasting and contradictory paradigms for evaluating the value and appropriate use of indigenous knowledge, natural resources, and the commercial opportunities that these factors create. The business case for commercializing indigenous knowledge is compelling from an economic perspective. The indigenous communities concerns regarding sustainability and equitable treatment are also persuasive. In order to understanding how the explicit consideration of ‘respect for persons’ might be a mechanism for reconciling these two paradigms, it is useful to examine the unique analytic challenges presented by indigenous knowledge.

**Understanding the Unique Challenges of Indigenous Knowledge**

Indigenous knowledge has several characteristics that make it difficult for conventional business perspectives to adequately capture the full implications of appropriating and using this knowledge in commercial settings. First, indigenous knowledge is not developed through conventional scientific processes, so established accounting practices for tracking development costs are not effective in this setting. As illustrated by the neem example, the traditional cultural uses of the neem tree evolved in an emergent fashion over centuries. Consequently, it difficult to
identify, recognize and distinguish the effort, resources, time, or other investments that were used in the development of this knowledge. Historical events, individual set-backs, personal or community problems that resulted from mistakes along the way are unlikely to be documented or otherwise visible to individuals outside the community making development costs particularly difficult to assess. Since the knowledge was not developed by familiar means, the value of that development process is not easily recognized, understood, or measured.

Second, indigenous knowledge is so fully woven into the culture and the environmental setting, that its origins and path dependent development process is obscured, making it easy for individual from outside the community to believe they were responsible for the ‘discovery’ of a valuable resource. The commercial, science-based, private-ownership paradigm shaping the mental models of most highly successful multinational firms blinds them to the communal, iterative development process and collective ownership of indigenous knowledge. Familiar reference points and anchors for establishing who should be able to appropriate the value of this resource are missing, and reference points that should be used are generally are outside the decision frame of most strategic managers. Assessment of who should benefit from a resource is an essential factor for establishing reasonable economic rents.

Third, the line of demarcation between the indigenous knowledge which introduces the value of a product and the scientific and entrepreneurial knowledge which makes the benefits of natural resources scalable and commercializable is unclear. As has been recognized in work into exploration and exploitation processes in general (Benner & Tushman, 2003; March, 1991), the two types of knowledge are not entirely independent. As the scientific and entrepreneurial knowledge advances, the ability to continue to use the indigenous knowledge in the local community can be undermined by shifting economic and societal forces. This often shifts the
primary beneficiary of the indigenous knowledge output from the local community to the industrialized society.

Fourth, the implications of altering the usage patterns, cultivation practices, or culturally-embedded interactions of indigenous knowledge are not part of the decision analysis for most business firms. It is easy to view the outcome of indigenous knowledge (for example the environmentally friendly pesticide benefits of the neem extract) as a discrete, isolatable, strategic resource rather than as a component in a network of properties associated with a complex social and environmental system. For example, when W. R. Grace began its own operations in India, it provided incentives for Indian manufacturing firms to stop production of neem products and to provide them with the neem tree as a raw material resource instead. While this action is consistent with global strategies that source various parts of the value chain in the locations with the best cost advantage, it causes the indigenous community to lose control of the natural resource and restricts their ability to continue development of the knowledge resources surrounding the neem.

In summary, four conditions create ethical and societal challenges for the strategic use of indigenous knowledge resources. One, conventional strategic analysis is limited in its ability to recognize, comprehend, and measure the value and costs associated with the community-based process of developing indigenous knowledge. Two, conventional strategic analysis has not developed reasonable and accessible anchors and reference points for determining the allocation of economic rents with respect to indigenous knowledge. Three, separation and competition between the exploratory contribution of indigenous knowledge and the exploitation capabilities of industrial organizations are difficult to reconcile within conventional strategic analysis. Four, strategic decision analysis with respect to sustainability does not adequately encompass
consideration for sustaining indigenous knowledge resources, and natural resources for non-business uses along with the business-related resources. We propose that explicit consideration of ‘respect for persons’ helps to overcome each of the unique challenges associated with the strategic use of indigenous knowledge.

‘Respect for Persons’ Requirements

Building on Donaldson’s (2007) guidelines for relying on ‘respect for persons’ as a foundation for ethical business decision making, and as discussed in a previous section of this paper, we propose that seven factors be included as essential criteria to be met within in any strategic analysis concerning indigenous knowledge. Again, using the neem example, we illustrate how disregarding these criteria contributed to avoidable adverse outcomes and suggest that explicitly incorporating these seven criteria in the strategic analysis would enable strategists to anticipate, and thereby overcome the ethical and social challenges associated with use of indigenous knowledge.

1. Preservation of the dignity and humanity of all individuals engaged in or affected by the strategic action. In filing for the patent and granting the patent, the traditions of the indigenous peoples were used merely as a means to an end. The industrial organizations involved in commercializing neem products did not consider how the mass marketing of this various neem extracts would alter the traditional access to such an important resource. As the neem became to be seen more and more as a business resource as opposed to a cultural resource, the adverse consequences for the indigenous population increased at a far faster rate that any positive consequences since, from the perspective of this community, quality of life has a higher value than money. Devising a strategy that explicitly maintains the human dignity of all primary stakeholders requires recognition of this difference in priorities, and preservation of sustainable
access to the neem tree and its derivative products for the indigenous community. Due to neglect of this principle, unfortunately, less developed countries end up being a mere means to the ends of developed countries (Shiva, 1997).

2. **Using standards of distributive justice that accurately assesses and rewards contributions to collective outcomes.** From a justice as fairness perspective (Rawls, 1999), the indigenous people were not compensated for their intellectual capital contribution in a way that is comparable to the way that groups creating intellectual property through more conventional Western mechanisms would have been. Since the process of knowledge development did not follow procedures that are recognized as part of Western innovation and product development processes, the value of indigenous knowledge creation activities was overlooked or disregarded. While no established accounting mechanisms currently exist for setting a price on indigenous knowledge creation process activities, this does not eliminate the requirement for protecting the intellectual property rights of indigenous people in a way that compares favorably to the protection and compensation that would be accorded Western organizations who made similar value contributions.

This is not a novel problem. Knowledge markets in general are characterized by uncertainty, pricing and valuation challenges, and heavy dependence on interpersonal factors such as trust, reciprocity, reputation, and altruism (Davenport & Prusak, 1998). Three specific guidelines would help to ensure that the principle of distributive justice is met when acquiring indigenous knowledge. One, indigenous knowledge should be considered intellectual property owned by the local community. As such, all property rights typically accorded personal intellectual property should be protected, and fair compensation for use of the intellectual property should be provided. Two, the strategic importance of the indigenous knowledge
contribution to the proposed commercial ventures should be assessed since few mechanisms exist for adequately evaluating development costs. The factor market for indigenous intellectual capital contributions should be similar to the factor markets for intellectual property developed through more familiar, Western-scientific processes. Three, the relationship components of knowledge exchange should be developed and nurtured in a way that recognizes the dignity and humanity of the indigenous community.

3. **Ensuring the natural environment, local economy, and social community of the indigenous people that developed the crucial knowledge resource are sustainable.** Neem is a part of India’s cultural knowledge. It is a tree that grows and flourishes in areas that need it the most to provide relief from extreme heat, to enable agriculture to thrive, to promote the health of the local population, as a focal point in education, and as a mechanism of cultural cohesion. As a resource, the neem is viewed by the indigenous population as a collective, communal asset and responsibility. Granting a patent to an external agent who does not fully understand or appreciate the vital cultural, social and economic role the natural resource plays in the local community, jeopardizes the sustainability of this resource for local use. Those who control a resource need to fully understand and be able to manage the ecological, societal, or natural forces that preserve the resource if sustainability is to be maintained (Epstein, 2008). Indigenous knowledge captures this understanding. Multinational firms requesting patents for biological resources typically do not have this knowledge. This is why, as in the neem case, the actions taken by these firms when they are granted control, reduces access and essentially changes the ability of the local community to take advantage of such a useful product. Sustainability requires a balance between rights and responsibility across social, cultural, environmental, and economic domains (Bell & Morse, 2003; Blackburn, 2007; Epstein, 2008; Epstein & Roy, 2003). Providing control through
granting of a patent to an organization that has insufficient knowledge regarding essential systemic characteristics undermines the ability to achieve this balance. Ensuring that the principle of sustainability is upheld is likely to require power sharing between the industrial organization and the indigenous community.

4. Establishing a valid basis for informed consent within the indigenous population.

W.R. Grace did not inform the Indian government or the members of the indigenous community of their plans in advance. Since both the government of India and thousands of citizens protested in an effort to get the patent revoked, it is clear that informed consent was not obtained in the neem example. Moreover, these events strongly suggest that the Indian government would have rejected any proposal to patent neem based products. In the same way that informed consent is a prerequisite for research with human subjects, informed consent is an ethical requirement for actions that have potentially adverse consequences on communities, particularly when there is a power imbalance between the agent taking the action and the stakeholder experiencing the adverse consequences.

Informed consent requires individuals to be able to choose what does or does not happen to them based on standards of adequate information, comprehension, and voluntariness (Belmont Report, 1979). Events in the neem case make it clear that none of these requirements was met. ‘Respect for persons’ requires a strategist to take actions that enable those affected by the firm’s activities to accurately and comprehensively assess their risk, and to choose not to consent to the proposed strategic initiative. Many of the guidelines related to obtaining informed consent among research subjects, provide useful practices for obtaining informed consent for the acquisition and use of indigenous knowledge.
5. Practicing good citizenship. Good citizenship on a global scale has many parallels with organizational citizenship behaviors. Both mean that individual or corporate behaviors and actions go beyond what is proscribed by the specific task requirements and contribute as needed to the success of the system (Organ, 1988; Pohl, 2002). To be a good citizen means to respect people and their practices, as long as those practices do not violate ‘respect for persons’ or specified legal standards. In the neem example, W.R. Grace violates the requirements of good citizenship when they took actions that did not respect the ‘free tree’ concept and its abundance within the Indian culture. The origins of indigenous knowledge guarantee that this resource is intimately linked to the people and practices of the community. In order to practice good citizenship, strategies for acquiring and using indigenous knowledge should deliberately examine those ties and develop policies and practices to preserve them.

6. Respecting and preserving local traditions. Neem is an intricate and multifaceted part of India’s local traditions. This can be seen in the many uses of neem and the education that children receive as to how to take advantage of neem. Local traditions were ignored by W. R. Grace in deference to Western capitalistic traditions. The patent would not allow the preservation of neem as a local tradition because of the effects of mass marketing. This is particularly problematic since the tree grows primarily in the global south and other less industrialized regions of the world, and these countries are the most dependent on the neem for their basic subsistence. ‘Respect for persons’ requires firms wishing to acquire indigenous knowledge and indigenous resources to ensure that capitalist economic objectives do not overshadow local cultural objectives and traditions. Often, this requires adopting an activist approach to preserving natural systems and social traditions (Freeman, Pierce, & Dodd, 1995; Wheeler, Colbert, & Freeman, 2003).
7. Explicitly assessing the impact of the strategic action on the local situational context. A point of departure for this paper is the unintended and unanticipated, yet adverse consequences that the actions of large organizations can have on the societies in which they operate. It is unlikely the W.R. Grace anticipated that their efforts to patent neem would lead to the company becoming known as a thief of indigenous knowledge by those who developed it. It is also unlikely that the firm anticipated the negative effect on local education, the disruption in local agriculture, the increased vulnerability of the local population to disease and other health problems, or the negative impact of their actions on the livelihood of the local population. However all of these adverse consequences did take place. Moreover, all of these adverse consequences could have been anticipated if ‘respect for persons’ criteria had been incorporated in the firm’s strategic analysis concerning indigenous knowledge and neem acquisition. Social responsibility requires firms to look beyond the business stakeholders affected by their actions to consider the impact of corporate activities on the welfare and interests of the larger society (Sherwin, 1983). When societal consequences are neglected, not only do serious adverse consequences undermine the health and vitality of the local communities, but fundamental trust in Western corporations is eroded.

DISCUSSION AND CONCLUSIONS

This paper builds from the observation that organizations have a substantial impact on the economies and societies in which they operate and that, at times, unanticipated consequences of organizational actions create long-term, adverse outcomes for the larger society. Strategies involving the acquisition and use of indigenous knowledge are particularly likely to create highly profitable and competitively beneficial results for the industrialized firm initiating them, and at
the same time lead to serious and irreparable adverse outcomes for the communities that originated the knowledge resource.

This paper makes several contributions to the literature. First, we contribute to the body of knowledge on the resource-based view of the firm, the knowledge-based view of the firm, and the broad literature in strategy and organization theory on organization-environment interactions. We expand the RBV literature by articulating the factors that made indigenous knowledge attractive as a source of value creation and competitive advantage. We contribute to the broader organization theory literature by explaining why the use of indigenous knowledge is particularly likely to generate unintended, but severe and adverse consequences for the surrounding business and social ecosystems when this knowledge is used by non-indigenous firms. We augment the literature on the knowledge-based view of the firm by identifying the specific characteristics of indigenous knowledge that make it unusually challenging to manage within familiar analytical frameworks.

Second, we draw from work in philosophy to identify specific guidelines for integrating ethical concerns within strategic analysis pertaining to the use of indigenous knowledge. We propose applying the ethical concept of ‘respect for persons’ as a viable means for overcoming the analytic challenges associated with strategies for acquiring and using indigenous knowledge in a socially responsible way. We argue that explicit consideration of this principle in the strategic decision making process would illuminate previously unrecognized outcomes. Further we propose seven specific criteria that can be used to make ‘respect for persons’ an explicit part of the strategic analysis. The case of the neem tree is used as an example of why an adjustment in strategic decision making is necessary when dealing with indigenous knowledge, and to demonstrate how considering both the resource-based strategic value of indigenous knowledge
and the principle of ‘respect for persons’ could yield more desirable and more sustainable outcomes for both the firm and the indigenous community.

Finally, this paper underscores the importance of considering long-term, systemic consequences when making strategic decisions. There is wide-spread acknowledgement that organizational actions often alter the ecological, social, cultural and economic conditions in a firm’s external environment. This paper articulates a set of specific criteria that strategists can use to better anticipate potential consequences for the broader social system, and argues that explicitly incorporating ‘respect for persons’ in strategic analysis would enhance responsible stewardship of both the natural and the social environments in which organizations operate.
References


