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Value and Transaction Costs: Building Bridges Between the Economics of Property Rights and Strategic Management

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Value and Transaction Costs: Building Bridges Between the Economics of Property Rights and Strategic Management

Abstract
We forge linkages between the economics of property rights (Coase, Demsetz, Cheung, Barzel) and strategic management. Property rights to resources consist of the rights to consume, obtain income from, and alienate these resources. Transaction costs are the costs of exchanging, protecting and capturing property rights. We clarify the key role of transaction costs with respect to understanding value creation and the limitations and opportunities of strategizing relative to competitive forces. The economics of property rights identifies new sources of value creation (i.e., reducing the dissipation caused by transaction costs), and new types of resources (i.e., capture and protection capabilities), clarifies the role of contracting in the exercise of market power, and suggests that "strategizing" and "economizing" perspectives are related to a larger extent than is normally recognized. Refutable propositions are derived.

Introduction

This paper builds a bridge between mainstream strategic management theory (Porter 1980; Barney 1991; Peteraf 1993) and the economics of property rights (e.g., Coase 1960; Alchian 1965; Barzel 1997; Foss and Foss 2002). The relevance of such an exercise stems from the concepts and constructs, methods of analysis, and, in particular, insights with respect to understanding competitive strategy that it introduces to the strategic management field.

The relevant key concepts are those of property rights and transaction costs. An agent's, or, as we shall say, a player's, ability to derive value from resources by use or exchange depends on the property rights that she holds to the relevant resources, property rights over resources consisting of the rights to use, consume, obtain income from, and alienate these resources. In turn, the ability to derive value from a resource is backed up by the power to exclude others, whether by legal or private means (Alchian 1965; Barzel 1997: 2). Since exclusion (i.e., protection of rights) is costly, property rights are seldom absolute. A key tenet of the economics of property rights is therefore that a player's ability to derive value from a resource is never perfect, because virtually all property rights are insecure. Transaction costs are the resources that are expended on the exchange, protection, and capture of property rights (Cheung 1969).

We show in this paper that these notions about property rights promote a fresh conceptualization of competitive strategy as revolving around how the (transaction) costs of protecting and capturing property rights influence the value firms can create and appropriate. This conceptualization unifies property rights, transaction costs, value creation and appropriation, and competitive strategy.

We build up a theory about competitive strategy from the above notions and conceptualizations by combining them with specific assumptions about behavior. We assume that all players seek to acquire, protect, capture, and allocate property rights so that the value of the resources to which these rights correspond is maximized. An implication is that the lower the costs of protecting property rights, the better the incentives to create value, because more exchanges can then be concluded than if property

rights were less secure. When property rights are costly to protect, other players may expend resources on capturing them. In turn, this influences how much value players can appropriate in cooperative and competitive relations. When it is costly to protect property rights, an implication is that firms may increase their value-creation and the share of value that they can appropriate by means of reducing the costs of protecting their rights, that is, raising other firms' perceived costs of capture. For example, contracting and influencing expectations through signaling may be means to accomplish these goals. These ideas link property rights, transaction costs, value creation and appropriation, and competitive strategy on the theoretical level.

The present application of the economics of property rights allows us to contribute to the strategic management field in a number of ways. Thus, we provide an understanding of the key role of transaction costs in understanding 1) value creation and 2) the limitations and opportunities of strategizing relative to competitive forces. In particular, we develop the argument that transaction costs constrain the opportunities for successfully carrying out competitive strategies, such as price discrimination, predatory pricing, and other attempts to exercise strategies based on market power. This is because the costs of contracting between the players in an industry crucially influence whether a firm can exercise market power in that industry. An implication of this latter line of reasoning is that "economizing" and "strategizing" perspectives (Williamson 1994) in strategic management are not analytically opposed, and can to a certain extent be aligned. In sum, our contention is that a significant part of strategic management concerns problems and opportunities that only arise in a setting where transaction costs are positive, and that added insight in the theory and practice of strategic management will be gained from more explicitly considering these costs.

The design of the paper is as follows. We begin by explaining the basics of the economics of property rights. An important part of this section is a discussion of the zero transaction cost setting underlying the "Coase theorem"(Coase 1960). The purpose of this is to tease out the consequences for the understanding of competitive strategy of assuming that transaction costs are zero. We argue that the scope left for competitive strategy in this

setting is very limited, and that this points to the importance of transaction costs with respect to understanding competitive strategy ("*Key Definitions and Tenets of the Economics of Property Rights*"). Having thus laid the groundwork, we then develop a property rights approach to competitive strategy under the assumption that transaction costs are positive ("*A Property Rights Framework for Competitive Strategy*"), and then discuss extensions of this framework, notably implications for competitive advantage ("*Implications and Extensions of the Framework: Competitive Strategy and Sustained Competitive Advantage*"). The framework complements existing approaches in mainstream strategy research (Porter 1980; Barney 1991).

Key Definitions and Tenets of the Economics of Property Rights

Economics has for a long time been an important source of ideas for developing mainstream strategic management theory (Porter 1980, 1981; Barney 1991; Peteraf 1993), and we conform to this tradition by making use of the economics of property rights (e.g., Coase 1960; Alchian 1965; Demsetz 1967; Cheung 1969; Barzel 1994, 1997; Foss and Foss 2001). So far, property rights economics has only been explicitly applied to the strategic management field in very few papers (Foss and Foss 2000; Kim and Mahoney 2001). Related approaches with common antecedents with property rights economics, such as transaction cost economics and the economics of agency, have been much more extensively used. Notions about property rights are present in analysis of the strategic implications of intellectual property issues (e.g., Liebeskind 1996; Teece 1987; Argyres and Liebeskind 1998). However, the economics of property rights goes far beyond issues of intellectual property. It is therefore appropriate to state the fundamentals of the economics of property rights, particularly as these relate to firm strategy issues. Note that the ideas about property rights that we use are different from those used in the approach of Hart (1995) and his various associates, which is sometimes also called the "property rights approach" (see Foss and Foss 2001). Also note that our aim is not to be comprehensive in our presentation; only those aspects that are relevant to strategic management are discussed (see Eggertson 1990 for a comprehensive presentation of the

economics of property rights). Finally, an important simplifying assumption in the following is that we, like most others engaged in content research in strategic management, conceptualize the firm as a unitary actor.

Unit of Analysis

The economics of property rights was founded on the recognition that transactions involve the exchange of property rights rather than the exchange of goods *per se*, a tenet that is conventionally ascribed to Coase (1960). The unit of analysis is the individual property right. Property rights over resources consist of the rights to consume, obtain income from, and alienate these resources, and therefore influence the abilities to consume and obtain income from those resources. The value of any resource is a direct, positive function of these abilities and therefore of the underlying property rights. Thus, understanding the determinants of these abilities and property rights, notably how well protected property rights are, brings insights into resource value. We briefly explain the connection between taking the property right as a unit of analysis and, as is conventional in much contemporary strategy research, taking the resource as the unit of analysis.

By a "resource" we mean anything that may be thought of as a potential advantage to a firm (Barney 1991). Resources are often composed of a (large) number of different *attributes*. For example, a PC may yield a number of different services (i.e., word-processing, music playing, access to the internet, etc.). More abstractly, the resource of a research team may produce a number of different services, including some that are of value to the firm and some that are of value only to the team (i.e., what economists call "on–the-job-consumption"). As the last example suggests, property rights may be held with respect to individual attributes of a resource.

An implication is that resources may be thought of as bundles of property rights. A firm that acquires a resource also acquires a bundle of property rights to the attributes of the resource. However, it may control these property rights to varying degrees. For example, a firm that runs a fenced and guarded parking space has fuller control over the property rights to the attributes of the parking space than a supermarket that has an open access parking space. Usually, the costs to supermarkets of fencing and guarding parking

spaces exceed the benefits. However, suppose a large movie theater opens next to a supermarket. In this situation, it may be profitable for the supermarket to protect its property rights to the parking space to a higher extent, that is, fence and guard the parking space so that non-customers (or non-payers) can be excluded. Thus, the value of a resource depends not only on its use and its scarcity, but also on the costs of controlling the property rights that make up the resource. These costs are transaction costs. In other words, resource value is influenced by transaction costs. Below we discuss these costs and how they relate to the capture and protection of property rights.

Transaction Costs and the Capture and Protection of Property Rights

Property rights over resources influence a player's ability to derive value from the attributes of a resource. A host of factors determine ability, notably the uses to which a resource is deployed. However, given a particular use of a resource, the ability to derive value from it depends only on the transaction costs that the holder faces with respect to protecting her property right against other players' attempts to capture (some of) the right. In turn, transaction costs depend on the costs of using legal and/or private means of protection. Thus, our definition of property rights is concerned with what players believe they control de facto, rather than what they are legally entitled to (Barzel 1994: 394).

Control over attributes of resources is seldom or never perfect, because protection costs are positive. In turn, this implies that most property rights may be subject to capture attempts. By "capture" we refer to resource-consuming activities of appropriating property rights from other players without compensating them. For example, two parties to a transaction may bargain and agree on a price for a resource of a certain quality; however, the supplier may deliver a resource of a lower quality. Such post-contractual opportunism on the part of the supplier amounts to capturing (some) property rights from the buyer. This situation may arise when the supplier has lower (measurement) costs of detecting the true quality of the resource than the buyer. Theft is another example of capture. So is competition, perhaps most obviously such activities as emulation, copying, reverse engineering, etc., but also price, quality and technological competition. All of these activities aim at capturing property rights without compensating the current holder.

Thus, the property rights held by a firm may be subject to capture attempts from all players in the industry, as well as from entrants and producers of substitute producers.

Given this definition of capture, we can now define "protection" in terms of capture as players' resource-consuming activities that reduce others players' possibilities of capturing property rights. A host of activities can be understood in these terms, most obviously making use of the legal system as well as establishing private orderings (Williamson 1996). However, deterring entry (Tirole 1988), establishing isolating mechanisms that make it costly to imitate resources (Wernerfelt 1984; Rumelt 1987), and constructing contracts and governance structures (Williamson 1996) also represent attempts to protect property rights against other players' capture.

Expectations, Variability, and the Duality of Capture and Protection

As the above suggests, there is, in a certain sense, a duality between capture and protection activities (see also Furubotn 1991; Skaperdas 1992), a duality that is mediated by expectations. Duality here refers to the basic assumption that all capture activity is based on expectations of how well property rights will be protected, and, conversely, all protection activities are based on expectations of the intensity and extent of capture (at any rate of protection). Thus, optimizing players who wish to protect their property rights (capture property rights) will form expectations with respect to what other players' will spend on capture (protection). For example, franchise chains, such as McDonald's, that own very valuable brand names, invest strongly in protecting their property rights to these resources, notably by building reputations for aggressively taking legal action against infringements of their brand names. Such actions constrain (franchisees') capture of brand name capital (e.g., by cheating on quality) because they influence the expectations of would-be capturers with respect to the costliness of capture. Entry-games (Tirole 1988) further exemplify the duality of capture and protection. In such games potential entrants and incumbents form expectations with respect to post-entry and pre-entry behavior, based on their knowledge of the payoffs in the game. The incumbent may, for example, influence the potential entrant's expectations by means of investing in excess capacity. In the (subgame perfect) equilibrium, expectations are such that the entrant will decide to

stay out. In this expectational equilibrium, the property rights of the incumbent to net value generated by his resources (i.e., his production capacity) become perfectly defined and protected. This illustrates the more general point that property rights are not only defined by contracts and the law, but also emerge as a result of competitive activities.

The expectations that are formed with respect to other players' capture (protection) of property rights need to take account of variability with respect to capture and protection. For example, would-be capturers have different costs of capture, and these costs may change because of technological change (e.g., advances in IT also produced computer crimes and Napster). Given that information is costly, players form expectations with respect to aggregate properties of the populations of capturers and protectors, such as the mean and variances of the underlying distributions of their costs of capture and protection. With little or no variability, forming correct estimates of these statistical moments may not require much information. Players may easily form correct expectations (that coincide). Even in this situation, capture will take place, because protectors rationally decide not to protect all property rights against all probable capture, thus accepting that some property rights are insecure. With variability, the informational demands for forming rational expectations are higher. Information is costly, and different players may have different costs of acquiring and processing information. Therefore, players will form different estimates of the relevant moments in the distributions of capture and protection costs. Expectations will not coincide, and errors will take place (if not on the average). For example, if firms compete for market share, those firms whose capture costs are overestimated by rival firms may have an advantage because rivals do not invest sufficiently in the contest over the market share.

In the stochastic framework with positive information costs sketched here, property rights are effectively insecure and may change because of strategizing. Moreover, strategizing (i.e., capture and protection activities) is an ongoing process, because players act on aggregate information and may have divergent expectations. This points to an intimate connection between competitive strategy and transaction costs (i.e., the costs of capture and protection). In order to spell this out more clearly, it is useful to examine the

implications for competitive strategy of assuming a setting where transaction costs are zero. Such a setting is supplied by the Coase theorem (Coase 1960).

A Coasian Benchmark: Implications of Zero Transaction Costs

The Coase theorem is an important mental tool in economics, where it is used in a counterfactual manner. Thus, an improved understanding of phenomena such as the firm and the law (Coase 1988) may seemingly paradoxically be obtained by examining an extreme setting in which these phenomena would have no economic role, and then ask what must be added to this setting in order to explain their existence in the real world. We argue that the same kind of thought experiment can be carried out with respect to strategic management.

A compact way of stating the Coase theorem is to say that in the absence of transaction costs, all the value that can conceivably be created from the exchange and use in production of the available resources in the economy will, in fact, be created. An underlying assumption is that players have full information. Therefore, there can be no (transaction) costs of bargaining and no costs of measuring the attributes of resources. If transaction costs are zero, property rights to (all attributes of) all resources can be defined and protected at zero cost, and the duality of protection and capture then implies that no capture will take place. In turn, this means that the costs of exchanging (including bargaining over) property rights are zero, and that all rights will therefore be moved to their highest valued uses. Therefore, total created value will be at its maximum value.

A further remarkable implication of the zero transaction cost assumption is that the creation of value may be thought of as a process that is independent of the process of appropriating created value. Specifically, one may think of the parties to transactions as first agreeing to maximize the value that can be created from their resources, and afterwards split this value through a bargaining process in which each party's property rights over the created value become defined through the prices and side-payments that emerge from bargaining (Milgrom and Roberts 1990). In other words, value creation is entirely independent of value appropriation if transaction costs are zero.

The zero transaction cost setting does not rule out firms implementing strategies and realizing competitive advantages. As Coase (1960) notes, rents may be earned when the supply of input resources is not perfectly elastic, independently of whether transaction costs exist or not. In other words, players that possess property rights to valuable resources in inelastic supply may realize a resource-based competitive advantage. Since property rights are perfectly protected, this competitive advantage is sustainable. Thus, the rudiments of the resource-based view of sustainable competitive advantage (Barney 1991; Peteraf 1993) are compatible with the zero transaction cost assumption.

However, strategic problems and opportunities are rather limited in this setting. On the one hand, creating and appropriating value can never represent true problems, because these are costless processes. Notably, bargaining over created value consumes none of the created value. On the other hand, there are few sources of competitive advantage left if transaction costs are zero. Thus, firms cannot gain a competitive advantage by possessing superior organizational designs, supplier and buyer relations, organizing capabilities, culture, etc. This is because zero transaction costs imply that any organizational arrangement is as good (i.e., efficient) as any other. Moreover, firms cannot derive a profit from exercising market power, that is, restricting supply, because all inefficiencies based on the exploitation of market power will be traded away under the assumption of zero transaction costs. This provides a first understanding of the central contention of this paper, namely that a significant part of the activity of strategic management only makes (economic) sense in a setting in which transaction costs are positive, and that understanding this part requires explicit consideration of transaction costs.

Transaction Costs and Value

The introduction of transaction costs means that the remarkable properties of the Coase Theorem cease to hold. Created value will fall short of the maximum conceivable amount. This is because it becomes costly to ascertain the attributes of resources (Barzel 1982), define property rights to attributes in contracts, and protect these property rights. These activities dissipate value relative to the Coasian ideal. Since protection becomes a

costly activity, capture may take place (depending on the costliness of the capture activity). Notably, bargaining and contract enforcement become costly so that the analytical separation between creating value and appropriating value breaks down. Ultimately, this is because, given positive transaction costs, property rights cease to be perfectly delineated and enforced. Dissipation of value results (Barzel 1997), so that the parties share less value; in other words, transaction costs influence the net value that buyers as well as firms can appropriate. In fact, value-creating transactions may not be carried out at all because of the threat of capture (e.g., Akerlof 1970; Hart 1995; Williamson 1996).

Analytically, the presence of transaction costs means that it becomes more complicated to define what is meant by value creation (cf. Brandenburger and Stuart 1996). Given zero transaction costs, value creation may be defined unambiguously as the sum of producers' and consumers' surpluses. However, the presence of transaction costs means, for example, that the reservation prices that enter into the calculation of consumers' surplus should be net of transaction costs. This is because buyers also face capture, incur costs of protecting their property rights, and may themselves capture (e.g., by downloading "free" music files from the Internet). Transaction costs also influence the supply side, for example, because firms incur protection costs and engage in costly capture. Thus, transaction costs influence virtually all costs and prices, so that consumers' and producers' surpluses are different when transaction costs are positive than they are under zero transaction costs. The notion of "value creation" should therefore not be invoked without making provision for transaction costs.

Although this brings analytical complexity, placing transaction costs center stage also brings new insights. Notably, it implies that value may be created by reducing transaction costs and the inefficiencies they cause. For example, a few years ago the sale and profits of high-end television producer, Bang & Olufsen, came under pressure, because of burglars going specifically for B&O TV sets to an increasing extent. Demand fell as a result of this. By installing start codes (as in cars) in the TV sets, B&O helped protect their customers' property rights by decreasing their cost of protection. B&O could undertake this

protection effort at a lower cost than customers. Because of this cost saving, more value was created for the parties to share. The overall principle goes much further than this. Thus, given positive transaction costs, contracts and institutions, such as governance structures, are important means to reduce transaction costs and the inefficiencies they cause. Because of the ubiquity and importance of contractual and governance choices, Williamson (1994) argues that "economizing is the best strategy." In the next sections, we argue that the ramifications of transaction costs for strategic management go beyond the choice of governance structure.

A Property Rights Framework for Competitive Strategy

In this section, we develop an economics of property rights approach to competitive strategy. From this perspective, the aim of competitive strategy is to choose the mix of capture and protection activities that maximizes firms' property rights to created value net of transaction costs. We later compare this understanding with mainstream approaches to competitive strategy.

Appropriated Value

We begin from the notion of property rights to a resource as the rights to consume, obtain income from, and alienate the attributes that are associated with the resource, and from the insight that the ability to derive value from those attributes depends on how secure rights are. We assume that firms generally seek to maximize the value of property rights, net of the costs of capturing and protecting those property rights (i.e., transaction costs). This formulation relates to the mainstream conceptualization of the central problem in competitive strategy, namely how to maximize firm-level appropriated net value by choosing the optimal combination of positioning, activities and resources; however, it stresses the importance of property rights and transaction costs in understanding the determinants of net value. Existing theory in strategic management emphasizes that the value that firms appropriate depends on a host of factors (e.g., Porter 1980; Barney 1991; Peteraf 1993; Nalebuff and Brandenburger 1996). Because of its

emphasis on transaction costs as the costs of capture and protection of property rights, property rights economics adds to the understanding of these factors, while adding new ones.

In this perspective, and taking the firm as the level of analysis, the value that the focal firm appropriates is an outcome of the factors identified in Figure 1; that is, the capture that other players undertake towards the firm, the protection undertaken by the firm, the firm's own capture of property rights, and, finally, bargaining between the firm and its various stakeholders.

XXXXXXXX Insert Figure 1 here XXXXXXXX

Many of the factors identified by existing strategic management theory can be related to this framework. Thus, bargaining power (Porter 1980) and strategic factor market issues (Barney 1986) relate to "bargaining." Factors such as internal rivalry and entry (Porter 1980), including imitative competition (Dierickx and Cool 1989), etc. may be subsumed under "capture against the firm." "Ex post barriers to competition" fall under "protection." Etc.

However, our interest here is in what the economics of property rights adds with respect to the understanding of competitive strategy. Some of this added content relates to the notion of "dissipation," that is, value is dissipated as a result of capture and protection relative to the Coasian benchmark (cf. above). Dissipation is important for strategic management because it reduces the value that can be appropriated; conversely, by reducing dissipation, more value may be appropriated. Other parts of the content that the economics of property rights adds to strategic management relate to contracting and expectations. Contracting between the players in an industry is important because it defines property rights and therefore influences bargaining and competitive outcomes. Expectations are important, because these determine players' capture and protection activities. These ideas are further discussed in the following.

Capture by the Firm

The focal firm may add to its appropriated value by engaging in capture. A necessary condition for successful capture is that property rights are insecure, because other players' optimal protection efforts leave some property rights unprotected (we discuss this in greater detail later). However, unprotected property rights do not necessarily result in capture, since although it may be costly to protect property rights, it may also be costly to capture these. Thus, capture costs must be sufficiently low. Capture by the firm may take place in a number of forms, such as moral hazard, adverse selection, hold-up, and, of course, various competitive activities. Thus, capture may be undertaken against competitors, customers, suppliers, alliance parters, etc. All forms of capture revolve around insecure property rights, the latter being insecure because of transaction costs, such as costs of drafting contracts (i.e., contracts become incomplete), costs of monitoring (which make moral hazard viable), measuring attributes (which induce adverse selection), and costs of protecting against entry and imitation (which reduce property rights to income streams from controlling certain market shares and resources).

Capture Against the Firm

Capture against the firm reduces the focal firm's appropriated value for two reasons. First, there is the income transfer from the focal firm to capturers when the latter succeed in activities such as opportunistic hold-up, moral hazard, adverse selection, or imitative competition. This is well described in the strategic management literature. Second, overall value creation is impaired by capture activities (i.e., dissipation takes place). This has been given less attention in the strategic management literature. For example, when products differ in the quality dimension but are offered at a single price, buyers may capture by means of adversely sorting among the products in the hope of finding high quality items. Such sorting dissipates value, both because of the customers' cost of capture and because capture reduces the firm's expected appropriable value. This leads it to reduce supply (Barzel 1982). Duality of capture and protection suggests that a number of practices may be interpreted as an attempt by firms to increase the value they appropriate. For example, DeBeers only offers buyers pre-sorted diamonds and requires them to take the offer or cease being a DeBeers customer. These practices have been interpreted as an

attempt to reduce capture by drastically increasing buyers' cost of capture, thus reducing dissipation of value (Kenney and Klein 1983). We turn to the issue of protection and its implications for value creation next.

The Firms' Protection Efforts

By the duality of capture and protection, protection is ultimately prompted by capture in the form of moral hazard, adverse selection, hold-up, and various competitive activities undertaken by rivals. By the same token, protecting property rights is tantamount to raising would-be capturers' costs of capture. Existing strategic management research identifies a number of ways in which this may be done, particularly making resources harder to imitate (Dierickx and Cool 1989; Reed and DeFilippi 1990) and engaging in entry-deterrence (Tirole 1988; Shapiro 1989). The economics of property rights add to this literature in a number of ways. First, it explicitly recognizes that protection is never perfect because protection is a costly activity and that capture is therefore always a possibility. Second, protection of property rights dissipates value so that more value can be realized if cost of protection can be reduced. Third, different firms may have different comparative advantages with respect to protecting property rights. Fourth, the means of protecting property rights are not limited to making resources costly to imitate and engaging in entry-deterrence, but also include such practices as contracting, sorting and other means of reducing variations in the quality of products and services (whether supplied or purchased).

As emphasized in mainstream strategic management theory, protection increases appropriated value (Barney 1991), because a protecting firm can appropriate a larger share of created value. However, there is also the effect that overall created value (i.e., appropriable value) is increased. Consider trading relations. Appropriable value may be increased by means of making property more secure through re-allocating ownership and the rights to residual incomestreams to assets (Hart 1995; Williamson 1996; Barzel 1997) and/or reducing quality uncertainty through investing in improving measurement technologies (Foss 1996) or sorting (Barzel 1982). The focal firm will undertake such protection efforts when the increase in appropriable value translates into increases in

appropriated value. Whether this will be the case depends on whether the firm has sufficient bargaining power.

Bargaining

Bargaining is central in mainstream strategic management theory as an important determinant of how much value firms can appropriate (Porter 1980; Peteraf 1993; Nalebuff and Brandenburger 1996; Coff 1999). Variables such as size, outside options, impatience, etc. are identified as important determinants of bargaining power and therefore of how value is shared. From the perspective of the economics of property rights, the outcome of a bargaining process is a delineation of property rights. Relatedly, there are property rights determinants of bargaining power in the sense that the enforcement of property rights is of crucial importance for bargaining power. For example, the presence of sunk costs does not matter for bargaining outcomes if enforcement of contracts is perfect; only outside options matter. Moreover, the economics of property rights points out that value is dissipated in the process of bargaining (unless information is symmetric) (Coase 1960).

Bargaining power is typically dealt with in static terms (e.g., Porter 1980), that is, although the use of bargaining power for strategic purposes is fully recognized, the building of bargaining power for these purposes is less recognized (but see Hart 1995; Nalebuff and Brandenburger 1996; Michaels 2000). Building bargaining power falls neatly into the present framework. Thus, bargaining power may be built in order to appropriate a larger share of created value in which case the building of bargaining power should be interpreted as capture. Alternatively, bargaining power may be built in order to protect existing shares of created value, in which case the building of bargaining power should be interpreted as protection. In any case, building bargaining power is a costly activity, because overall created value is diminished. In sum, the economics of property rights points to a number of distinctive ways in which bargaining determines appropriated value.

Summing Up

The framework developed in this section provides an approach to understanding the forces that determine the value (net of transaction costs) of property rights controlled by the firm, that is, it provides insight into appropriated value. It is consistent with key insights of strategic management theory. Yet, it adds to existing theory, by

1) stressing the costliness of capture and protection activities – which directs attention to tradeoffs that have been comparatively neglected in strategic management;

2) directing attention to dissipation of value attendant on capture and protection – which directs attention to reducing dissipation as a source of value creation; and

3) identifying sources of value appropriation that have been comparatively neglected in strategic management, such as reducing quality variation, incentive alignment.

The framework may be used for comparative purposes; thus, managers may use it to examine whether the firm controls the optimal bundle of property rights. For example, the framework may be used to assess the capture and protection costs associated with using a resource in alternative uses, and therefore the appropriable value associated with such different uses. This involves assessing important tradeoffs, notably between using resources for the purpose of protecting the focal firm's own property rights or using them for the purpose of capturing other firms' property rights. In other words, the framework has strong implications for the firm's overall resource allocation process. We next discuss implications and extensions of the framework.

Implications and Extensions of the Framework: Competitive Strategy and Sustained Competitive Advantage

Competitive Strategy as Contests over Insecure Property Rights

Mainstream strategic management theory conceptualizes competitive strategy as how to maximize firm-level appropriated value by choosing the optimal combination of positioning, activities and resources. In the economics of property rights perspective the aim of competitive strategy is to choose the mix of capture and protection activities that

maximize firms' property rights to created value net of transaction costs. Though different, these two conceptualizations are nevertheless complementary. In particular, the economics of property rights adds to the mainstream analysis of competitive strategy by stressing the role of the property rights structure for value creation and appropriation. The analysis of the Coase theorem setting showed that the scope for competitive strategy is limited when transaction costs are zero, because then property rights are completely defined and secure, including property rights to (infra-marginal) surpluses, that is, "consumers' and producers' surpluses." In the following, we examine, under the assumption that transaction costs are positive, how property rights to such surpluses become defined and protected as a result of competitive activities (i.e., contests over insecure property rights), and discuss how transaction costs influence windows of opportunity for competitive strategy. We first offer an example of how reasoning may expand the understanding of a competitive strategy. We focus on the dramatic case of "predatory pricing."

Predatory Pricing Strategies: Are Property Rights Insecure?

Consider a firm that contemplates whether to engage in the competitive strategy of predatory pricing, that is, holding price below marginal cost so that rivals are driven out of the market, and when this is accomplished, raising the price to the monopoly level. Such a predator hopes to capture rival firms' surpluses, as well as at least parts of buyers' (consumers') and suppliers' surpluses. Since predatory pricing is illegal in most countries, the property rights that the predator may establish to these surpluses are highly insecure. This may deter his attempt to establish property rights to surpluses by means of predatory pricing. However, other factors may hinder his predatory pricing strategy as well.

To see this, think of the predator as engaging with other players that have an actual (i.e., rivals, suppliers and buyers) or potential (producers of substitute products, potential entrants) stake in industry surplus in a contest over insecure property rights. What will determine whether he succeeds in capturing and protecting rights to surpluses? In the usual analysis, this depends on whether the predator can deter entry after he has driven his rivals out of the market and raised the price towards the monopoly level (Tirole 1988);

thus, successful deterrence protects the predator's property rights to surpluses. However, note that "prey" may resist capture prior to the predatory pricing strategy. Thus, potential preyed-upon firm(s) may expect predatory pricing strategies. So may buyers and suppliers. These groups of prey may benefit from entering into long-term supply contracts that will protect them against predation. For example, contracts that stipulate the prevailing price as the one under which future transacting will take place will be sufficient to stall capture in the form of predatory pricing. In fact, any contract that stipulates a price below the would-be predator's expected monopoly price will have this effect. In effect, a property rights structure to surpluses that favors the prey is defined by means of such contracting.

The property rights structure that will, in fact, be established depends on the expected contracting costs and benefits of protective contracting. If the prey expect their contracting costs (i.e., costs of negotiating and enforcing contracts) to exceed their expected benefits from contracting (Demsetz 1967), they will refrain from entering into the contracts. By the principle of duality of capture and protection, the prey's expected benefits from engaging in a contest over surplus with the predator depend on the predator's cost of capturing surplus, including his costs of protecting surplus, should he successfully capture. Thus, if prey expect that the predator cannot sustain a monopoly position because of entry after monopolizing the market through predatory pricing (i.e., his costs of protection are very high), the benefits of contracting between prey will be low. On the other hand, if prey expect the predator to be able to deter entry, contracting becomes more attractive.

In terms of the framework outlined in Figure 1, the predator will be able to increase its appropriated value when 1) prey's contracting costs are such that it is too costly for them to define property rights to the surpluses through contracting so that the predating firm can capture insecure property rights; 2) the predator's property rights are well protected because *ex post* entry is too costly; 3) suppliers' capture against the predator is costly, because the property rights established between the predator and its suppliers are well-defined and enforced at low cost (i.e., long-term, court enforceable contracts exist); 4)

buyers' coordination costs are such that they will not be able to act as a coalition relative to the predator-turned-monopolist — thus, they cannot appropriate much of the surplus through bargaining; and 5) all appropriable value is not dissipated. In sum, predatory pricing strategies will succeed when prey's contracting costs are high (i.e., condition 1) and the predator is not threatened by ex post entry (condition 2). They will yield appropriated value when in addition conditions 3) to 5) are met. A managerial implication of the example is that firms that wish to engage in pricing strategies relative to rivals (including, but not limited to, predatory pricing) should carefully examine the contractual structure in the relevant industry, because their strategic opportunities are influenced by this structure. In other words, opportunities for, and constraints on, strategizing depend on the costs of establishing and enforcing property rights. Thus, the extent to which firms can, in actuality, exercise market power is dependent upon the property rights structure in the relevant industry. We expand upon this idea in the following.

Opportunities and Constraints in Strategies Based on Market Power: The Role of Property Rights

The reasoning in the above example can be generalized using the framework in Figure 1 to other situations in which firms seek to transfer value from buyers and/or competitors to themselves by exercising market power. The example illustrates how transaction costs, property rights, and the exercise of market power are connected. As a further example of this reasoning, buyers and suppliers may enter into protective contracts when faced with the potential exercise of market power through mergers, price-discrimination, product differentiation, entry deterrence, etc. Thus, buyers and/or suppliers may, in effect, eliminate the deterring effects of entry and exit barriers by "bribing" potential entrants to enter in the case of attempted monopolization. While there is more to competitive strategy than the exercise of market power, a significant portion of competitive strategy revolves around this notion (Porter 1981). We discuss this further in the following.

Any firm trying to assess its opportunities for the capture of surpluses by means of the exercise of market power must consider that "… in anticipation of the potential of

becoming the victims of [the exercise of market power], people can take protective action to avoid the associated loss" (Barzel 1994: 407) — that is, (intended) capture gives rise to protection. Incentives to undertake protection on the part of victims exist when entry and exit barriers are high, that is, market power is not kept at bay by potential entry. Given such high barriers and if potential "victims" are sufficiently farsighted, they can anticipate their losses (if any) from strategies such as price-discrimination and merger strategies and "take protective action." The losses in question are not only the direct income transfers from victims to those firms that carry out strategies based on market power, but also the dissipation of wealth introduced by such strategies (i.e., some transactions are not carried out, wealth is spent on strategizing). However, whether protective action can, in fact, be taken depends on the victims' costs of protective contracting.

An important implication of this reasoning is that the opportunity for increasing appropriated value through the exercise of market power in an industry increases with the costs of protective contracting, that is, the costs to potential victims of defining and enforcing property rights to surpluses. The costs of protective contracting include the costs of searching for contract partners, writing and bargaining over contracts, and enforcing contracts. Many variables may potentially determine these costs, such as the number of potential contracting partners, (industry rivals and potential entrants), switching costs, the number of contingencies that the contract(s) must cover (i.e., writing costs), and the strength and availability of self-enforcement and third-party enforcement (i.e., enforcement costs). There are no simple relations between these variables and contracting costs. For example, while search costs may be low when there is only one potential contracting partner, bargaining costs may be high. Moreover, all the variables arguably vary across industries. For example, the number of contingencies that contracts cover depend on, for example, technological dynamism. Even enforcement mechanisms differ; for example, some industries, such as those in which contractual incompleteness is prevalent, rely more on self-enforcement than others.

Raising Other Players' Costs of Protection

An implication of the above is that it may pay for firms that wish to exploit market power to raise other players' costs of protection, that is, to make it costly for them to enter into contracts with each other. This complements the mainstream strategic management focus on ways in which firms can raise rivals' costs of capture, notably by building entry and mobility barriers (Porter 1980) or by making imitation costly (Barney 1991).

Product differentiation and price discrimination may be ways of raising preys' contracting costs, because these strategies essentially function as *divide et impera* strategies relative to attempts to build countervailing power. They do so because they make it more costly for other players to organize and protect against the would-be monopolizer's capture. Another way that a would-be monopolizer may raise protection costs is to engage in frequent product upgrading. This can work as a means of raising the costs of contracting between players, because buyers entering into these contracts with rival suppliers in the hope of avoiding being the victims of monopolization will have to pay for this in terms of not having access to upgraded products. The latter costs may overwhelm the former costs. In this case, a technologically dominant firm may indeed exploit its market power. Also, the assembling and announcement of allies, as when Sun gathered allies in support of Java and took out full-page advertisements listing the companies behind the Java coalition (Shapiro and Varian, 1999), may serve the purpose of deterring the attempts of prey to protect against capture. In other words, successful strategizing may proceed by means of raising the costs of contracting of other players (consumers/users, rivals) by means of product upgrading, product differentiation, or price discrimination. This would only seem to be necessary in industries where other players can make contract that deter attempts to exploit market power at low cost; if they could not, why would they engage in such resource consuming deterrence tactics? (Foss 2003).

Implications for Sustained Competitive Advantage

The key dependent variable in mainstream strategic management research is sustained competitive advantage. A firm has a sustained competitive advantage when it

is able to appropriate that part of value creation that lies above normal returns in equilibrium (Porter 1985; Peteraf 1993; Barney 1991), that is, when it holds secure property rights to this income stream. Extant theory provides a number of conditions that must be met before firms can gain sustained competitive advantage (idem). Notably, the resource-based view stresses that superior (i.e., valuable and rare) resources must also be costly to imitate and substitute if they are to give rise to sustained competitive advantage from cost- or differentiation-based strategies. While these conditions are arguably necessary, they are not sufficient for sustained competitive advantage. Thus, the economics of property rights points to more forces than those captured in the existing frameworks (Porter 1980; Barney 1991; Peteraf 1993) that may make property rights insecure. Also, a central point in this paper is that dissipation may be an important part of the cost of strategies. The framework summarized in Figure 1 therefore adds complementary insights to the extant analysis of sustained competitive advantage. These are briefly discussed in the following.

Complementary insights. Recall that the basic unit of analysis in the economics of property rights is the property right to an attribute. In this perspective, resources are bundles of property rights. Resource owners protect property rights to the attributes of resources to a varying extent. In the presence of transaction costs, an important factor that influences the extent to which property rights can be protected is the variability of the attributes of resources (Barzel 1982), because contracting over attributes that vary is costly. Capture in the form of moral hazard and adverse selection results. Protecting against such capture by sorting goods, writing contracts, monitoring employees, etc. dissipates resources. Thus, a precise assessment of the rent-earning potential of a resource should incorporate the underlying variability of attributes, because rents can be eroded in more ways than are described in the existing strategic management frameworks, that is, capture against the firm (cf. Figure 1) goes beyond the forces identified in these frameworks.

To exemplify this reasoning, imagine that a hypothetical insurance company is 1) the first to market a particular kind of accident insurance arrangement, 2) the insurance arrangement is in heavy demand, 3) the insurance concept can be protected by legal means, and 4) factor markets can only bargain for a small part of the value created by the

new strategy, and 5) buyers (i.e., customers) have weak bargaining powers. In other words, the insurance company would seem to implement "… a value creating strategy not simultaneously being implemented by any current or potential competitors and … these other firms are unable to duplicate the benefits of this strategy" (Barney 1991: 102). Thus, it realizes sustained competitive advantage. However, this may not be the case. Because of transaction costs, the price of insurance contracts cannot perfectly reflect the true accident risks of each individual who takes out insurance. Given variation in risks, some customers, namely those with high accident risks, will capture property rights to compensation. "Adverse selection" results (Akerlof 1970; Barzel 1982). It is conceivable that all of the rents from the new strategies will be eroded, first, through the adverse selection of customers, and, second, because of dissipation as the insurance firm undertakes protection in the form of costly segmenting of the customer base, so that insurance prices better reflect true risks.

To further illustrate the importance of taking account of variation (in the attributes of resources), consider the argument that a necessary condition for competitive advantage is that the value of a given resource is higher than its purchase or hire price (Barney 1986; Peteraf 1993). Whereas the usual focus is on superior information about how to deploy the resource, the economics of property rights traces the difference between price and value to variation in the attributes of resources, which makes it costly to price all resources at their value. Firms that have low costs of capture will be able to purchase resources (i.e., bundles of property rights over attributes, including the highly valued one) at prices below their value to the seller. Such low costs of capture may be caused by low costs of searching for information about the attributes of resources. In turn, low costs of searching may be caused by comparative advantages (i.e., superior efficiencies) in searching or in low opportunity costs of search. This illustrates how treating capture by the firm in a property rights perspective refines the analysis of strategic factor markets by stressing that "superior information" needs to be gathered and that this is a costly activity.

Conditions for sustained competitive advantage. The economics of property rights adds to extant perspectives on sustained competitive advantage. Two additions have been

given particular attention in the above. First, it refines the analysis of capture, thus adding forces that influence appropriated value to the existing strategic management frameworks. Second, the economics of property rights suggests that dissipation must be considered, because appropriated value depends negatively on the costly protection that firms may have to carry out and because some value-creating transactions may not be carried out in the presence of capture (cf. Akerlof 1970).

These two points refine the analysis of the conditions for sustained competitive advantage. Thus, the first point suggests that, as a general matter, there should be barriers to capture against the firm for sustained competitive advantage to obtain. This is, of course, related to the extant emphasis on, for example, imitation, substitution, entry barriers, etc. However, making transaction costs explicit draww attention to capture activities that have not been traditionally considered. There must be barriers to these activities as well, for sustained competitive advantage to obtain. The second point is unique to this application of the economics of property rights. It essentially says that the value that the focal firm can potentially appropriate cannot be eaten up by the costs of capture, protection and bargaining if it is to enjoy sustained competitive advantage. Although this may seem obvious when stated, there are virtually no references to dissipation in the mainstream strategic management literature (for an exception, see Porter 1985: 9).

Heterogeneity, variability, and new resource categories. Like strategic management research, the economics of property rights stresses heterogeneity. It is because of variability in resource attributes that transaction cost problems arise (e.g., measurement becomes costly). However, because of its emphasis on the attributes of resources and the property rights to such attributes, the economics of property rights is able to identify and throw light on new sources of competitive advantage. Thus, as has been argued, firms may have a competitive advantage from being better than the competition at limiting excess sorting, writing contracts, handling adverse selection problems, etc. What may bring firms such competitive advantages are superior capture and protection capabilities, that is, firms' relative efficiencies in capturing and protecting property rights (Skaperdas

1994). These constitute new types of resources (in addition to the traditional ones of human, organizational, financial, etc. resources).

In industries such as insurance and banking much competitive activity actually revolves around designing more efficient technologies for protecting against capture. For example, banks adopt technologies that allow them to keep track of the number of times that customers use credit and debit cards, and price customers according to this. They also invest huge amounts of money in new credit scoring systems (e.g., Experian) in the hope that these (supposedly) superior technologies will not only increase created value but also that they can appropriate large parts of this extra created value. Such protection technologies/capabilities have not been given much consideration in strategic management research. They are brought directly into focus in a property rights economics perspective.

Concluding Comments

We hope to have demonstrated in this paper that insights into transaction costs, focused by means of the economics of property rights, add significantly to the strategic management field. On the substantive side, the economics of property rights analyzes new sources of value creation, because it directs attention to reducing dissipation as a source of value creation. The economics of property rights brings new insights into constraints and opportunities for competitive strategy. This adds to the familiar five forces analysis (Porter 1980). The economics of property rights also yield complementary insights in the analysis of sustained competitive advantage by identifying new sources of rent erosion. In particular, this adds to the resource-based view.

Methodologically, the economics of property rights aligns in important ways "economizing" perspectives, such as transaction cost economics, and "strategizing" perspectives that begins from the notion of market power (Williamson 1994). The economics of property rights suggests that this distinction may be overdrawn, since there is a close connection between the presence of transaction costs and the exploitation of market power. Thus, we argued that a monopolizing strategy could be stalled by

protective contracting, if contracting (i.e. transaction) costs were sufficiently low. We also pointed out that a monopolizing firm may adopt the strategy of raising the perceived contracting costs of victims.

With the exception of Foss and Foss (2000) and Kim and Mahoney (2001), the present paper represents the first application of the economics of property rights in strategic management research. Therefore, much work remains to be done. Theoretically, there is a need for formal modeling. The economics of property rights draws attention to many variables and margins. Formal modeling is necessary to fully clarify the potential and limits of this approach with respect to understanding strategic management. There may also be a need for greater behavioral realism. In our discussion and use of the economics of property rights we have assumed maximizing behavior throughout. This assumption is far from uncontroversial. There is considerable evidence that much real-world behavior suffers from various cognitive distortions (relative to the maximization ideal) (Bazerman 2002). Ultimately, these insights need to be factored into the economics of property rights. Finally, there is a strong need for empirical research, qualitative as well as quantitative. Qualitative could deal with our suggestion that firms may engage in protective contracting, and identify episodes from business history where this has taken place. Quantitative research may be directed towards explaining performance differences as a function of variability of the contracts, sorting systems, credit rationing systems, and other protection practices that firms may adopt.

With respect to the links between the property rights structure of an industry and competitive strategy, quantitative work may focus on the interaction between the contractual structure of an industry and competitive activity in order to understand how this structure influences strategic opportunities. For example, such work may center on the transaction costs of engaging in preemptive contracting that blockades monopolizing attempts. A relevant measure would be the percentage fraction of organized consumers/customers of the whole consumer/customer base. Another relevant measure of the above transaction costs would be industry concentration (e.g., measured as the Herfindahl/Hirschman index). Time series of these may be constructed and regressed

against time series of some measure of monopolization attempts, for example, the number (and perhaps types) of antitrust cases in the relevant industry. This is merely one example, among a large potential number. We are confident that future work that applies the economics of property rights to strategic management will prove fruitful.

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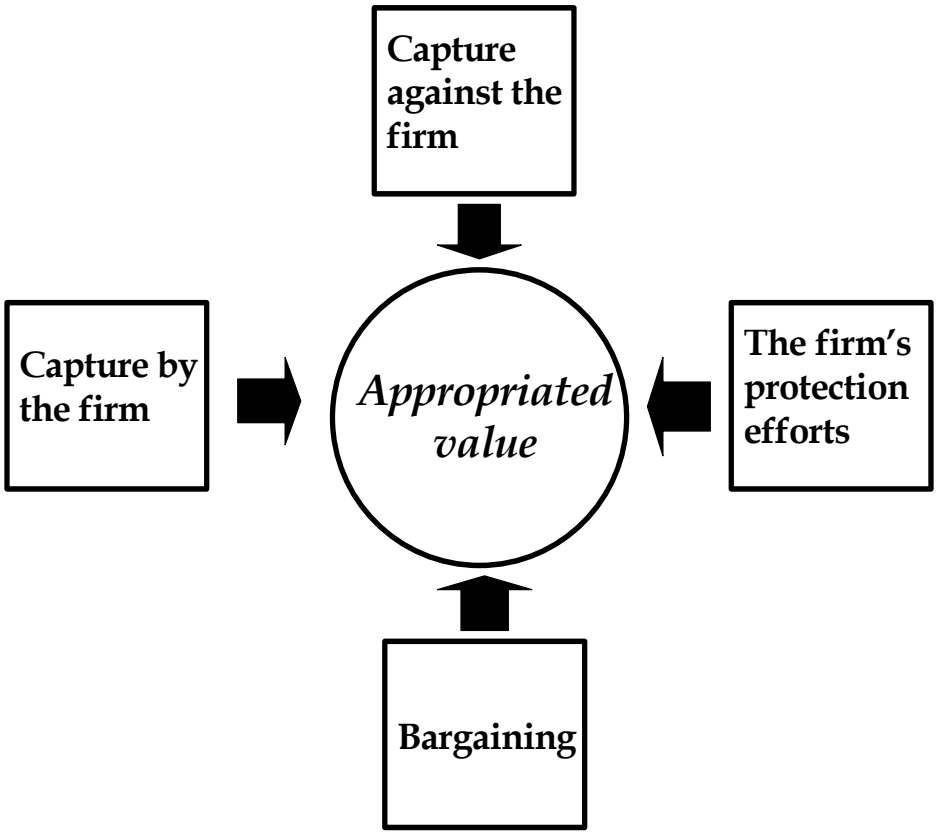
Figure 1: *The Determinants of Appropriated Value*