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STRATEGIC ASSETS AND ORGANIZATIONAL RENT

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We build on an emerging strategy literature that views the firm as a bundle of resources and capabilities, and examine conditions that contribute to the realization of sustainable economic rents. Because of (1) resource–market imperfections and (2) discretionary managerial decisions about resource development and deployment, we expect firms to differ (in and out of equilibrium) in the resources and capabilities they control. This asymmetry in turn can be a source of sustainable economic rent. The paper focuses on the linkages between the industry analysis framework, the resource-based view of the firm, behavioral decision biases and organizational implementation issues. It connects the concept of Strategic Industry Factors *at the market level with the notion of* Strategic Assets *at the firm level. Organizational rent is shown to stem from imperfect and discretionary decisions to develop and deploy selected resources and capabilities, made by boundedly rational managers facing high uncertainty, complexity, and intrafirm conflict.*

INTRODUCTION

However they phrase them, executives often examine such questions as, 'What makes us distinctive or unique?'; 'Why do some and not other customers buy from us?'; 'Why are we profitable?'. Typical answers might refer to the firm's 'technical know-how,' 'responsiveness to market needs,' 'design and engineering capability,' or 'financial resources.' The common theme among these responses is that management deems some firm-specific resources and capabilities to be crucial in explaining a firm's performance.

While empirical models may, ex post, point to a limited set of resources and capabilities that explain some of the firm's past performance, ex ante such models offer limited insight into the dimensions of competition that will prevail in the future. For managers, the challenge is to identify, develop, protect, and deploy resources and capabilities in a way that provides the firm with a sustainable competitive advantage and, thereby, a superior return on capital.

Managerial decisions concerning such resources and capabilities are ordinarily made in a setting that is characterized by: (1) **Uncertainty** about (a) the economic, industry, regulatory, social, and technological environments, (b) competitors' behavior, and (c) customers' preferences; (2) **Complexity** concerning (a) the interrelated causes that shape the firm's environments, (b) the competitive interactions ensuing from differing perceptions about these environments; and by (3) **Intraorganizational conflicts** among those who make managerial decisions and those affected by them. These conditions of uncertainty, complexity, and conflict are usually difficult to articulate or model. For example, the exact relationships between the firm's bundle of capa-

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bilities and its performance may be unclear in the present, let alone the future.[1]

By explicitly addressing these dimensions of the managerial challenge, our paper attempts to link the 'industry analysis framework' with the 'resource view of the firm' and highlight the human limitations in crafting firm strategy. We start by briefly reviewing the existing literature on the resource-based view and defining the terms we use. We proceed by articulating our view and contribution to the theory. We end by examining the theory in the context of multiple dimensions and emphasizing the heuristic nature of organizational rent creation.

LITERATURE AND DEFINITIONS

A growing body of empirical literature points to the importance of firm-specific factors in explaining variations in economic rent[2] (Jacobson 1988; Hansen and Wernerfelt, 1989). For example, Cool and Schendel (1988) reported significant and systematic performance differences among firms belonging to the same strategic group within the U.S. pharmaceutical industry. Additionally, Rumelt (1991) found that business units differ far more within than across industries. Theorists have long recognized the importance of firm differences and distinctive competencies (Selznick, 1957; Ansoff, 1965; Andrews, 1971; Hofer and Schendel, 1978). Current managerial writings such as Irvin and Michaels (1989), Wernerfelt (1989), Prahalad and Hamel (1990), Grant (1991), or Stalk, Evans, and Shulman (1992) further evidence a continuing interest in core skills and capabilities as a source of competitive advantage.

Vasconcellos and Hambrick (1989) recently conducted an empirical, ex post test of the long-standing strategy premise that an organization's success depends on the match between its strengths and the Key Success Factors (KSF)[3] in its environment. Using a range of mature industrial product industries, their empirical findings showed that organizations which rated highest on industry KSF clearly outperformed their rivals.

Although this analysis provides an important test of a core thesis in strategy, it also raises further questions. First, the Vasconcellos and Hambrick (1989) study considers the industry as the primary unit of analysis, whereas managers operate from a firm perspective. Second, the empirical analysis is ex post, whereas managers need to make resource deployment decisions ex ante, which involves uncertainty, complexity and organizational conflict. Third, it should be recognized that if all firms score high on the presumed KSF, these factors will cease to be KSF. Thus, we need to introduce sustainable asymmetry into the analysis, possibly stemming from mobility barriers, organizational inertia, heterogeneous expectations, failures in resource markets, and so forth.

The use of KSF as a core concept in strategy was recently critiqued by Ghemawat (1991a) as lacking: (1) identification (there may be many success factors, making it hard to decide which ones to focus on); (2) concreteness (ambiguity about the causal processes that tie the firm's success factors to its performance); (3) generality (to be success factors they must be undervalued; i.e., the cost benefit ratio associated with their development must be less than one); and (4) necessity (the failure of the success factor approach to account for dynamic aspects of strategy). Whereas we agree with Ghemawat (1991a) about these challenges, it should be pointed out that without uncertainty, complexity, and conflict, there would be no room for discretionary managerial decisions on strategy crafting. Only differences in initial endowments, or luck, could underlie asymmetric performance in that case.

Since KSF notions are commonly used by strategy scholars and managers alike, they need to be related more carefully to strategy theory. An emerging theoretical perspective—that of the firm as a collection of resources and capabilities

[1] Lippman and Rumelt (1982) refer to this as 'causal ambiguity.'

[2] Economists commonly distinguish among three types of rent: Ricardian rents are extraordinary profits earned from resources that are in fixed or limited supply. Pareto rents (or quasi rents) refer to the difference between the payments to a resource in its best and second best use. Lastly, Monopoly rents stem from collusion or government protection. Klein, Crawford and Alchian (1978) examine quasi-rents in the context of vertical integration.

[3] There are numerous interpretations in the Marketing and Strategic Management literature concerning the meaning of KSF. See for example Thompson and Strickland (1990).

required for product/market competition—provides one such underpinning. This Resource View of the firm (Coase, 1937; Penrose, 1959; Nelson and Winter, 1982; Teece, 1982; Rumelt, 1984; Wernerfelt, 1984; Barney, 1986a, 1986b, 1989, 1991; Dierickx and Cool, 1989a, 1989b, 1990; Teece, Pisano, and Shuen, 1990; Conner, 1991; Ghemawat, 1991b; Peteraf, 1991) focuses on factor market imperfections and highlights the heterogeneity of firms, their varying degrees of specialization, and the limited transferability of corporate resources. The resource perspective complements the industry analysis framework (Porter, 1980; Schmalensee, 1985). The latter focuses on product markets; it views the sources of profitability to be the characteristics of the industry as well as the firm's position within the industry. The resource view holds that the type, magnitude, and nature of a firm's resources and capabilities are important determinants of its profitability.

In developing the theoretical foundations, we shall build on both perspectives: The resource view of the firm and the industry analysis framework. In addition, we introduce a third perspective, that of Behavioral Decision Theory (BDT). This new field explicitly acknowledges that managers often make suboptimal choices, be it in personnel selection or in crafting their firm's strategy. BDT can shed light on how boundedly rational managers cope with the kinds of uncertainty and complexity referred to above. Unlike the resource view, which focuses on failures in resource markets, the BDT perspective highlights cognitive imperfections that, while internal to the firm (e.g., internal conflict, cognitive biases of managers, etc.[4]), have a great impact on the firm's approach to its external environment. To date, few links have been drawn between the BDT literature, the industry analysis framework and the resource view of the firm (for an exception, see Zajac and Bazerman, 1991). Before proceeding to the theory section, where these perspectives are examined and integrated, we clarify below the key terms and concepts we use.

Definitions

The firm's *Resources* will be defined as stocks of available factors that are owned or controlled by the firm. *Resources* are converted into final products or services by using a wide range of other firm assets and bonding mechanisms such as technology, management information systems, incentive systems, trust between management and labor, and more. These *Resources* consist, *inter alia*, of knowhow that can be traded (e.g., patents and licenses), financial or physical assets (e.g., property, plant and equipment), human capital, etc.[5]

Capabilities, in contrast, refer to a firm's capacity to deploy *Resources*, usually in combination, using organizational processes, to effect a desired end. They are information-based, tangible or intangible processes that are firm-specific and are developed over time through complex interactions among the firm's *Resources*. They can abstractly be thought of as 'intermediate goods' generated by the firm to provide enhanced productivity of its *Resources*, as well as strategic flexibility and protection for its final product or service. Unlike *Resources*, *Capabilities* are based on developing, carrying, and exchanging information through the firm's human capital. Itami (1987) refers to information-based *Capabilities* as 'invisible assets.' He notes that some of the firm's invisible assets are not carried by its employees but rather depend on the perceptions of the firm's customer base (as brand names may do). *Capabilities* are often developed in functional areas (e.g., brand management in marketing) or by combining physical, human, and technological *Resources* at the corporate level. As a result, firms may build such corporate *Capabilities* as highly reliable service, repeated process or product innovations, manufacturing flexibility, responsiveness to market trends, and short product development cycles.

Some of the firm's *Resources*, but especially its *Capabilities*, may be subject to market failure; that is, an inability to trade these factors in perfect markets. Multiple sources of market failure have been suggested: Williamson (1975) points to small numbers, opportunism, and information impactedness; Klein, Crawford and Alchian (1978) focus on factor specialization in terms of use or location; Caves (1984) highlights sunk costs, and suggests that a factor's value is inversely related to the extent of its specialization

[4] Penrose's (1959) seminal work also addresses some of these intrafirm issues.

[5] See Grant (1991) for a detailed description of various types of both tangible and intangible resources of the firm.

Table 1. General characteristics of strategic industry factors (SIF)*

a.	Stock type *Resources and Capabilities* that ex post are shown to be key determinants of firm profitability in an industry;
b.	Determined at the market level through complex interactions among industry rivals, new entrants, customers, regulators, innovators, suppliers, and other stakeholders;
c.	Strategic in that they are subject to market failures and may be the basis for competition among rivals;
d.	The bundle of SIF changes over time and is not known ex ante;
e.	Their development takes time, skill, and capital; they may be specialized to particular uses;
f.	Investments in them are largely irreversible (i.e., entail sunk costs);
g.	Their values deteriorate or appreciate, over time, at varying rates of change;
h.	Their pace of accumulation may be affected by a range of managerial actions (policy levers) and by the magnitude of other *Resources* and *Capabilities* that are controlled by industry rivals. One cannot easily speed up their development (e.g., doubling the investment will not usually halve the time);
i.	Their value to any particular firm may depend on its control of other factors—the complementarity property. For instance, the value of a firm's product design capability may depend upon the effectiveness of its distribution network;
j.	Not all aspects of their development and interactions will be known or controllable.

This table synthesizes notions from Penrose, 1959; Nelson and Winter, 1982; Teece, 1982; Rumelt, 1984; Wernerfelt, 1984; Barney, 1989, 1991; Dierickx and Cool, 1989a, 1989b, 1990; Teece *et. al.*, 1990; Conner, 1991; Ghemawat, 1991b; Peteraf, 1991.

for a particular use or industry setting.[6] We thus define the firm's *Strategic Assets* as the set of difficult to trade and imitate, scarce, appropriable and specialized *Resources* and *Capabilities* that bestow the firm's competitive advantage.

When the industry (or product market) is the unit of analysis, one may observe that, at a given time, certain *Resources* and *Capabilities* which are subject to market failures, have become the prime determinants of economic rents. These will be referred to as *Strategic Industry Factors* (SIF). For instance, Ghemawat (1991b) suggests that one may classify industries in terms of the 'strategic factors that drive competition in them by virtue of dominating the structure of sunk costs incurred in the course of competition.' *Strategic Industry Factors*, in this context, are characterized by their proneness to market failures and subsequent asymmetric distribution over firms. By definition, *Strategic Industry Factors* are determined at the market level through complex interactions among the firm's competitors, customers, regulators, innovators external to the industry, and other stakeholders. Their main characteristics are articulated in Table 1. It is important to recognize that the relevant set of *Strategic Industry Factors* changes and cannot be predicted with certainty ex ante.[7]

The challenge facing a firm's managers is to identify, ex ante, a set of *Strategic Assets* (SA) as grounds for establishing the firm's sustainable competitive advantage, and thereby generate **Organizational Rents**. These are economic rents that stem from the organization's *Resources and Capabilities*, and that can be appropriated by the organization (rather than any single factor). This requires managers to identify the present set of **Strategic Industry Factors** (SIF) as well as to assess the possible sets of SIF that may prevail in the future. Also, decisions on the further development of existing and new *Strategic Assets*—those that are most likely to contribute to the creation and protection of economic rents—need to be made. Not every firm will succeed with its targeted set of SA, as their applicability and relevance ultimately hinges on the complex interaction referred to above. Examples of possible SA include: Technological capability; fast product development cycles; brand management; control of, or superior access to, distribution channels; a favorable cost structure; buyer-seller relationships; the firm's installed user base; its R&D capability; the firm's service

[6] The roles of factor specialization and sunk costs in a firm's ability to earn economic rents have been examined by Klein *et al.* (1978), as well as by Baumol, Panzar, and Willig (1982).

[7] While it may not be possible to identify ex ante the relevant set of strategic assets, one can screen out those assets that are *not* strategic.

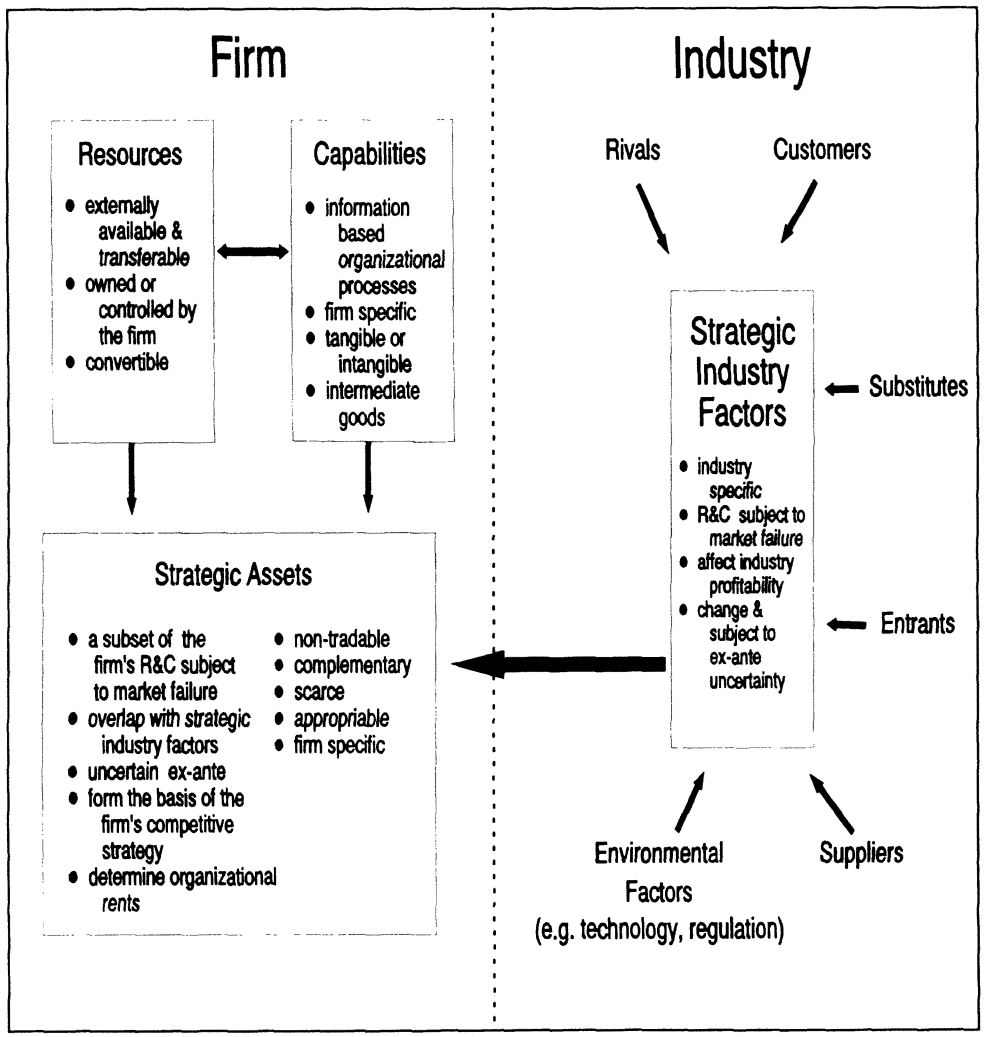

Figure 1. Key constructs

organization; its reputation and so forth. The relationships between industry determined *Strategic Industry Factors*, and firm level *Resources*, *Capabilities*, and *Strategic Assets*, are depicted in Figure 1.[8]

A RESOURCE VIEW OF STRATEGIC ASSETS

By focusing on the firm as the relevant unit of analysis, managers are concerned with the creation of a bundle of tangible as well as intangible *Resources and Capabilities* (R&C), whose economic returns are appropriable by the firm. The basic idea that underlies this perspective, cited earlier as the **Resource-Based View Of The Firm**, is that marshalling a set of complementary and specialized *Resources* and *Capabilities* which are scarce, durable, not easily traded, and difficult to imitate, may enable the firm to earn economic rents. Thus, according to the resource perspective, the value of a firm's *Strategic Assets* extends beyond their contribution to the production process. It depends on a wide range of characteristics (see Figure 2), and varies with changes in the relevant set of *Strategic Industry Factors*, as depicted by Figure 1. The supposition is that, even in equilibrium, firms may differ in terms of the *Resources and Capabilities*

[8] Note that we abandon from here on the term *Key Success Factors*, because of its many possible interpretations and uses.

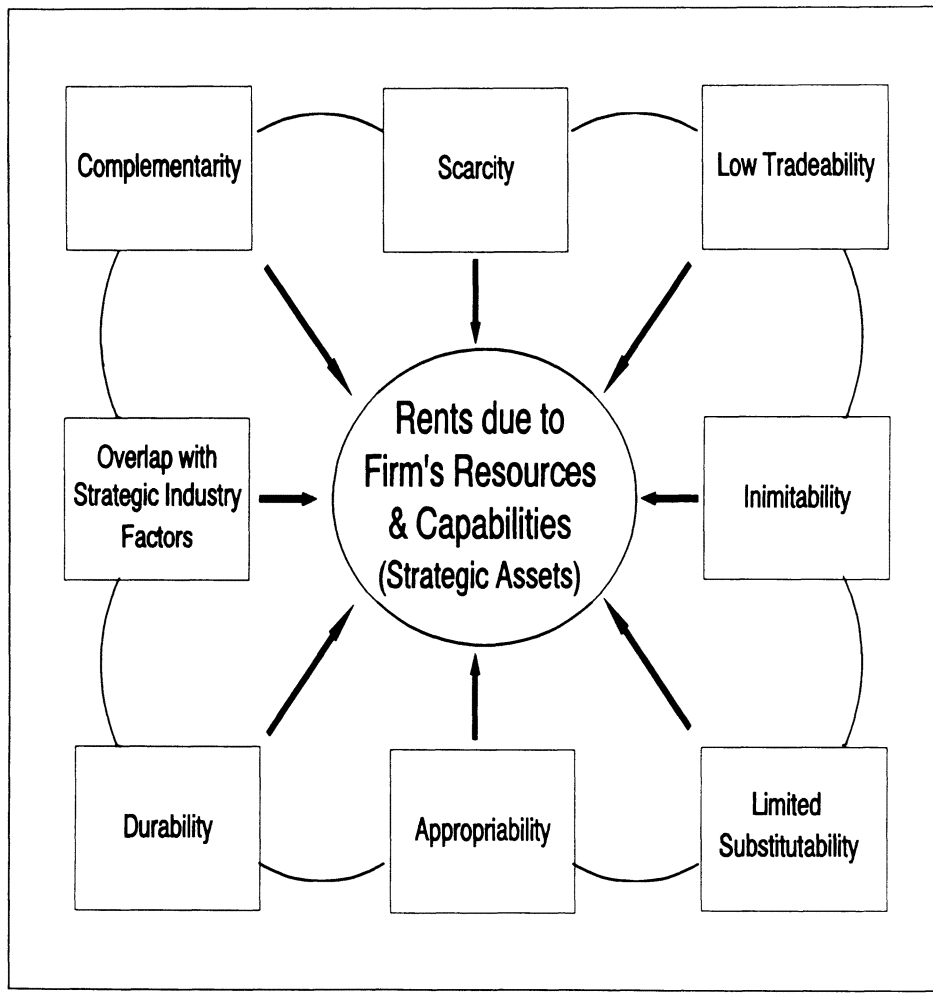

Figure 2. Desired characteristics of the firm's resources and capabilities

they control, and that such asymmetric firms may coexist until some exogenous change or Schumpeterian shock occurs (Schumpeter, 1934).[9]

Economic rents, in this setting, derive from asymmetry in initial resource endowments, resource scarcity, limited transferability of *Resources*, imperfect substitutability, and appropriability.[10] Barney (1986a, 1986b, 1989, 1991), Dierickx and Cool (1989a, 1989b, 1990), and Ghemawat (1991b) provide incisive discussions of desired attributes of such firm *Resources*. Figure 2 summarizes the primary determinants of the rent producing capacity of a firm's *Strategic Assets*.

In general, the strategic value of a firm's *Resources and Capabilities* is enhanced the

[9] The assumption of heterogeneous firms controlling resources that are not perfectly mobile (i.e., that cannot be easily bought, sold or imitated) is essential to the existence of such an equilibrium. Lippman and Rumelt (1982) and Barney (1986a, 1986b) articulate some of the reasons for imperfect imitability. These include unique historical conditions, causal ambiguity, and complexity. Ghemawat (1991b) refers to these conditions as intrinsic inimitability and therefore the firm's factor combinations are viewed as intrinsically heterogeneous. He suggests that less stringent conditions (e.g., imitation being costly but not infeasible) may be sufficient for sustainability. Relatedly, Peteraf (1991) equates resource heterogeneity to differential levels of factor efficiency.

[10] Whereas Industrial Organization economics often looks outside the firm to explain sustained superior performance by examining, for example, various market structures, alternative regulatory settings, collusive relationships, or substitute technologies, the source of rents according to the resource perspective is internal.

more **difficult they are to buy, sell, imitate or substitute**. For example, invisible assets such as tacit organizational knowledge or trust between management and labor cannot be traded or easily replicated by competitors since they are deeply rooted in the organization's history. Such firm-specific and often tacit assets accumulate slowly over a period of time (i.e., they are history-dependent state variables. See Dierickx and Cool 1989a, 1989b, 1990). The focus here is not just on the material aspects of *Resources and Capabilities*, but especially on their transformational characteristics. These are often specific to a firm and/or to a particular industry at a given point in time. This idiosyncracy makes them difficult to imitate and their development time cannot be easily compressed.

In addition, the applicability of the firm's bundle of *Resources*, and *Capabilities* to a particular industry setting (i.e., the overlap with the set of *Strategic Industry Factors*), will determine the available rents. Managers influence the development and deployment of *Strategic Assets* by adopting a process perspective (in contrast to an input–output model). This perspective recognizes distinct phases of development, the importance of feedback, and the need for vision. It also entails careful scripting of how *Resources*, information and people are combined and sequenced over time in order to evolve specific *Capabilities*. In this sense, the viewpoint is essentially an institutional one (de Gregori, 1987). Dierickx and Cool (1989a, 1989b) especially highlight the importance of processes for asset accumulation and their impact on inimitability of the firm's *Resources*.

The firm's *Strategic Assets* may further exhibit **complementarity** in deployment or application (Barnard, 1938); that is, the strategic value of each asset's relative magnitude may increase with an increase in the relative magnitude of other *Strategic Assets* (also known as positive externalities; see Dierickx and Cool, 1990). An example is Teece's (1986) notion of co-specialized assets—those for which there is a bilateral dependence in application. Under complementarity, the combined value of the firm's *Resources & Capabilities* may be higher than the cost of developing or deploying each asset individually. Conversely, the strategic value of the firm's *Resources & Capabilities* declines to the extent that they are substitutes.[11]

The more **firm-specific, durable and scarce** *Strategic Assets* are, the more valuable to the firm can be their deployment, for at least three reasons. First, if few other firms have R&C that are in high demand and are difficult to imitate, fewer firms will pursue market strategies based thereon, since others would find these strategies too costly and time consuming.[12] Second, firm-specificity and the presence of transaction costs suggest that the value of some *Resources* and *Capabilities* will be lower for certain firms. Third, the more durable they are, the smaller will be the investment required to offset their depreciation, if any.[13]

These characteristics of the firm's assets emphasize the trade-off between the specialization of assets (a necessary condition for rent) and the robustness of these assets across alternative futures (see Schoemaker, 1992a). The trade-off between specialization and robustness is only partial, as specialization can be of two kinds: (1) limited use or (2) unique use. Limited use entails reduced robustness in that the asset is of little value in particular states of nature. Uniqueness, in contrast, is defined relative to other players (rather than to states of nature) and need not be restricted in scope or by circumstance. Due to competitive pressures, the kinds of specialization that can yield positive rents tend to entail limited use (and hence, risk). Uniqueness, in contrast, may reflect historical accident or heterogeneous expectations as the primary reasons for non-imitation.

In essence, firms develop specialized assets to enhance profits at the price of reduced flexibility in the face of Schumpeterian shocks. This trade-off is, in our view, a core issue in deciding which R&C to develop. Sustainable advantage is obtained when existing and potential competitors

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[11] Dierickx and Cool (1989b, 1990) have introduced the notion of complementarity in asset accumulation (or interconnectedness) which refers to economies of scope in asset accumulation. This distinction highlights the dynamic nature of asset accumulation, whereas complementarity in asset deployment is a static notion.

[12] The strategic value of R&C may not lie merely in the scarcity of natural resources such as land and oil reserves, but also in the ability to deploy concurrently in multiple uses such invisible firm-specific assets as culture, reputation, and relationships with suppliers and buyers.

[13] Unlike physical capital, most capabilities are enhanced with use as more experience is gained.

(new entrants) lack either the ability or desire to imitate the rent-producing R&C. A firm's managers can lessen the incentives of competitors to imitate or develop close substitutes by, for example, erecting entry or mobility barriers or by building 'isolating mechanisms' (Rumelt, 1984). Like Ghemawat (1986), we focus here on aspects that relate to the firm's superior **access to** *Resources*. (Of course, competitive advantage may also arise from size and scope, as well as legal or other restrictions on competition.)

Given the competitive and changing context in which managers must decide which R&C to develop as their firm's basis for competition, it is doubtful that decisions about which SA to develop and deploy can be optimally deduced from a general normative theory. More likely, continually changing heuristics will emerge that strive to better incorporate the uncertainty, complexity and organizational conflicts confronting managers.[14] As such, our view extends that of Porter's (1980) by emphasizing not only the industry environment in determining future profit but especially the importance of managerial discretion and innovation in SA decisions. The latter are by no means foregone conclusions; the external environment is only one part of the economic rent story.

DECISIONS ABOUT STRATEGIC ASSETS

In making investment decisions about *Strategic Assets*, managers face the daunting tasks of (1) anticipating possible futures, (2) assessing competitive interactions within each projected future, and (3) overcoming organizational inertia and internal dispute in order to realign the firm's bundle of SA. Recent psychological literature (Kahneman, Slovic, and Tversky, 1982) suggests that managers will approach this uncertainty, complexity, and conflict with considerable bias, illusion, and suboptimality. Even if highly simplified and abstracted, the associated SA decisions may not be solvable in closed-form equilibrium terms (although, see Camerer, 1991).[15]

Uncertainty

Under rational expectations, the SA challenge will largely vanish as managers will hold the same expectations about the set of SIF that will prevail in the future. Since they will maximize the expected value of returns, their initial SA endowments are the only source of variance regarding their behavior. In reality, however, managers face considerable uncertainty and ambiguity, stemming from new proprietary technologies, economic and political trends, competitive actions, changes in societal values, and corresponding shifts in consumer preferences. Pervasive uncertainty and ambiguity make it probable that managers will hold diverse expectations about such key variables as demand growth, price levels, costs, and consumer tastes. Further, their judgements and choices are likely to exhibit idiosyncratic aversions to risk and ambiguity (Kahneman and Tversky, 1979; Einhorn and Hogarth, 1986).[16]

The joint effects of heterogeneous beliefs and manager-specific decision processes (and biases) make equilibrium analyses hard to conduct for both managers and researchers. Coupled with overconfidence (Lichtenstein, Fischhoff, and Phillips, 1982) and a penchant for confirming over disconfirming evidence (Klayman and Ha, 1987), *Strategic Assets* choices under uncertainty may entail opposing biases whose net effects are hard to assess. For example, ambiguity aversion and underweighting of medium and high probabilities will normally lead to risk aversion. However, this tendency may be countered or mitigated by overconfidence and ambitious targets, either of which can induce strong risk-seeking.[17] Consequently, the final SA investment decisions are

[14] Economic rent may accrue to firms with superior or more timely heuristics, thereby capitalizing on variable as well as bounded rationality (see Schoemaker, 1990).

[15] For example, when modeled as a differential game, the problem will probably not be tractable. Closed or even open-loop solutions are generally unattainable when confronted with a multiplicity of state and control variables in noncooperative multiplayer games. An added complication in our case arises from the difficulty of specifying the game in terms of the number of players, as well as the state, action, and pay-off spaces.

[16] When gambles entail well-defined probabilities, most people exhibit risk aversion (except for low probability and pure loss gambles). If probabilities are ill defined (the case of ambiguity), even greater risk-aversion is encountered due to people's dislike to unknown risk. Most managerial decisions entail risk as well as ambiguity.

[17] The predicted bias is toward risk-*seeking* for R&C that are deemed to be below some chosen reference point and toward risk-*aversion* for those that exceed this aspiration level (see Kahneman and Tversky, 1979). Thus, unrealistic goals or ambitious targets will likely result in unduly risky R&C decisions. For additional biases and indeterminacies in risk-taking see MacCrimmon and Wehrung (1986).

hard to predict without detailed micro-level knowledge of managers' reference points, problem framing, degrees of overconfidence, nonlinear weighting of probabilities, etc. (see Schoemaker, 1992b).

A bounded rationality view (Simon, 1979) may nonetheless predict some overriding biases. For example, managers will probably over-emphasize past *Strategic Industry Factors*, and the SA associated therewith. People generally tend to repeat what was rewarded before. Consequently, managers might be too focused on past competitors and pay too much attention to recent experience. The latter is known as the recency effect which is closely linked to the more general notion of the availability heuristic (Tversky and Kahneman, 1974). If perceptions about strategy are unduly anchored on past SA, rent opportunities arise for firms that approach the future more flexibly and imaginatively. These may be new firms or incumbent ones that vigorously challenge their own beliefs. Past success may especially bias managers toward an illusion of control (Langer, 1975). Recent emphasis on the strategic importance of continual organizational learning (de Geus, 1988; Senge, 1990) underscore the special challenges posed by uncertainty and complexity, whether the firm has been successful or not.

Complexity

To keep SA decisions within cognitive bounds, managers must often and extensively simplify (Russo and Schoemaker, 1989). The kinds of simplification they engage in may lead to additional biases. Tversky and Kahneman (1981) offer persuasive examples of how simplified framing (such as isolating alternatives or expressing outcomes relatively) can lead to inconsistent decisions. Specifically, frames may (1) bound out important futures, competitors, or new technologies; (2) dictate the reference point relative to which SA are measured (e.g., Chrysler comparing its quality control capability to GM's rather than to Japan's Honda); and, (3) specify the yardsticks or metric used to measure SA (e.g., measuring quality in terms of defective parts per thousand vs. number and type of consumer complaints).

Managers' attempts to understand present and past SIF may be hampered by additional biases. In hindsight, chance and skill are often confused (Fischhoff and Beyth, 1975). Judgments about correlation or relative importance frequently miss important cues and interactions (Jennings, Amabile, and Ross, 1982; Hammond, 1955; Hogarth, 1987), especially if not driven by a causal theory. Imputations about causality, in turn, may be overly sensitive to temporal and spatial contiguity, covariation, and similarity of cause and effect (Einhorn and Hogarth, 1986). Unless aided by formal analyses, managers may easily misconstrue the industry's success factors and persist in erroneous beliefs about their firm's SA until proven wrong by competitors.

Lindblom (1959) and Quinn (1980), among others, have highlighted the incremental way in which managers usually deal with complexity. Writers on policy formation have, in general, emphasized the contextual and labile nature of organizational decision making (Mintzberg, 1978; Isenberg, 1987, MacCrimmon and Wehrung, 1986). An example is Cohen, March, and Olsen's (1972) garbage can model, in which problems, solutions, hidden agendas, coalitions and so on mesh in complex ways to yield decisions. Mintzberg (1978) and Mintzberg and Waters (1983) further highlight the role of the firm's unconscious past. They view a firm's realized strategy (e.g., its SA decisions) to be a blend of rational, or at least intentional choices, and implicit or tacit forces within organizations (see also Hamel and Prahalad, 1989). The litany of biases mentioned above serves to underscore our main point here: Discretionary managerial decisions that relate to *Strategic Assets* are affected by a wide range of cognitive biases about the handling of uncertainty and complexity. This, in turn, creates suboptimality, imperfect imitability, and organizational rents for some firms.

Conflict

Intraorganizational conflict is another serious challenge encountered by management in making SA decisions. Any change in the existing bundle of SA may benefit some employees and hurt others. Not only do complex agency problems (Jensen and Meckling, 1976; Fama and Jensen, 1983a, 1983b) exist in obtaining the necessary information and judgments concerning SA selection, but also issues of cooperation, trust, and

competence must be factored into the decision of which *Resources and Capabilities* to develop and how. Allison's (1971) classic treatment of the Cuban Missile Crisis illustrates clearly the importance of organizational and political dimensions, in addition to rational ones, for setting policy.

The key point is that organizations are complex social entities with their own inertia and constraints. The issue is not simply to select the subset of *Resources* and *Capabilities* that is most likely to yield high rents, but to make organizational participants an integral part of such decisions. Among other things, this poses problems of nestedness; for example, SBU level choices impact divisional as well as corporate *Capabilities* and vice versa. The convenient view that organizations have carefully solved their principal-agent problems and need only select from the implicit market for *Resources* and *Capabilities*, which and how much of each to buy, denies the crucial role of asymmetric *Resources* and *Capabilities* as well as the complex decisions managers face.

In sum, as the firm's environment changes, different sets of *Strategic Assets* may have to be developed by firms. Core *Capabilities*, by definition, cannot be purchased off the shelf but require strategic visions, development time, and sustained investment. Decisions about *Strategic Assets* (i.e., the subset of *Resources* and *Capabilities* that bestows sustainable competitive advantage) are among the most complex that managers encounter. They are characterized by high uncertainty, complexity, and conflict, to an extent that defies optimization. Indeed, this lack of solvability is a necessary condition for their strategic importance and positive rent potential.

STRATEGIC ASSETS DEVELOPMENT: A MULTIDIMENSIONAL VIEW

The above analysis of *Strategic Assets* underscores the need for a multidimensional approach; one that includes internal and external elements, static and dynamic aspects, and rational as well as behavioral considerations.[18] Each perspective sheds a different light on the *Strategic Assets* challenge as captured below.

Industry Analysis excels in assessing the profit potential of various industry participants by focusing on the external competitive forces and barriers that prevail in different product/market segments. Further, it is essential in deriving a set of *Strategic Industry Factors*. It is incomplete, however, in that it treats the firm largely as a black box (i.e., a faceless, unitary actor), while deemphasizing the role of managerial discretion. Assuming high rationality and substitutability of executive talent, industry analysis logically deduces the end-game consequences of differences in participants' initial conditions (for a particular industry structure, technology, and action space). Thus, the focus is on rent distribution in equilibrium, given initial firm asymmetries, industry structure, and known rules of the game.

The Resource View, in contrast, highlights imperfections in factor markets, resulting in systematic firm differences. Limited transferability of *Resources*, scarcity, complementarity and appropriability in turn give rise to rent opportunities. Economic rents, in this view, derive from properties unique to the firm's *Resources* and *Capabilities*. The focus is thus more internal and institutional, recognizing the often slow and evolutionary path by which firm-specific *Capabilities* develop (e.g., see Nelson and Winter, 1982.) These *Capabilities* may include executive talent, culture and other less tangible dimensions that in standard models of rational behavior have received limited attention.[19] Also, the exclusive focus on equilibrium and structural dimensions is absent. Instead, disequilibrium and process dynamics loom primary.

Behavioral Decision Theory (BDT) complements the resource perspective in explicitly acknowledging bounded rationality and, in particular, the crucial roles of problem framing and heuristic decision-making. Differences in decision frames and heuristics give rise to 'variable rationality' among and within players over time (see Schoemaker, 1990). A rational end-game

[18] While we hold that these dimensions need to be reflected in any comprehensive analyses of firm's *Strategic Assets*, there may well be other relevant dimensions (e.g., ecological, sociological, political, anthropological). To integrate these additional dimensions, however, is beyond our present scope.

[19] Some of this is changing. For instance rational models have been developed concerning the role of culture (Camerer and Vepsalainen, 1988) and reputation (Weigelt and Camerer, 1988).

analysis would largely ignore such factors since it generally assumes constant rationality.[20] In actuality, however, managers are hardly playing a well-defined end game. Logical consequences of moves are seldom ascertainable and equilibrium solutions are not usually transparent in complex strategy decisions. Because the rules of the game, the number of players, and the action space are seldom fixed, creative changes and innovations are permitted, which makes predictions of outcomes especially difficult.

Reliance on heuristics and on a limited repertoire of responses, punctuated by occasional bold or creative moves, introduces complexities whose net effects are hard to assess. Players generally harbor imperfect comprehensions of the deeper relationships operative in the industry or, indeed, within their firm. In this view, strategy becomes partly a shot in the dark and partly an exercise in heuristic creativity aimed at overcoming biases and blind spots (Zajac and Bazerman, 1991). These biases will not be just individual or cognitive; many concern group biases (e.g., groupthink) and may be affective in nature, such as wishful thinking, dissonance reduction, etc. (see Russo and Schoemaker, 1989).

The BDT perspective is especially important in light of the pervasive *uncertainty and complexity* surrounding SA decisions. Any industry or market segment will undergo Schumpeterian shocks such that most equilibria (if computable at all) will have finite lives. Robust strategies thus must pay attention to disequilibrium, uncertain futures and ambiguous relationships. Without ambiguity and complexity, the SA question would perhaps be reducible to a rational end-game analysis. In practice, however, it is about the fashioning and deployment of firm-specific *Capabilities* whose rents depend partly on unfathomable futures.

In terms of theoretical underpinnings, various attempts have been made to model the effects of uncertainty or ambiguity on individual decision making (Einhorn and Hogarth, 1986) as well as markets (Kleindorfer and Kunreuther, 1982). The dimension of complexity has yet to see significant formal treatment (although, see Rosenhead, 1980). In psychology, however, various models and techniques exist to depict how people represent complex problem situations, ranging from scripts and schema to cognitive maps (for a review see Klayman and Schoemaker, 1992). Also, numerous heuristic guidelines exist for managers on how to cope with and manage complexity, such as scenario analysis (Wack, 1985a, 1985b; Schoemaker, 1991).

Our further emphasis on *conflict and organization inertia* brings to the fore implementation and other intraorganizational problems in the development and deployment of *Strategic Assets*. The resource and behavioral perspectives refer to these organizational issues but do not develop them. Principal-agent theory provides a highly rational treatment of incentive problems, with abstract links to the origin, scope and organizational form of firms (e.g., partnerships vs. corporations). Transaction cost economics focuses more generally on organizational structure (e.g., U- vs. M-form) and scope, while placing greater emphasis on bounded rationality and internal firm complexity. Organization theory, in contrast, has been more descriptive and process oriented in seeking to understand how firms control and coordinate activities. Rather than making conflict or transactions the unit of analysis, organization theory focuses on systemic aspects, in particular the interactions among such subsystems as the firm's structure, processes, rewards, culture, people and technology. These can explain firm inertia and the adaptation difficulties encountered when the environment changes and managers attempt to redirect their firm's *Strategic Assets*.

CONCLUSION

We have sought to replace the strategy field's concept of Key Success Factors with the notions of: (1) ***Strategic Industry Factors***, the set of *Resources & Capabilities* that has become the prime determinant of economic rents for industry participants; and (2) ***Strategic Assets***, a firm level construct, referring to the set of firm specific *Resources* and *Capabilities* developed by management as the basis for creating and protecting their firm's competitive advantage. The rent producing capacity of these *Strategic Assets* depends, in part, on their own unique character-

[20] Variable rationality refers to actors differing in the degree to which they exhibit bounded rationality. A rational end-game analysis is one in which all possible moves and countermoves are identified and evaluated.

istics as well as on the extent to which they overlap with the industry-determined *Strategic Industry Factors*.

Building on insights from the Resource View of the firm, and Behavioral Decision Theory, we identified important theoretical features of *Strategic Assets* and the conditions under which they could produce organizational rents. The managerial difficulty of identifying, developing, and deploying an appropriate mix of SA was highlighted in the discussion. Owing to uncertainty, complexity, and conflict (both in and outside the firm), different firms will employ different *Strategic Assets*, without any one set being provably optimal or easily imitated. At best, managers can devise heuristic solutions that navigate between the numerous cognitive and affective biases characteristic of humans and organizations. We articulated a multidimensional view for the crafting of *Strategic Assets*, in relation to market-determined *Strategic Industry Factors*. Its dimensions consist of (1) industry analysis, (2) the resource perspective and (3) behavioral decision theory. The latter perspective emphasizes the pervasive uncertainty and complexity faced by managers, often resulting in suboptimal *Strategic Assets* decisions. In this context, the role of intraorganizational conflict and inertia were identified as important barriers to implementing changes to the firm's bundle of *Strategic assets*.

Throughout, *Strategic Assets* decisions were examined in light of resource market imperfections, bounded and variable rationality within and across firms. If optimal solutions were derivable for a firm's *Strategic Assets*, the latter would largely vanish. Barring market or cognitive imperfections, all firms would envision and pursue an optimal strategy with zero expected rents. As such, the existence of *Strategic Assets* and presence of bounded rationality are closely linked. A normative *Strategic Assets* theory that could systematically lead to the creation of sustainable rents is implausible due to competitive pressures. Our paper instead sought to develop a behavioral view of *Strategic Assets*, with limited prescriptive advice on how to target, develop and deploy firm-specific *Strategic Assets*.

In concluding, it may be useful to place our view of organizational rent creation by firms within the larger framework articulated by Conner (1991). We share with the resource view, as well as the transaction cost view, an emphasis on the uniqueness and limited mobility of *Resources and Capabilities*. However, it is not market power (IO view) *per se*, or greater operating efficiency (neoclassical and Chicago school views) that produces organizational rents, although these may be consequences. In this paper uniqueness and low mobility of *Resources* and *Capabilities* stem from imperfect and hard to predict decisions by boundedly rational managers facing high uncertainty (a la Schumpeter), complexity, and intrafirm conflict. We thus strengthen the resource view by adding behavioral decision making biases and organizational implementation aspects as further impediments to the transferability or imitability of a firm's *Resources* and *Capabilities*.

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REFERENCES

Allison, G. *Essence of Decision: Explaining the Cuban Missile Crisis*, Little, Brown, Boston, MA, 1971.

Andrews, K. R. *The Concept of Corporate Strategy*, Irwin, Homewood, IL, 1971.

Ansoff, H. I. *Corporate Strategy*, McGraw Hill, New York, 1965.

Barnard, C. I. *The Functions of the Executive*, Harvard University Press, Cambridge, MA, 1938.

Barney, J. B. 'Strategic factor markets: Expectations, luck, and business strategy', *Management Science*, **42**, 1986a, pp. 1231–1241.

Barney, J. B. 'Organization culture: Can it be a source of sustained competitive advantage?', *Academy of Management Review*, **11**, 1986b, pp. 656–665.

Barney, J. B. 'Asset stocks and sustained competitive advantage: A comment', *Management Science*, **35**, 1989, pp. 1511–1513.

Barney, J. B. 'Firm resources and sustained competitive advantage', *Journal of Management*, **17**(1), 1991, pp. 99–120.

Baumol, W. I., J. C. Panzar and R. D. Willig. *Contestable Markets and the Theory of Industry*

Structure, Harcourt Brace Jovanovich, New York, 1982.
Camerer, C. F. 'Dose strategy research need game theory?', *Strategic Management Journal*, **12**, 1991, pp. 137–152.
Camerer, C. F. and A. Vepsalainen. 'The economic efficiency of corporate culture', *Strategic Management Journal*, **9**, 1988, pp. 115–126.
Caves, R. E. 'Economic analysis and the quest for competitive advantage', *American Economic Review*, **74**(2), 1984, pp. 127–132.
Coase, R. H. 'The nature of the firm', *Economica*, **4**, 1937, pp. 331–351.
Cohen, M. D., J. G. March and J. P. Olsen. 'A garbage can model of organizational choice', *Administrative Science Quarterly*, **17**, 1972, pp. 1–25.
Cool, K. and D. Schendel. 'Performance differences among strategic group members', *Strategic Management Journal*, **9**(3), 1988, pp. 207–224.
Conner, K. R. 'A historical comparison of resource-based theory and five schools of thought within industrial organization economics: Do we have a new theory of the firm?', *Journal of Management*, **17**(1) 1991, pp. 121–154.
de Geus, A. 'Planning as learning', *Harvard Business Review*, March-April, 1988, pp. 70–74.
de Gregori, T. R. 'Resources are not; they become: An institutional theory', *Journal of Economic Issues*, **21**, 1987, pp. 1241–1263.
Dierickx, I. and K. Cool. 'Asset stock accumulation and sustainability of competitive advantage', *Management Science*, **35**, 1989a, pp. 1504–1511.
Dierickx, I. and K. Cool. 'Competitive strategy, resource accumulation and firm performance,' Mimeo, INSEAD, May 1989b.
Dierickx, I. and K. Cool. 'A resource based perspective on competitive strategy', Mimeo, INSEAD, September, 1990.
Einhorn, H. and R. Hogarth. 'Judging probable cause', *Psychological Bulletin*, **99**, 1986, pp. 3–19.
Fama, E. F. and M. C. Jensen. 'Agency problems and residual claims', *Journal of Law and Economics*, **26**, 1983a, pp. 327–349.
Fama, E. F. and M. C. Jensen. 'Separation of ownership and control', *Journal of Law and Economics*, **26**, 1983b, p. 301.
Fischhoff, B. and R. Beyth. 'I knew it would happen—Remembered probabilities of once-future things', *Organization Behavior and Human Performance*, **13**, 1975, pp. 1–16.
Ghemawat, P. 'Sustainable advantage,' *Harvard Business Review*, **64**, 1986, pp. 53–58.
Ghemawat, P. *Commitment*, The Free Press, New York, 1991a.
Ghemawat, P. 'Resources and strategy: An IO perspective', Mimeo, Harvard Business School, May 1991b.
Grant, R. B. 'A resource based theory of competitive advantage: Implications for strategy formulation', *California Management Review*, **33**(3), 1991, pp. 114–135.
Hamel, G. and C. K. Prahalad. 'Strategic intent', *Harvard Business Review*, **89**(3), 1989, pp. 63–76.
Hammond, K. R. 'Probabilistic functioning and the clinical method', *Psychological Review*, **62**, 1955, pp. 255–262.
Hansen, G. S. and B. Wernerfelt. 'Determinants of firm performance: The relative importance of economic and organizational factors', *Strategic Management Journal*, **10**, 1989, pp. 399–411.
Hofer, C. W. and D. Schendel. *Strategy Formulation: Analytical Concepts*, West Publishing Company, St. Paul, MN, 1978.
Hogarth, R. M. *Judgment and Choice*, Wiley, Chichester, 1987.
Irvin, R. A. and E. G. Michaels III. 'Core skills: Doing the right things right', *The McKinsey Quarterly*, Summer 1989, pp. 4–19.
Isenberg, D. J. 'The tactics of strategic opportunism', *Harvard Business Review*, **65**(2), March 1987, pp. 92–97.
Itami, H. *Mobilizing Invisible Assets*, Harvard University Press, Boston, MA, 1987.
Jacobson, R. 'The persistence of abnormal returns', *Strategic Management Journal*, **9**, 1988, pp. 41–58.
Jennings, D. L., T. M. Amabile and L. Ross. 'Informal covariation assessment: Data-based versus theory-based judgments'. In D. Kahneman, P. Slovic and A. Tversky (eds), *Judgment Under Uncertainty: Heuristics and Biases*, Cambridge Press, Cambridge, MA, 1982, pp. 211–230.
Jensen, M. C. and W. Meckling. 'Theory of the firm: Managerial behavior, agency costs and ownership structure', *Journal of Financial Economics*, 1976, pp. 305–360.
Kahneman, D. and A. Tversky. 'Prospect theory', *Econometrica*, **47**(2) 1979, pp. 263–292.
Kahneman, D., P. Slovic and A. Tversky. *Judgment Under Uncertainty: Heuristics and Biases*, Cambridge Press, Cambridge, MA, 1982.
Klayman, J. and P. J. H. Schoemaker. 'Thinking about the future: A cognitive perspective', *Journal of Forecasting*, 1992 (in press).
Klayman, J. and Y. Ha. 'Confirmation, disconfirmation, and information in hypothesis testing', *Psychological Review*, **94**(2), 1987, pp. 211–228.
Klein, B., R. Crawford and A. Alchian. 'Vertical integration, appropriable rents, and the competitive contracting process', *Journal of Law and Economics*, **21**, 1978, pp. 297–326.
Kleindorfer, P. R. and H. Kunreuther. 'Misinformation and equilibrium in insurance markets'. In J. Finsinger (ed.), *Issues in Pricing and Regulation*, Lexington Books, Lexington, MA, 1982, pp. 67–90.
Langer, E. 'The illusion of control', *Journal of Personality and Social Psychology*, **32**, 1975, pp. 311–328.
Lichtenstein, S., B. Fischhoff and L. D. Phillips. 'Calibration of probabilities: The state of the art to 1980'. In D. Kahneman, P. Slovic and A. Tversky (eds), *Judgment Under Uncertainty: Heuristics and Biases*, Cambridge Press, Cambridge, MA, 1982, pp. 306–334.
Lindblom, C. E. 'The science of muddling through', *Public Administration Review*, **19**, 1959, pp. 79–88.
Lippman, S. and R. Rumelt. 'Uncertain imitability:

An analysis of interfirm difference in efficiency under competition', *Bell Journal of Economics*, 1982, pp. 418–438.

MacCrimmon, K. R. and D. A. Wehrung. *Taking Risks*, Free Press, New York, 1986.

Mintzberg, H. 'Patterns in strategy formation', *Management Science*, **24**, 1978, pp. 934–948.

Mintzberg, H. and J. A. Waters. 'The mind of the strategist(s)'. In S. Srivastva, (ed)., *The Executive Mind*, Jossey-Bass, San Francisco, CA, 1983, pp. 58–83.

Nelson, R. and S. Winter. *An Evolutionary Theory of Economic Change*, Harvard University Press, Cambridge, MA, 1982.

Penrose, E. T. *The Theory of Growth of the Firm*, Wiley, New York, 1959.

Peteraf, M. A. 'The cornerstone of competitive advantage: A resource based view', Northwestern University, J. L. Kellogg Graduate School of Management, General Motors Research Center for Strategy in Management, Discussion Paper No. 90–29, March, 1991.

Porter, M. *Competitive Strategy*, Free Press, New York, 1980.

Prahalad, C. K. and G. Hamel, 'The core competence of the corporation', *Harvard Business Review*, **68**(3), 1990, pp. 79–91.

Quinn, J. B. *Strategies for Change: Logical Incrementalism*, Irwin, Homewood, IL, 1980.

Rosenhead, J. 'Planning under uncertainty (II): A methodology for robustness analysis', *Journal of Operational Research Society*, **31**, 1980, pp. 331–341.

Rumelt, R. P. 'Towards a strategic theory of the firm'. In R. B. Lamb, (ed.), *Competitive Strategic Management*, Prentice Hall, Engelwood Cliffs, NJ, 1984, pp. 556–570.

Rumelt, R. P. 'How much does industry matter?', *Strategic Management Journal*, **12**(3), 1991, pp. 167–185.

Russo, J. E. and P. J. H. Schoemaker. *Decision Traps: Ten Barriers to Brilliant Decision Making and How To Overcome Them*, Doubleday, New York, 1989.

Schmalensee, R. 'Do markets differ much?' *American Economic Review*, **75**, 1985, pp. 341–351.

Schoemaker, P. J. H. 'Strategy, complexity and economic rent', *Management Science*, **36**(10), 1990, pp. 1178–1192.

Schoemaker, P. J. H. 'When and how to use scenario planning', *Journal of Forecasting*, **10**, 1991, pp. 549–564.

Schoemaker, P. J. H. 'Developing strategic vision: A core capabilities approach applied to Apple Computer', *Sloan Management Review*, 1992a, (in press).

Schoemaker, P. J. H. 'Determinants of risk-taking: Behavioral and economic views', *Journal of Risk and Uncertainty*, 1992b, (in press).

Schumpeter, J. *The Theory of Economic Development*, Harvard University Press, Cambridge, MA, 1934.

Selznick, P. *Leadership in Administration: A Sociological Interpretation*, Harper and Row, New York, 1957.

Senge, P. 'The leader's new work: Building learning organizations', *Sloan Management Review*, Fall, 1990, pp. 7–23.

Simon, H. A. *Models of Thought*, Yale University Press, New Haven, CT, 1979.

Stalk, G., P. Evans and E. Shulman. 'Competing on capabilities: The new rules of corporate strategy', *Harvard Business Review*, March–April, 1992, pp. 57–69.

Teece, D. J. 'Towards an economic theory of the multiproduct firm', *Journal of Economic Behavior and Organization*, **3**, 1982, pp. 39–63.

Teece, D. J. 'Profiting from technological innovation', *Research Policy*, **15**, 1986, pp. 285–305.

Teece, D. J., G. Pisano and A. Shuen. 'Firm capabilities, resources, and the concept of strategy', Mimeo, University of California at Berkeley, Haas School of Business, September, 1990.

Thompson, A. A. and A. J. Strickland. *Strategic Management: Concepts and Cases*, Irwin, Homewood, IL, 1990.

Tversky, A. and D. Kahneman. 'Judgment under uncertainty: Heuristics and biases', *Science*, **185**, 1974, pp. 1124–1131.

Tversky, A. and D. Kahneman. 'The framing of decisions and the psychology of choice', *Science*, **211**, 1981, pp. 453–458.

Vasconcellos, J. A. and D. C. Hambrick. 'Key success factors: Test of a general framework in the mature industrial-product sector', *Strategic Management Journal*, **10**(4), 1989, pp. 367–382.

Wack, P. 'Scenarios: Uncharted waters ahead', *Harvard Business Review*, **63**(5), 1985a, pp. 72–89.

Wack, P. 'Scenarios: Shooting the rapids', *Harvard Business Review*, **63**(6), 1985b, pp. 139–150.

Weigelt, K. and C. Camerer, 'Reputation and corporate strategy', *Strategic Management Journal*, **9**, 1988, pp. 443–454.

Wernerfelt, B. 'A resource based view of the firm', *Strategic Management Journal*, **5**, 1984, pp. 171–180.

Wernerfelt, B. 'From critical resources to corporate strategy', *Journal of General Management*, **5**, 1989, pp. 171–180.

Williamson, O. *Markets and Hierarchies*, Free Press, New York, 1975.

Zajac, E. J. and M. H. Bazerman. 'Blind spots in industry and competitor analysis', *Academy of Management Review*, **16**, 1991, pp. 37–56.

[Footnotes]

[2] **Vertical Integration, Appropriable Rents, and the Competitive Contracting Process**
Benjamin Klein; Robert G. Crawford; Armen A. Alchian
Journal of Law and Economics, Vol. 21, No. 2. (Oct., 1978), pp. 297-326.
Stable URL:
http://links.jstor.org/sici?sici=0022-2186%28197810%2921%3A2%3C297%3AVIARAT%3E2.0.CO%3B2-D

[6] **Vertical Integration, Appropriable Rents, and the Competitive Contracting Process**
Benjamin Klein; Robert G. Crawford; Armen A. Alchian
Journal of Law and Economics, Vol. 21, No. 2. (Oct., 1978), pp. 297-326.
Stable URL:
http://links.jstor.org/sici?sici=0022-2186%28197810%2921%3A2%3C297%3AVIARAT%3E2.0.CO%3B2-D

[9] **Strategic Factor Markets: Expectations, Luck, and Business Strategy**
Jay B. Barney
Management Science, Vol. 32, No. 10. (Oct., 1986), pp. 1231-1241.
Stable URL:
http://links.jstor.org/sici?sici=0025-1909%28198610%2932%3A10%3C1231%3ASFMELA%3E2.0.CO%3B2-F

[9] **Organizational Culture: Can It Be a Source of Sustained Competitive Advantage?**
Jay B. Barney
The Academy of Management Review, Vol. 11, No. 3. (Jul., 1986), pp. 656-665.
Stable URL:
http://links.jstor.org/sici?sici=0363-7425%28198607%2911%3A3%3C656%3AOCCIBA%3E2.0.CO%3B2-Q

LINKED CITATIONS

[14] **Strategy, Complexity and Economic Rent**
Paul J. H. Schoemaker
Management Science, Vol. 36, No. 10, Focussed Issue on the State of the Art in Theory and Method in Strategy Research. (Oct., 1990), pp. 1178-1192.
Stable URL:
http://links.jstor.org/sici?sici=0025-1909%28199010%2936%3A10%3C1178%3ASCAER%3E2.0.CO%3B2-9

[17] **Prospect Theory: An Analysis of Decision under Risk**
Daniel Kahneman; Amos Tversky
Econometrica, Vol. 47, No. 2. (Mar., 1979), pp. 263-292.
Stable URL:
http://links.jstor.org/sici?sici=0012-9682%28197903%2947%3A2%3C263%3APTAAOD%3E2.0.CO%3B2-3

[19] **The Economic Efficiency of Corporate Culture**
Colin Camerer; Ari Vepsalainen
Strategic Management Journal, Vol. 9, Special Issue: Strategy Content Research. (Summer, 1988), pp. 115-126.
Stable URL:
http://links.jstor.org/sici?sici=0143-2095%28198822%299%3C115%3ATEEOCC%3E2.0.CO%3B2-7

[19] **Reputation and Corporate Strategy: A Review of Recent Theory and Applications**
Keith Weigelt; Colin Camerer
Strategic Management Journal, Vol. 9, No. 5. (Sep. - Oct., 1988), pp. 443-454.
Stable URL:
http://links.jstor.org/sici?sici=0143-2095%28198809%2F10%299%3A5%3C443%3ARACSAR%3E2.0.CO%3B2-I

References

Strategic Factor Markets: Expectations, Luck, and Business Strategy
Jay B. Barney
Management Science, Vol. 32, No. 10. (Oct., 1986), pp. 1231-1241.
Stable URL:
http://links.jstor.org/sici?sici=0025-1909%28198610%2932%3A10%3C1231%3ASFMELA%3E2.0.CO%3B2-F

LINKED CITATIONS

Organizational Culture: Can It Be a Source of Sustained Competitive Advantage?
Jay B. Barney
The Academy of Management Review, Vol. 11, No. 3. (Jul., 1986), pp. 656-665.
Stable URL:
http://links.jstor.org/sici?sici=0363-7425%28198607%2911%3A3%3C656%3AOCCIBA%3E2.0.CO%3B2-Q

Asset Stocks and Sustained Competitive Advantage: A Comment
Jay B. Barney
Management Science, Vol. 35, No. 12. (Dec., 1989), pp. 1511-1513.
Stable URL:
http://links.jstor.org/sici?sici=0025-1909%28198912%2935%3A12%3C1511%3AASASCA%3E2.0.CO%3B2-Q

Does Strategy Research Need Game Theory?
Colin F. Camerer
Strategic Management Journal, Vol. 12, Special Issue: Fundamental Research Issues in Strategy and Economics. (Winter, 1991), pp. 137-152.
Stable URL:
http://links.jstor.org/sici?sici=0143-2095%28199124%2912%3C137%3ADSRNGT%3E2.0.CO%3B2-7

The Economic Efficiency of Corporate Culture
Colin Camerer; Ari Vepsalainen
Strategic Management Journal, Vol. 9, Special Issue: Strategy Content Research. (Summer, 1988), pp. 115-126.
Stable URL:
http://links.jstor.org/sici?sici=0143-2095%28198822%299%3C115%3ATEEOCC%3E2.0.CO%3B2-7

Economic Analysis and the Quest for Competitive Advantage
Richard E. Caves
The American Economic Review, Vol. 74, No. 2, Papers and Proceedings of the Ninety-Sixth Annual Meeting of the American Economic Association. (May, 1984), pp. 127-132.
Stable URL:
http://links.jstor.org/sici?sici=0002-8282%28198405%2974%3A2%3C127%3AEAATQF%3E2.0.CO%3B2-P

A Garbage Can Model of Organizational Choice
Michael D. Cohen; James G. March; Johan P. Olsen
Administrative Science Quarterly, Vol. 17, No. 1. (Mar., 1972), pp. 1-25.
Stable URL:
http://links.jstor.org/sici?sici=0001-8392%28197203%2917%3A1%3C1%3AAGCMOO%3E2.0.CO%3B2-9

LINKED CITATIONS

Performance Differences Among Strategic Group Members
Karel Cool; Dan Schendel
Strategic Management Journal, Vol. 9, No. 3. (May - Jun., 1988), pp. 207-223.
Stable URL:
http://links.jstor.org/sici?sici=0143-2095%28198805%2F06%299%3A3%3C207%3APDASGM%3E2.0.CO%3B2-6

Asset Stock Accumulation and Sustainability of Competitive Advantage
Ingemar Dierickx; Karel Cool
Management Science, Vol. 35, No. 12. (Dec., 1989), pp. 1504-1511.
Stable URL:
http://links.jstor.org/sici?sici=0025-1909%28198912%2935%3A12%3C1504%3AASAASO%3E2.0.CO%3B2-M

Agency Problems and Residual Claims
Eugene F. Fama; Michael C. Jensen
Journal of Law and Economics, Vol. 26, No. 2, Corporations and Private Property: A Conference Sponsored by the Hoover Institution. (Jun., 1983), pp. 327-349.
Stable URL:
http://links.jstor.org/sici?sici=0022-2186%28198306%2926%3A2%3C327%3AAPARC%3E2.0.CO%3B2-V

Separation of Ownership and Control
Eugene F. Fama; Michael C. Jensen
Journal of Law and Economics, Vol. 26, No. 2, Corporations and Private Property: A Conference Sponsored by the Hoover Institution. (Jun., 1983), pp. 301-325.
Stable URL:
http://links.jstor.org/sici?sici=0022-2186%28198306%2926%3A2%3C301%3ASOOAC%3E2.0.CO%3B2-A

Determinants of Firm Performance: The Relative Importance of Economic and Organizational Factors
Gary S. Hansen; Birger Wernerfelt
Strategic Management Journal, Vol. 10, No. 5. (Sep. - Oct., 1989), pp. 399-411.
Stable URL:
http://links.jstor.org/sici?sici=0143-2095%28198909%2F10%2910%3A5%3C399%3ADOFPTR%3E2.0.CO%3B2-A

Prospect Theory: An Analysis of Decision under Risk
Daniel Kahneman; Amos Tversky
Econometrica, Vol. 47, No. 2. (Mar., 1979), pp. 263-292.
Stable URL:
http://links.jstor.org/sici?sici=0012-9682%28197903%2947%3A2%3C263%3APTAAOD%3E2.0.CO%3B2-3

LINKED CITATIONS

Vertical Integration, Appropriable Rents, and the Competitive Contracting Process
Benjamin Klein; Robert G. Crawford; Armen A. Alchian
Journal of Law and Economics, Vol. 21, No. 2. (Oct., 1978), pp. 297-326.
Stable URL:
http://links.jstor.org/sici?sici=0022-2186%28197810%2921%3A2%3C297%3AVIARAT%3E2.0.CO%3B2-D

The Science of "Muddling Through"
Charles E. Lindblom
Public Administration Review, Vol. 19, No. 2. (Spring, 1959), pp. 79-88.
Stable URL:
http://links.jstor.org/sici?sici=0033-3352%28195921%2919%3A2%3C79%3ATSO%22T%3E2.0.CO%3B2-7

Patterns in Strategy Formation
Henry Mintzberg
Management Science, Vol. 24, No. 9. (May, 1978), pp. 934-948.
Stable URL:
http://links.jstor.org/sici?sici=0025-1909%28197805%2924%3A9%3C934%3APISF%3E2.0.CO%3B2-K

How Much Does Industry Matter?
Richard P. Rumelt
Strategic Management Journal, Vol. 12, No. 3. (Mar., 1991), pp. 167-185.
Stable URL:
http://links.jstor.org/sici?sici=0143-2095%28199103%2912%3A3%3C167%3AHMDIM%3E2.0.CO%3B2-V

Do Markets Differ Much?
Richard Schmalensee
The American Economic Review, Vol. 75, No. 3. (Jun., 1985), pp. 341-351.
Stable URL:
http://links.jstor.org/sici?sici=0002-8282%28198506%2975%3A3%3C341%3ADMDM%3E2.0.CO%3B2-W

Strategy, Complexity and Economic Rent
Paul J. H. Schoemaker
Management Science, Vol. 36, No. 10, Focussed Issue on the State of the Art in Theory and Method in Strategy Research. (Oct., 1990), pp. 1178-1192.
Stable URL:
http://links.jstor.org/sici?sici=0025-1909%28199010%2936%3A10%3C1178%3ASCAER%3E2.0.CO%3B2-9

LINKED CITATIONS

Judgment under Uncertainty: Heuristics and Biases
Amos Tversky; Daniel Kahneman
Science, New Series, Vol. 185, No. 4157. (Sep. 27, 1974), pp. 1124-1131.
Stable URL:
http://links.jstor.org/sici?sici=0036-8075%2819740927%293%3A185%3A4157%3C1124%3AJUUHAB%3E2.0.CO%3B2-M

The Framing of Decisions and the Psychology of Choice
Amos Tversky; Daniel Kahneman
Science, New Series, Vol. 211, No. 4481. (Jan. 30, 1981), pp. 453-458.
Stable URL:
http://links.jstor.org/sici?sici=0036-8075%2819810130%293%3A211%3A4481%3C453%3ATFODAT%3E2.0.CO%3B2-3

Key Success Factors: Test of a General Theory in the Mature Industrial- Product Sector
Jorge Alberto Sousa de Vasconcellos E Sá; Donald C. Hambrick
Strategic Management Journal, Vol. 10, No. 4. (Jul. - Aug., 1989), pp. 367-382.
Stable URL:
http://links.jstor.org/sici?sici=0143-2095%28198907%2F08%2910%3A4%3C367%3AKSFTOA%3E2.0.CO%3B2-Q

Reputation and Corporate Strategy: A Review of Recent Theory and Applications
Keith Weigelt; Colin Camerer
Strategic Management Journal, Vol. 9, No. 5. (Sep. - Oct., 1988), pp. 443-454.
Stable URL:
http://links.jstor.org/sici?sici=0143-2095%28198809%2F10%299%3A5%3C443%3ARACSAR%3E2.0.CO%3B2-I

A Resource-Based View of the Firm
Birger Wernerfelt
Strategic Management Journal, Vol. 5, No. 2. (Apr. - Jun., 1984), pp. 171-180.
Stable URL:
http://links.jstor.org/sici?sici=0143-2095%28198404%2F06%295%3A2%3C171%3AARVOTF%3E2.0.CO%3B2-L

Blind Spots in Industry and Competitor Analysis: Implications of Interfirm (Mis)Perceptions for Strategic Decisions
Edward J. Zajac; Max H. Bazerman
The Academy of Management Review, Vol. 16, No. 1. (Jan., 1991), pp. 37-56.
Stable URL:
http://links.jstor.org/sici?sici=0363-7425%28199101%2916%3A1%3C37%3ABSIIAC%3E2.0.CO%3B2-8