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Institutions: University of Illinois at Urbana–Champaign

Published on: 01 Jun 1992 - Strategic Management Journal (John Wiley & Sons, Ltd.)

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September 1990

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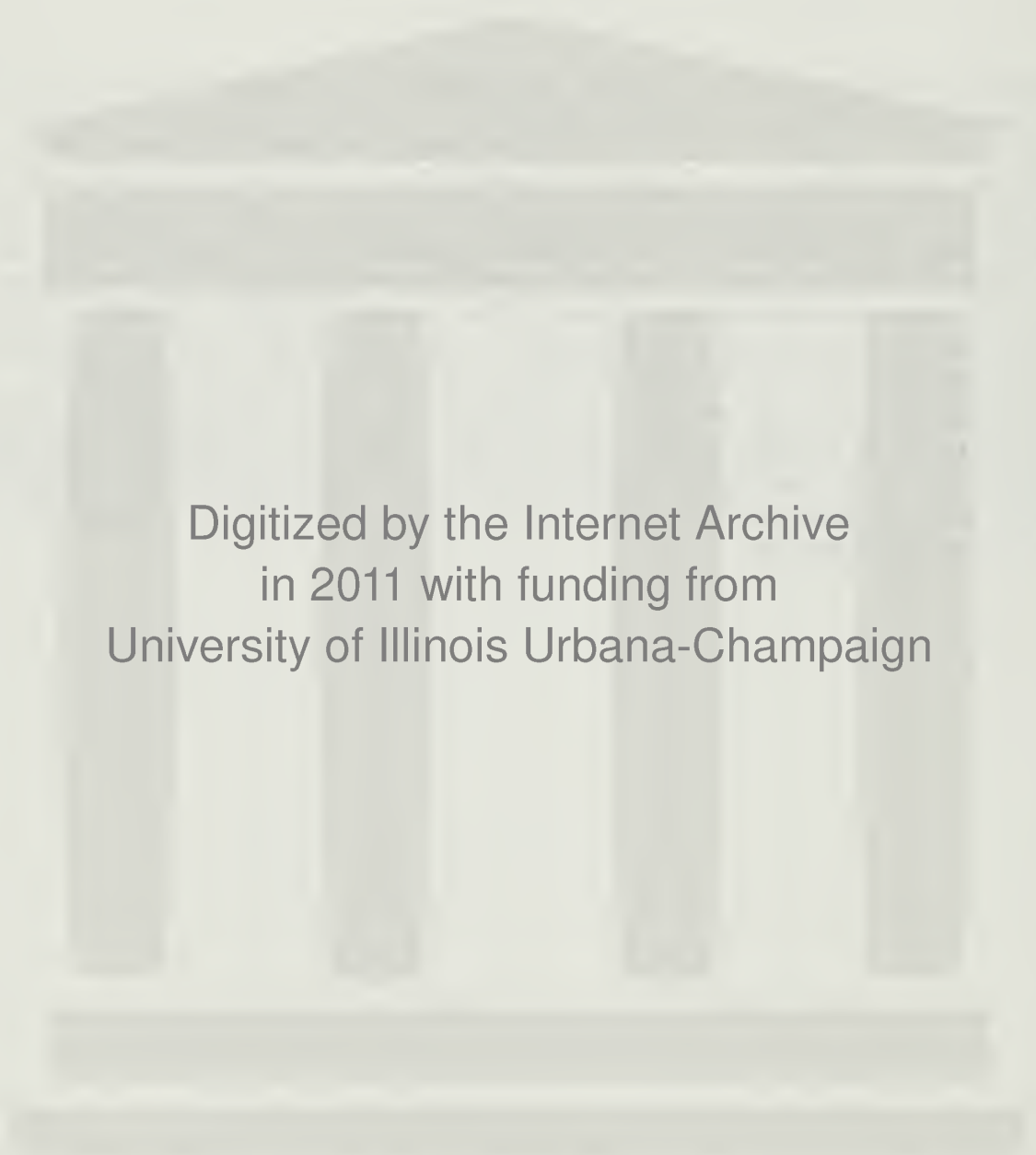
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**THE RESOURCE-BASED VIEW WITHIN
THE CONVERSATION OF STRATEGIC MANAGEMENT**

Abstract

The resource-based approach is an emerging framework that has stimulated discussion between scholars from three research perspectives. First, the resource-based view incorporates traditional strategy insights concerning a firm's distinctive competencies and heterogenous capabilities. The resource-based approach also provides value-added theoretical propositions that are testable within the diversification strategy literature. Second, the resource-based view fits comfortably within the organizational economics paradigm. Third, the resource-based view is complementary to industrial organization research. The resource-based view provides a framework for increasing dialogue between scholars from these important research areas within the conversation of strategic management. Resource-based studies that give simultaneous attention to each of these research programs are suggested.



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THE RESOURCE-BASED VIEW WITHIN
THE CONVERSATION OF STRATEGIC MANAGEMENT

McCloskey (1985) persuasively argues that "good science is good conversation". The resource-based view is good management science, properly speaking, because it stimulates good conversation within the strategic management field. The resource-based approach (Penrose, 1959; Wernerfelt 1984) is attracting the attention of a growing number of researchers precisely because the framework encourages a sustainable dialogue between scholars from a variety of perspectives.

In particular, three major research programs are currently intertwined in the resource-based framework. First, the resource-based view incorporates concepts from mainstream strategy research. Distinctive competencies (Andrews, 1971; Ansoff, 1965) of heterogeneous firms, for example, are a fundamental component of the resource-based view. Moreover, the resource-based theory is concerned with the rate, direction and performance implications of diversification strategy; areas of considerable focus in the strategy field (Ramanujam & Varadarajan, 1989).

Second, the resource-based approach fits comfortably within the conversation of organizational economics (Barney & Ouchi, 1986). Third, the resource-based approach is complementary to industrial organization analysis (Bain, 1968; Porter 1980; Stigler, 1968). The resource-based view not only stimulates

conversation within mainstream strategy research, organizational economics and industrial organization research but it also provides a framework for increased discussion between these research perspectives. Future resource-based studies that give simultaneous attention to these three research programs are suggested.

Resource-based theory within the conversation of strategy

Over 15 years ago, Bowman suggested that strategy could be viewed as a "continuing search for rent" (1974, p. 74). Rent is defined as the return in excess of a resource owner's opportunity costs (Krueger, 1974; Tollison, 1982). A resource may be conveniently classified under a few headings -- for example, land and equipment, labor (including workers' capabilities and knowledge), and capital (organizational, tangible and intangible) -- but the sub-division of resources may proceed as far as is useful for the problem at hand (Penrose, 1959, p.74).

The generation of above-normal rates of return (i.e. rents) is the focus of analysis for competitive advantage (Porter, 1985). Several types of rent may be usefully distinguished. First, rent may be achieved by owning a valuable resource that is scarce (Ricardo, 1817). Resources yielding Ricardian rents include ownership of valuable land, locational advantages, patents and copyrights. Second, monopoly rents may be achieved

by government protection or by collusive arrangements when barriers to potential competitors are high (Bain, 1968). Third, entrepreneurial rent may be achieved by risk-taking and entrepreneurial insight (Rumelt, 1987; Schumpeter, 1934).

Finally, the firm may be able to appropriate rents when resources are firm-specific. For example, a worker's skill and knowledge may increase the value of the firm by \$60,000. If the worker's skill can be used by many firms in the industry, then the worker will be able to bid up the price (wage) of her services to receive \$60,000. The firm, in this case, will not be able to appropriate rents. However, consider a second scenario where some of the worker's knowledge provides value that is firm-specific. For example, her knowledge and skill would increase the value of other firms by only \$38,000. The difference between the first-best and second-best use value of a resource -- the so-called quasi-rent (Klein, Crawford & Alchian, 1978) -- in this case, is \$22,000 and is precisely the amount that a firm may appropriate to achieve above-normal returns. Similarly, quasi-rents are appropriable from idiosyncratic physical capital and dedicated assets (Williamson, 1979).

The above example illustrates a general principle that may be derived from a synthesis of a number of contributions in the resource-based literature and is summarized by Peteraf (1990): The existence and maintenance of rents depend upon a lack of competition in either acquiring or developing resources. Rents derived from resources which are simultaneously superior, imper-

fectly imitable, and non-substitutable, will not be competed away if they are nontradeable or traded in imperfect factor-markets.

The resource-based view incorporates the insights of the early seminal contributions to strategic management in order to explain how firms generate rents. The traditional concept of strategy (Andrews, 1971; Ansoff, 1965) considers the resource position of the firm. A firm selects its strategy to generate rents based upon their resource capabilities. Organizations with the strategic capability to focus and coordinate human effort and the ability to effectively evaluate the resource position of the firm in terms of strengths and weaknesses have a strong basis for competitive advantage (Andrews, 1971).

The firm's unique capabilities in terms of technical know-how and managerial ability are important sources of heterogeneity that may result in sustained competitive advantage. In particular, distinctive competence in one or more of the firm's value-chain functions (Porter, 1985) may enable the firm to generate rents from a resource advantage (Hitt & Ireland, 1985).

Distinctive competence is a function of the resources a firm possesses at any point in time. Penrose argues that: "It is the heterogeneity ... of the productive services available or potentially available from its resources that gives each firm its unique character" (1959, p.75). For example, top management in a diversified enterprise can be a significant and distinctive skill if it uniquely contributes to the sustained profitability of the enterprise (Miles & Cameron, 1982).

A firm may achieve rents not because it has better resources, but rather it makes better use of its resources (Penrose, 1959, p.54). The firm may make better use of human capital by assigning workers correctly to where they have higher productivity in the organization (Prescott & Visscher, 1980), and the firm may make better allocations of financial capital toward high yield uses (Williamson, 1975).

There is a rich connection between the firm's resources, distinctive competencies and the 'dominant logic' (Prahalad & Bettis, 1986) of the managerial team which drives the diversification process. Penrose argues that resources "shape the scope and direction of the search for knowledge" (1959, p.77). The services that resources will yield depend upon the dominant logic of the top management team, but the development of the dominant logic of the top managerial team is partly shaped by the resources they deal with.

Firm diversification may also be based on similar production technologies and the exploitation of science-based research (Rumelt, 1974). Thus, diversification may be based on transferring skills by one or more of the value-creation functions (human resource management, manufacturing & information systems).

The resource-based view contributes to the large stream of research on diversification strategy (Ramanujam & Varadarajan, 1989) in three areas: First, the resource-based approach considers the motives for, and limitations of, diversified growth (via internal development and mergers & acquisitions). Second,

the resource-based approach provides a theoretical perspective for predicting the direction of diversification. Third, the resource-based view provides a theoretical rationale for predicting superior performance for certain categories of related diversification.

Penrose (1959) provides a seminal contribution in the resource-based tradition. Fundamentally, it is the resources of the firm which limit the choice of markets it may enter, and the levels of profits it may expect (Wernerfelt, 1989). Key resource constraints include: (1) shortage of labor or physical inputs; (2) shortage of finance; (3) lack of suitable investment opportunities; and (4) lack of sufficient managerial capacity. The financial and demand constraints are generally assumed away by Penrose as being beyond the managerial constraint. Penrose (1959) considers the growth of the firm as limited only in the long-run by its internal management resources.

The total managerial services that a firm requires at a point in time is partly constrained by the necessity to run the firm at its current size, and is partly required to carry out expansionary ventures with respect to new products and expansion generally (Gort, 1962; Marris, 1964). Even with a constant managerial workforce the firm will expand because as each new product becomes established, its operations become more standardized and less demanding of managerial services. A fixed amount of managerial services for expansion through time induces continuous growth.

Thus, there is a learning effect (Spence, 1981). As managers become more experienced at running the operations of their firms, managerial services are released for expansion without any fall in the effectiveness with which existing operations are run. Allowing for diversification and a reasonably functioning capital market, firms will grow rapidly given the necessary managerial resources (Hay & Morris, 1979).

The optimum growth rate of the firm is mainly a function of the optimal growth rate of managers (Figure 1). Point m indicates that some growth is feasible even with the same number of managers. New managerial recruits increase the growth potential of the firm. However, the training of new managers and the integration of them into the work-force occupies some of the time and effort of existing managers, and thus reduces the managerial services available for expansion. Here g is the maximum growth rate of the firm and the optimal growth rate of managers is M .

Insert Figure 1 about here

This managerial constraint on the growth rate of the firm, the so-called "Penrose effect" (Uzawa, 1969), suggests that fast-growing firms in one period tend to experience slower growth in the next period. Growth requires resources which are least likely to be available with a plant that has just expanded considerably and are most likely to be fulfilled by a plant which

has been in a lull. Hence, the Penrose effect suggests a negative correlation between growth rates in successive periods. Case studies (Richardson, 1964), formal models (Slater 1980; Uzawa, 1969), and econometric tests (Shen, 1970) provide support for the Penrose effect.

In addition to analyzing the limits of the rate of a firm's growth, Penrose (1959) also examines the motives for expansion. It is rare for all units to be operating at the same speed and capacity, and this phenomenon creates an internal inducement for firm growth. Penrose (1985, p.13) presents a **resource approach** arguing that firms are collections of physical, human and intangible assets. Unused productive services from existing resources present a "jig-saw puzzle" for balancing processes (Penrose, 1959, p.70). Excess capacity due to indivisibilities, and cyclical demand, to a large extent drives the diversification process (Caves, 1980; Chandler, 1962).

The firm's capability lies upstream from the end-product -- it resides in skills, capacities, and resources which find a variety of end uses (Teece, 1982). Excess physical capacity leads to related diversification if the capacity is end-product specific (Chatterjee & Wernerfelt, 1988).

At all times there exists within every firm, pools of unused productive services, and these, together with the changing knowledge of management, create unique productive opportunities for each firm (Chandler, 1977; Teece, 1980). Penrose argues that there is a "virtuous circle" (1959, p.73) in which the

process of growth necessitates specialization but specialization necessitates growth and diversification to fully utilize unused productive services. Thus, **specialization induces diversification.**

As a plant adjusts to its current scale of operations, the learning process frees resources for alternative uses (Fiol & Lyles, 1985). This creates a built-in pressure for growth. An efficient plant may normally grow at some optimal rate rather than remain at "the" optimal size.

Rubin (1973) formally models firms' diversification decisions according to Penrose's theory. He assumes that firms cannot costlessly divest fixed assets in the short-run and that expansion (through acquisition or internal development) utilizes existing managerial resources which implies that managerial services constrain the growth of firms. Rubin's model considers resources which can be used either for producing output or for training new resources. This assumption is incorporated into a dynamic programming theory of the firm. Rubin's model illustrates Penrose's thesis that there is no optimal size for a firm. At any point in time there is an optimal growth rate.

Lemelin (1979) extends Rubin's model to include internal resource transfer costs, imperfectly competitive resource markets, and risk aversion. The firm is modeled as a collection of particular resources worth more to the firm than their market value due to high switching costs. Some of these resources are normally freed as know-how is gained, and as ongoing activities

become routinized. Diversification is the observable outcome of a dynamic internal growth process. An optimal growth of the firm involves a balance between exploitation of existing resources and development of new resources (Penrose, 1959; Rubin 1973; Wernerfelt, 1984).

In addition to providing insights on the rate of the growth of the firm, the resource-based approach provides value-added theoretical explanations for the direction of a firm's diversification. The direction of a firm's diversification is due to the nature of its available resources, and the market opportunities in the environment, with each firm seeking the most profitable opportunities in which to apply its set of available resources.

Several econometric studies support the resource-based theory that an enterprise's firm-specific resources serve as the driving force for its diversification strategy. Lemelin (1982) finds that the more closely an industry is related to a firm's primary activity, the more likely it is to be chosen for diversification. Diversification occurs between pairs of industries that exchange goods and services, belong to the same category of industries in terms of buyer-supplier relationships, are science-based and have similar input requirements. Lemelin (1982) also finds that industries assigned to categories of producer goods, consumer convenience goods and consumer nonconvenience goods are more likely to diversify into other industries assigned to the same category. Lemelin (1982) argues

that this pattern is consistent with the resource-based hypothesis that firms attempt to transfer intangible capital among related activities.

MacDonald (1985) finds that firms are more likely to enter industries that were related to their primary activities. R&D intensive firms channel their diversification toward R&D intensive industries. R&D expenditure is a reasonably effective proxy for capturing an enterprise's endowment of unique knowledge possessed by individuals and teams within the organization (Caves, 1982). Thus, the diversification pattern that MacDonald (1985) finds may reflect the transfer of shareable idiosyncratic organizational and intangible capital among related activities (Prescott & Visscher, 1980; Williamson, 1985).

Similarly, Stewart, Harris & Carleton (1984) find a very strong positive relationship between the advertising intensity of the acquiring firm's primary industry and the advertising intensity of the acquired firm's primary industry. Advertising expenditure is a reasonably effective proxy for capturing a firm's intangible assets (such as brand name and reputation). Thus, once again, the pattern of the direction of diversification may reflect the firm's attempts to transfer these invisible assets (Itami, 1987).

Montgomery & Hariharan (1987) supply further support for the resource-based view that the resource profile of the diversifying firm is critical in predicting the resource characteristics of the destination industry. While previous empirical research,

discussed above, assigned firms to their primary industry and studied the relationship between these primary (origin) industries and destination industries, Montgomery & Hariharan (1987) provide a significant value-added contribution by using the FTC Line-of-Business (LB) data to consider the resource profile of diversifying firms. Montgomery & Hariharan (1987) find strong empirical evidence to reject the hypothesis that the direction of diversification occurs at random. They find that a firm's competencies and intangible assets in advertising and R&D explain the direction of diversification strategy. The productive services of these resources are a selective force in determining the direction of diversification (Penrose, 1959, p.87).

These empirical studies suggest that firm-specific resources and relatedness of activities are important variables in the diversification process. Companies grow in the directions set by their capabilities and these capabilities slowly expand and change (Penrose, 1959). DuPont, for example, moved from a basis in nitro-cellulose explosives to cellulose lacquers, artificial leather, plastics, rayon and cellophane, and from a basis in coal tar dyestuffs into a wider range of synthetic organic chemicals, nylon, and synthetic rubber (Richardson, 1972). The resource-based theory and empirical studies suggest that Dupont's pattern of related diversification is the rule, rather than the exception.

The resource-based discussion of the diversification--performance linkage is embedded within the more general question of whether any strategy that the firm utilizes makes a difference. There still is an important debate concerning the significance of firm effects as opposed to industry effects on performance. While Schmalensee (1985) does not find support for the existence of firm effects, several other studies find significant firm effects (Cubbin & Geroski, 1987; Duhaime & Stimpert, 1990; Hansen & Wernerfelt, 1989; Jacobsen, 1988; Mueller, 1977, 1986; Rumelt, 1989; Scott & Pascoe, 1986; Vasconcellos & Hambrick, 1989; Wernerfelt & Montgomery, 1988).

Rumelt (1987), applying a variance components analysis to rates of return on capital displayed by 1,292 U.S. corporations over a twenty-year period finds that the variance in long-run profitability within industries was three to five times larger than the variance across industries. Clearly, the important sources of rents in this data set are firm-specific rather than the result of industry attractiveness.

Since the preponderance of empirical evidence suggests that firms may influence their rent stream, the next question is: What is the nature of these firm effects? Two important empirical studies (Montgomery & Wernerfelt, 1988; Wernerfelt & Montgomery, 1988) suggest that the resource-based theory of the firm provides a theoretical underpinning for explaining and predicting significant firm effects. A resource-based theory of diversification suggests that firm effects might exist in the

form of focus effects. They investigate the proposition that widely diversified (less-focused) firms are unable to transfer their competencies to a host of different markets. They argue that the resource-based theory of diversification is helpful in explaining the absolute performance of related diversifiers relative to unrelated diversifiers. They make two points to support this argument: (1) wider diversification suggests the presence of less firm-specific resources that normally yield lower rents; (2) a given resource will lose more value when transferred to markets that are less similar to that in which it originated.

Using the concentric index of diversification (Caves, Porter & Spence, 1980) as a proxy for relatedness, Wernerfelt & Montgomery (1988) find that narrowly diversified firms receive higher rents (proxied by Tobin's q) than widely diversified firms. This supports the resource-based hypothesis that expansion by firms into activities in which they have comparative advantages is most likely to yield rents (Penrose, 1959).

These empirical findings do not suggest, however, that unrelated diversification is always ill-advised. Unrelated diversifiers may have resources that give them a comparative advantage over smaller atomistic competitors. Highly diversified firms may successfully transfer resources across widely varying markets. Montgomery & Peteraf (1989) find that these highly diversified firms outperform atomistic rivals in fragmented industries.

Finally, Chatterjee (1990) notes that the vast majority of empirical studies indicate performance advantages for related diversification relative to unrelated diversification (Bettis 1981; Montgomery, 1985; Montgomery & Wernerfelt, 1988; Palepu, 1985, Rumelt, 1974, 1982; Singh & Montgomery, 1987; Varadarajan & Ramanujam, 1987). However, even granting the resource-based premise that related diversification yields higher rents, the bidding firm will be unable to appropriate these rents in a perfectly competitive market for mergers & acquisitions (Barney, 1988). On the other hand, the bidding firm will achieve rents if the bidding firm has private information, luck, or private synergy which is not easily imitable or substitutable (Barney 1986c).

It is unlikely that private information and luck vary systematically between unrelated and related diversification. Thus, the "related principle reconsidered" (Chatterjee, 1990) suggests that related diversification results in higher rents to the acquiring firm relative to unrelated diversification because of the greater likelihood of private synergy (value that is idiosyncratic to the combined resources of the acquiring and target firm) in the case of related diversification. For mergers motivated by private synergy (efficiency or market power), the related bidder who shares the most valuable relationship with a target is clearly in a better position to outbid its less related counterparts while still retaining some of the mergers economic value.

Suppose the private synergy is \$100,000. How much value does the bidding firm receive? Here, we have a classical example of bilateral monopoly. As Scherer notes: "The theory of bilateral monopoly is indeterminate with a vengeance" (1980, p. 299). Depending on the bargaining power of the bidding and target firm, the bidder may receive anywhere from nothing to the full \$100,000. Firms, of course, will try to make commitments to influence their relative bargaining power. For example, antitakeover amendments may be implemented by managers of the target firms in the target shareholders' interest in order to increase the target firm's bargaining leverage to receive a greater share of private synergy (Grossman & Hart, 1980).

In the case where the synergy is not private, the bidding process will enable the target firm to appropriate the entire value-created (Barney, 1988). There must exist some type of "market failure" in order for the diversified firm to achieve rents via acquisition or internal development. Market failure is an area of considerable focus within the organizational economic paradigm and is critical for developing a resource-based theory of the firm.

Resource-based theory within the conversation of organizational economics

The organizational economics paradigm (Barney & Ouchi, 1986) includes evolutionary economics (Barney 1986b; Nelson & Winter, 1982; Schumpeter, 1950), transaction cost economics (Coase, 1937;

Williamson, 1975); property rights theory (Alchian, 1982; Jones, 1983) and positive agency theory (Eisenhardt, 1989; Jensen & Meckling, 1976). Theorists from these perspectives share the resource-based theorists dissatisfaction with the neoclassical theory of the firm.

The neoclassical theory of the firm represents the firm as a production function that transform inputs into outputs. The firm is a "black box" in which issues of internal organization are suppressed or ignored. The neoclassical approach to the theory of the firm (Samuelson, 1947) is characterized by an ideal market with firms for which profit maximization is the single determinant of action.

Barney & Ouchi (1986) note that positive microeconomics has been dominated by a research program that emphasizes supply and demand, equilibria, optimization analyses and industry structure. The task of strategic management is to contribute value-added insight concerning the structure-strategy-performance paradigm (Bain, 1968; Porter, 1981; Scherer, 1980) and to get "inside the black box" by analyzing the strategic firm (Rumelt, 1984). While industrial organization analysis attempts to characterize the behavior of a "representative firm", the resource-based approach focuses on the key success factors of individual firm behavior to achieve firm-specific advantages via a portfolio of core skills, coherence across skills, and unique proprietary know-how (Aharoni & Sticht, 1990; Dosi, Teece & Winter, 1990; Prahalad & Hamel 1990).

The fundamental paradox of the neoclassical theory of the firm is that the firm does not exist. The neoclassical theory assumes away transaction costs (Williamson, 1975); limits on rationality (Simon, 1976); technological uncertainty (Schumpeter, 1950); consumer or producer learning (Lieberman & Montgomery, 1988), and prices as signals of quality (Spence, 1974). The removal of these "frictions" leads to the conclusion that prices are sufficient statistics (Koopmans, 1957).

This static equilibrium approach consequently does not address the competitive **process** which is of central concern in strategy (Teece & Winter, 1984). In contrast to the stylized model of neoclassical economics, the resource-based view is concerned with a "strategic firm" characterized by a bundle of linked and idiosyncratic resources. The view of corporate behavior is most closely associated with Schumpeter's vision of competition as a process of "creative destruction" rather than as a static equilibrium condition (Barney 1986b, Lippman & Rumelt, 1982; Nelson & Winter, 1982; Phillips, 1971).

The resource-based approach may be framed in a dynamic context. Schumpeterian competition involves carrying out "new combinations" including new methods of production as well as organizational innovation (Iwai, 1984). This Schumpeterian competition may be translated into the resource-based framework by considering the firm's "new combinations of resources" (Penrose, 1959, p. 85) as a means of achieving the goal of sustained competitive advantage (Ghemawat, 1986). Penrose

(1959), following Schumpeter, views the competitive process as dynamic involving uncertainty, struggle and disequilibrium. Firms accumulate knowledge as a strategic asset (Winter, 1987) through R&D and learning, some of it incidental to the production process. Indeed, Rumelt combines the Schumpeterian perspective with the resource-based view by suggesting that strategy formulation concerns: "the constant search for ways in which the firm's unique resources can be redeployed in changing circumstances" (1984, p. 569).

The resource-based view on distinctive competencies may also be analyzed in an evolutionary context. The firm's distinctive competencies may be defined by the set of substantive rules and routines used by top management. Managers' past decisions, and decision rules are the basic genetics which firms' possess. Sustainable advantage is thus a history dependent process (Nelson & Winter, 1982; Barney, 1989b).

The resource-based approach is also closely aligned with other theories composing the organizational economics paradigm (Barney & Ouchi, 1986). Translating the transaction cost approach into the resource-based approach, a firm is considered both an administrative organization and a pool of productive resources (Penrose, 1959). In planning expansion the firm considers the active juxtaposition of its own "inherited" endowment of resources and those that it must obtain from the market in order to carry out its program of activities (Barney, 1989b; Caves, 1980). These factors are assumed to be

semipermanently tied to the firm by recontracting costs and market imperfections (Teece, 1982; Yao, 1988). Firm-specific resources may result in sustainable performance differences (Oster, 1990; Williamson, 1985).

The resource-based framework views diversification as a response to indivisibilities and market failure (Teece, 1982). The transaction cost, property rights, and positive agency theory literatures provide the theoretical underpinnings for the resource-based approach by analyzing the nature of market failure. Market failure occurs when: there exists private synergy and sunk cost (Baumol, Panzar, & Willig, 1982); property rights are ill-defined (Alchian, 1982); externalities are present (Dahlman, 1979); imperfect (asymmetric) information exists (Eisenhardt, 1989; Yao, 1988); and transaction costs are positive (Williamson, 1975). The result of these market imperfections is that recognition, disclosure, team organization, monitoring and dissipation costs are incurred in contractual exchange (Caves, 1982; Teece, 1982).

While market failure explains the existence of the firm (Coase, 1937), the resource-based view posits heterogenous firms as the outcome of certain types of market failure.

Transaction cost analysis (Teece, 1984; Williamson, 1975) suggests that idiosyncratic capital is an important source of market failure and heterogeneity. Unique assets may take the form of human capital (Becker, 1964), physical capital (Klein, Crawford & Alchian, 1978), legal capital (Alchian, 1982; Barzel,

1989), organizational capital and experience (Huff, 1982; Prahalad & Bettis, 1986; Prescott & Visscher, 1980; Spender, 1989), and intangible capital (Caves, 1982).

The diversification literature, discussed above, emphasizes the role of intangible assets in explaining heterogeneity. Successful firms in most industries possess one or more type of intangible asset --- technological know-how, patented process or design, know-how shared among employees, and marketing assets. Intangible assets are often subject to market (transaction cost) failure. Even if the firm can market its intangible assets effectively, it could not disentangle them from the skills and knowledge of the managerial team (Nelson & Winter, 1982). In summary, idiosyncratic physical, human, and intangible resources supply the genetics of firm heterogeneity.

Not only are there substantive areas of overlap between organizational economics and the resource-based view of the firm but there are methodological similarities as well. Fundamentally, the organizational economics paradigm of evolutionary economics, transaction cost theory, positive agency theory and property rights theory attempt to explain the origin, function, evolution, and sustainability of our "institutions of capitalism" (Williamson, 1985). The resource-based view is expressly concerned with a specific institution, namely, the rent-generating heterogenous firm and its origin, function, evolution, and sustainability (Barney 1989b; Lippman & Rumelt, 1982; Rumelt, 1984). Debates concerning the validity of the

organizational economics methodology (Barney & Ouchi, 1986) need to be seriously analyzed by resource-based scholars.

While the resource-based view is intertwined with the organizational economics literature, a case can be made that the resource-based view is also complementary to the industrial organization structure-conduct-performance paradigm. Valuable resources are often imperfectly imitable and imperfectly substitutable enabling the heterogeneous firm to generate and sustain rents. The sustainability of rents is a function of "barriers to imitation", which have been a major focus of the industrial organization paradigm considered below.

Resource-based theory within the conversation of industrial organization

The resource-based view is complementary to the analytic (Hill, 1988; Karnani, 1984; Schmalensee, 1978) and empirical literature (Dess & Davis, 1984; Grinyer, McKiernan & Yasai-Ardekani, 1988) based on the Bain-Porter framework (Bain, 1968; Porter, 1985). Peteraf (1990) provides a value-added contribution to the resource-based literature by systematically contrasting the "Harvard-school" Porter framework (1980), and the resource-based view of the firm. Peteraf also contrasts the "Chicago-school" (Stigler, 1968) industrial organization view to the resource-based view. The emphasis in this section is on the common ground shared between these "two systems of belief" (Demsetz, 1974) in industrial organization and the resource-based approach.

While the industrial organization literature focuses externally on the industry and product markets and the resource-based view focuses internally on the firm and its resources, there is nonetheless, a duality between the economist's constrained maximization problem of choosing a product mix to maximize profits given resource constraints and the constrained minimization problem of minimizing resource costs given a desired product mix. Wernerfelt (1984) reminds us of this fundamental principle: Specifying the enterprise's product mix enables the researcher to specify the minimum necessary resource commitments. Conversely, by specifying a resource profile, for the enterprise, an optimal product-mix profile can be developed. Indeed, the product market and resource market are two sides of the same coin.

The resource-based view correctly suggests that focusing on firm effects is important in developing and combining resources to achieve competitive advantage, but this does not imply that industry product analysis merely yields normal returns. On the contrary, analysis of the environment is still critical since environmental change "may change the significance of resources to the firm" (Penrose, 1959, p.79).

The essential theoretical concept for explaining the sustainability of rents in the resource-based framework is "isolating mechanisms" (Rumelt, 1984). The notion of isolating mechanism (at the firm level of analysis) is an analogue of entry barriers (at the industry level) and mobility barriers at the

strategic group level (Caves & Porter, 1977; McGee & Thomas, 1986). In this sense, the resource-based view utilizes a central concept of the structure-strategy-performance paradigm, albeit at a different level of analysis. These isolating mechanism explain (ex post) a stable stream of rents and provide a rationale for intra-industry differences among firms.

Examples of isolating mechanisms are derived from the resource-based theory, mainstream strategy research, organizational economics and the industrial organization literature (Table 1). It is no exaggeration to claim that the concept of isolating mechanisms (Rumelt, 1984) is an insightful and unifying concept. The crucial aspect for competitive advantage involves the productive services of rent-generating resources and resource combinations which cannot be easily imitated or substituted.

Although the list of isolating mechanisms is impressive, what is the generalizable insight? A careful examination of the list of isolating mechanisms suggests that absent government intervention, isolating mechanisms exist because of asset specificity and bounded rationality (Williamson, 1979). Or, put differently, isolating mechanisms are the result of the rich connections between uniqueness and causal ambiguity (Lippman & Rumelt, 1982). A reasonably comprehensive review of the strategy, organizational economics and industrial organization literature on "barriers to imitation" reveals the powerful generalizable insights of these two seminal articles.

The resource-based view is closer to the "Harvard School" Bain-Porter framework in believing in the effectiveness of these isolating mechanisms. The "Chicago School" view questions whether economies of scale, advertising and R&D expenditure can ever be a barrier to entry or isolating mechanism (Demsetz, 1974). Many industrial economists take an eclectic view between the two camps (Mancke, 1974; Phillips, 1976).

Peteraf (1990) argues that the resource-based view is closer to the "Chicago school" in emphasizing efficiency rents than monopoly rents. However, this distinction should not be taken too far. As Demsetz notes, there is no reason to suppose that competitive behavior never yields monopoly rents (1973, p.3). The resource-based view is closer to the "Harvard-School" in terms of positing sustainable rents. This difference is due to the divergent premises of the "Harvard-School" and "Chicago-School" on the effectiveness of isolating mechanisms, as noted above.

Thus, the resource-based view is intimately involved within the conversation of mainstream strategy, organizational economics and industrial organization research. The strength of the resource-based framework is that it stimulates discussion between various research perspectives. These discussions appear to be generating new intellectual combinations of thought. Suggestions for sustaining the conversation are considered below.

DISCUSSION AND CONCLUSIONS

A fully developed theory of the expansion of the firm is a formidable challenge for strategic management research. The theory would involve production theory (Hayes & Wheelwright, 1984), investment theory (Hirshleifer, 1970), portfolio theory (Sharpe, 1970), organizational economics (Barney & Ouchi, 1986; Williamson, 1985), the theory of oligopoly (Friedman, 1983), the theory of international finance (Sodersten, 1980), and so forth. While not claiming to be a comprehensive theory of expansion, the resource-based approach provides an illuminating generalizable theory of the growth of the firm.

Reflecting back on the full set of articles published on, or related to, the resource-based view of the firm, a few areas for value-added research contributions are suggested:

1. Operationalizing the concept of relatedness. In terms of empirical testing, research is clearly needed to provide correspondence between the concepts of relatedness (Kazanjian & Drazin, 1987) and its operationalization (measurement). Relatedness requires analysis at the functional level (Abell, 1980; Salter & Weinhold, 1979; Hayes & Wheelwright, 1984), such as marketing, product technology, and process technology, as well as links between business units' value-chains (Rumelt, 1974; Porter, 1985). Relatedness also requires attention at the corporate level (Grant, 1988).

2. Integrating the diversification literature. The integration of the literature on related diversification and performance and the resource-based approach analyzing the direction of the expansion of the firm will provide a major advance in the field of strategy research. The resource-based view may enable strategy researchers to synthesize the rate, direction, and performance implications of diversification strategy.

3. Integrating the diversification literature with the organizational economics literature. To be a fruitful comprehensive theory of diversification, the resource-based view must also aid management practice on the choice of governance structure (i.e. mergers & acquisitions, internal development, and intermediate modes such as joint ventures). The choice of organizational form is of primary concern in organizational economics (Williamson, 1985). Integration of the emerging resource-based view with organizational economics may provide value-added insights on the implementation of diversification strategy (Lamont & Anderson, 1985). Hybrids and networks may involve the coordination of resources across firm boundaries (Borys & Jemison, 1989).

4. The development of an endogenous theory of heterogeneity. A fundamental premise that distinguishes industrial organization from strategic management is the strategy field's assumption of heterogenous firms. It seems legitimate to require that the strategy field provide a basis for its theoretical foundations.

A major advancement in the strategy field is the development of models where firm heterogeneity is an endogenous creation of economic actors.

One approach is to integrate the resource-based view with the organizational economics approach (Teece, Pisano, & Shuen, 1990), in which heterogeneity is explained as an outcome of a disequilibrium process of Schumpeterian competition (Iwai, 1984), path dependencies (Arthur, 1989), commitments and complementary assets (Grant, 1990).

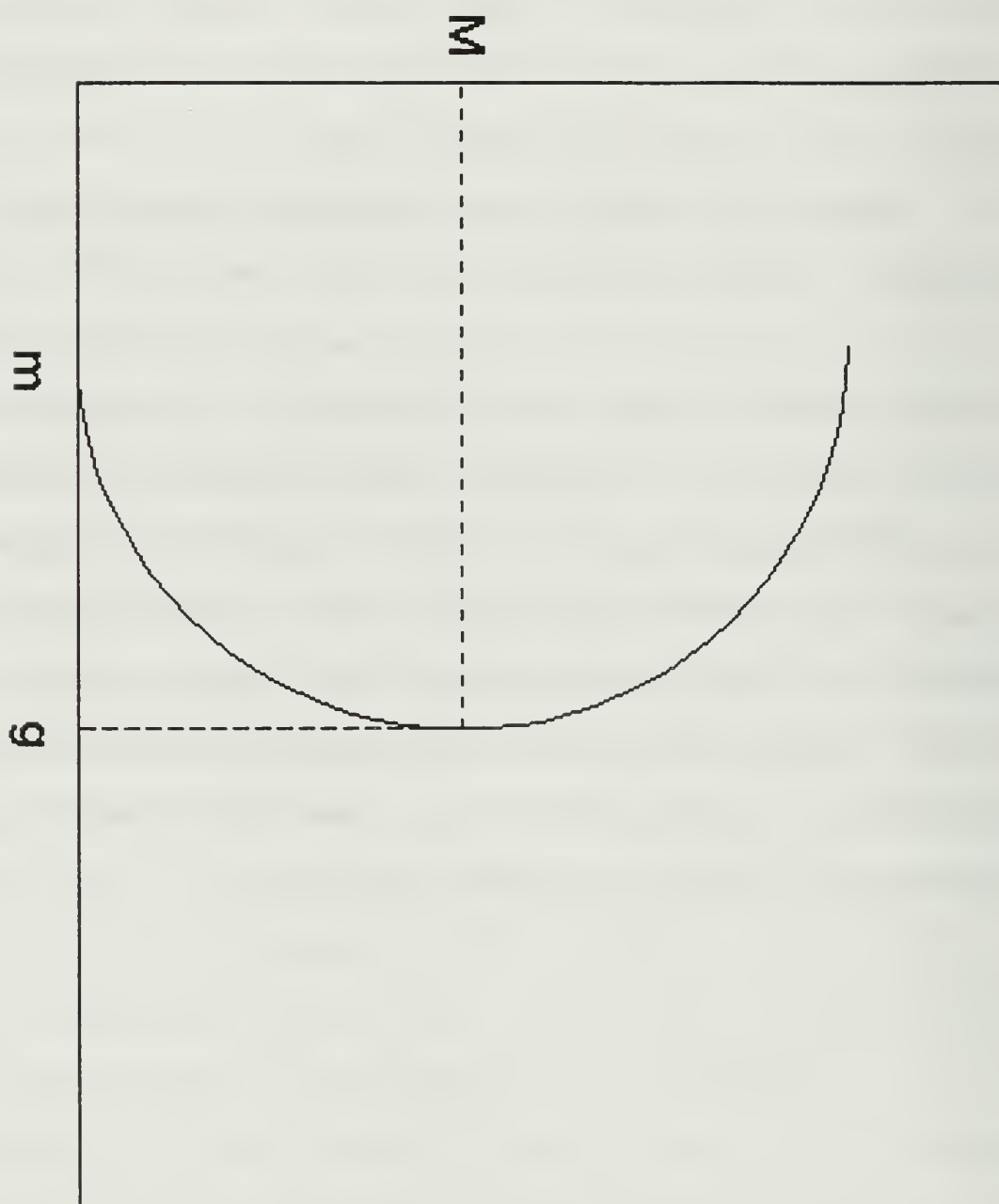
A second approach utilizes the equilibrium models (Shapiro, 1989) of industrial organization to explain the nature of the heterogenous firm. Lippman & Rumelt (1982), for example, generate an equilibrium in which firm heterogeneity is an endogenous outcome. Their model provides a persuasive argument that firm heterogeneity may be sustained in equilibrium without invoking ad hoc entry barriers. A second type of model stresses "the heterogeneity (of managerial services), their uniqueness for every individual firm" (Penrose, 1959, p.199). Oi (1983) models the heterogenous firm as the equilibrium outcome of an underlying distribution of entrepreneurial abilities.

An advantage of the disequilibrium approach is that time may be viewed as the fourth dimension of resources (along with land, labor, and capital, broadly defined). Time and attention are scarce resources (Simon, 1976) and are sources of competitive advantage that are neglected in single-period equilibrium analysis. The approach of organizational economics (Barney &

Ouchi, 1986) of real heterogenous firms, competing in real (calendar) time appears more relevant (and no less rigorous) than orthodox equilibrium models. Nevertheless, contributions to the field may be achieved on both fronts. Amit & Schoemaker (1990), for example, analyze the sustainability of heterogenous firms both in, and outside of, equilibrium.

5. Integration of the resource-based view with industry analysis. Competitive advantage is a function of industry analysis, organizational governance and firm effects (in the form of resource advantages and strategies). The resource-based model has the potential to coalesce these research streams to provide a rich and rigorous theory of the strategic firm (Rumelt, 1984). Indeed, Wernerfelt & Montgomery (1988) give simultaneous attention to the resource-based view, organizational economics and the industrial organization paradigm and merits emulation. Simultaneous attention to these research streams is precisely the approach that warrants future research.

Growth of the Number of Managers



Growth of the Firm

Figure 1

TABLE 1

Isolating Mechanisms

I. Resource-based view/ strategy literature:

<u>Mechanism</u>	<u>Reference</u>
Resource position barriers	Wernerfelt, 1984
Unique or rare resources which are not perfectly mobile	Barney, 1989b
Unique managerial talent that is inimitable	Penrose, 1959
Resources with limited strategic substitutability by equivalent assets	Dierickx & Cool, 1989
Valuable, nontradeable or imperfectly tradeable resources	Barney, 1989a Dierickx & Cool, 1989
Distinctive competencies and core competencies that are difficult to replicate	Andrews, 1971 Dosi, Teece, & Winter, 1990
Unique combinations of business experience	Huff, 1982; Prahalad & Bettis, 1986; Spender, 1989
Corporate culture that is valuable, rare and imperfectly imitable due to social complexity	Barney, 1986a
Culture that is the result of human action but not of human design	Arrow, 1974; Camerer & Vepsäläinen, 1988; Hayek, 1978
Invisible assets that by their nature are difficult to imitate	Itami, 1987
Valuable heuristics and processes that are not easily imitated	Schoemaker, 1990
Time compression diseconomies	Dierickx & Cool, 1989

II. Organizational economics literature:

<u>Mechanism</u>	<u>Reference</u>
Schumpeter's resource combinations	Schumpeter, 1934
Team embodied skills	Nelson & Winter, 1982
Organizational innovation that is characterized by a slow diffusion process	Armour & Teece, 1978 Mahajan, Sharma & Bettis, 1988
Unique historical conditions in which firm-specific skills and resource combinations result in path dependencies and heterogeneity over time	Arthur, 1989 Barney, 1989b De Gregori, 1987
Uncertain imitability due to bounded rationality and causal ambiguity	Lippman & Rumelt, 1982
Idiosyncratic assets	Williamson, 1979
The rich connections between ambiguity and uniqueness	Demsetz, 1973 Reed & DeFillippi, 1990
Co-specialized assets	Teece, 1986, 1987
Organizational capital	Tomer, 1987
Reputation	Klein & Leffler, 1981 Kreps & Wilson, 1982
Private or asymmetric information and knowledge as strategic resources	Barney, 1986c Eisenhardt, 1989 Holmstrom, 1979 Winter, 1988
First-mover advantages in acquiring information and other valuable resources that inhibit imitation	Lieberman & Montgomery, 1988
Firm-specific knowledge of buyers sellers and worker's capabilities	Prescott & Visscher, 1980
Imperfect factor markets	Barney, 1986c Wernerfelt & Montgomery, 1986
Ill-defined property rights	Alchian & Demsetz, 1972
Patents, trademarks, and copyrights	Alchian, 1982

III. Industrial organization literature:

<u>Mechanism</u>	<u>Reference</u>
Investments that entail high exit barriers and high switching costs	Porter, 1980
High sunk cost investments	Baumol, Panzar, & Willig, 1982
Learning and experience curve advantages that are kept proprietary	Lieberman, 1987 Spence, 1981
Legal restrictions on entry	Stigler, 1968
Economies of scale combined with imperfect capital markets	Bain, 1968

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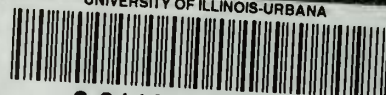
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