the empirical implications of these assumptions and how the resource-based view of the firm deals with some broader issues in strategic management.

The next article in the forum is by Kathleen Conner of the Wharton School of Business at the University of Pennsylvania. Professor Conner examines the relationship between the resource-based model of competitive advantage and streams of research in industrial organization economics. After concluding this careful analysis, Professor Conner discusses whether or not the resource-based view of the firm meets the criteria needed to be considered a new "theory of the firm."

The third article in the forum is by Richard Castanias (University of California at Davis) and Constance Helfat (Northwestern University). Professors Castanias and Helfat apply the resource-based view of the firm in an analysis of rents attributable to managers in firms. In an important way, this article brings managers as sources of distinctive competence back into strategic analysis. And it accomplishes this objective in a way that generates numerous empirical insights into the rent generation process in a firm.

The fourth article in the forum is by Jeff Harrison (Clemson University), Mike Hitt (Texas A&M University), Robert Hoskisson (Texas A&M University), and Duane Ireland (Baylor University). These authors examine some of the implications of the resource-based model in the context of returns to mergers and acquisitions. As an empirical article, Harrison et al. suggest some intriguing, if tentative, ways that the resource-based model can be examined empirically.

The final article in the forum is by Marlene Fiol (New York University). Professor Fiol's study, in many ways, pushes the boundaries of the resource-based model of competitive advantage the furthest of any of the forum articles. Professor Fiol takes the ideas of distinctive competence and specific firm assets as given, and discusses in detail the linguistic and anthropological underpinnings of managing culture-based distinctive competencies. Her analysis points to numerous important links between organizational behavior, organization theory, and a resource-based model of competitive advantage.

In my experience as an Associate Editor at the *Journal of Management*, I have never faced as many difficult decisions as was the case when putting this special theory forum together. There simply were more high quality papers submitted than there was room in the special forum. I expect that several of these papers will appear in subsequent issues of the *Journal of Management*.

Although the papers in this special forum address many of the key problems raised by the resource-based view of the firm, they generate many more questions than they answer. This is, I think, good for the field. Taken together, these papers help define some key points in a research agenda that should keep engaged for some time those scholars interested in sources of sustained competitive advantage.

Journal of Management
1991, Vol. 17, No. 1, 99-120

Firm Resources and Sustained Competitive Advantage

Jay Barney
Texas A&M University

Understanding sources of sustained competitive advantage has become a major area of research in strategic management. Building on the assumptions that strategic resources are heterogeneously distributed across firms and that these differences are stable over time, this article examines the link between firm resources and sustained competitive advantage. Four empirical indicators of the potential of firm resources to generate sustained competitive advantage—value, rareness, imitability, and substitutability—are discussed. The model is applied by analyzing the potential of several firm resources for generating sustained competitive advantages. The article concludes by examining implications of this firm resource model of sustained competitive advantage for other business disciplines.

Understanding sources of sustained competitive advantage for firms has become a major area of research in the field of strategic management (Porter, 1985; Rumelt, 1984). Since the 1960's, a single organizing framework has been used to structure much of this research (Andrews, 1971; Ansoff, 1965; Hofer & Schendel, 1978). This framework, summarized in Figure One, suggests that firms obtain sustained competitive advantages by implementing strategies that exploit their internal strengths, through responding to environmental opportunities, while neutralizing external threats and avoiding internal weaknesses. Most research on sources of sustained competitive advantage has focused either on isolating a firm's opportunities and threats (Porter, 1980, 1985), describing its strengths and weaknesses (Hofer & Schendel, 1978; Penrose, 1958; Stinchcombe, 1965), or analyzing how these are matched to choose strategies.

Although both internal analyses of organizational strengths and weaknesses

Discussions with members of the Strategic Management Group at Texas A&M University, including Mike Hitt, Tom Turk, Bob Hoskisson, Barry Baysinger, and Abby McWilliams, have been helpful in the development of these ideas. The rudiments of the argument were presented and discussed at the second annual Wharton Conference on Models of Strategic Choice. Discussions with Raphael Amit, Birger Wernerfelt, Michael Porter, David Teece, Dick Rumelt, Margie Petroff, Connie Helfat, Sid Winter, and Garth Saloner have had a significant impact on the ideas developed here. I would especially like to thank Cynthia Montgomery for convincing me to write this article.

Address all correspondence to Jay B. Barney, Department of Management, Texas A&M University, College Station, TX 77843.

Copyright 1991 by the Southern Management Association 0149-2063/91/$2.00.

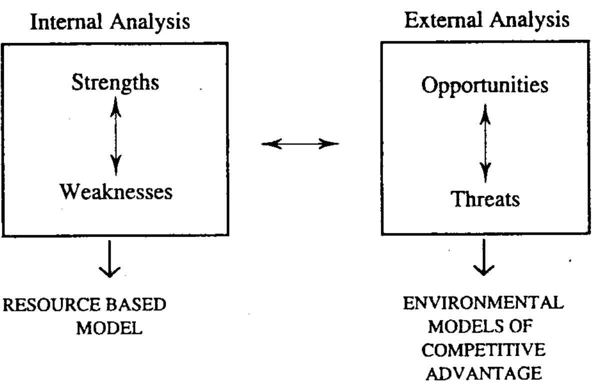

Figure One. The relationship between traditional "strengths-weaknesses-opportunities-threats" analysis, the resource based model, and models of industry attractiveness.

and external analyses of opportunities and threats have received some attention in the literature, recent work has tended to focus primarily on analyzing a firm's opportunities and threats in its competitive environment (Lamb, 1984). As exemplified by research by Porter and his colleagues (Caves & Porter, 1977; Porter, 1980, 1985) this work has attempted to describe the environmental conditions that favor high levels of firm performance. Porter's (1980) "five forces model," for example, describes the attributes of an attractive industry and thus suggests that opportunities will be greater, and threats less, in these kinds of industries.

To help focus the analysis of the impact of a firm's environment on its competitive position, much of this type of strategic research has placed little emphasis on the impact of idiosyncratic firm attributes on a firm's competitive position (Porter, 1990). Implicitly, this work has adopted two simplifying assumptions. First, these environmental models of competitive advantage have assumed that firms within an industry (or firms within a strategic group) are identical in terms of the strategically relevant resources they control and the strategies they pursue (Porter, 1981; Rumelt, 1984; Scherer, 1980). Second, these models assume that should resource heterogeneity develop in an industry or group (perhaps through new entry), that this heterogeneity will be very short lived because the resources that firms use to implement their strategies are highly mobile (i.e., they can be bought and sold in factor markets) (Barney, 1986a; Hirshleifer, 1980).[1]

There is little doubt that these two assumptions have been very fruitful in clarifying our understanding of the impact of a firm's environment on performance. However, the resource-based view of competitive advantage, because it examines the link between a firm's internal characteristics and performance, obviously cannot build on these same assumptions. These assumptions effectively eliminate firm resource heterogeneity and immobility as possible sources of competitive advantage (Penrose, 1958; Rumelt, 1984; Wernerfelt, 1984, 1989). The resource-based view of the firm substitutes two alternate assumptions in analyzing sources of competitive advantage. First, this model assumes that firms within an industry (or group) may be heterogeneous with respect to the strategic resources they control. Second, this model assumes that these resources may not be perfectly mobile across firms, and thus heterogeneity can be long lasting. The resource-based model of the firm examines the implications of these two assumptions for the analysis of sources of sustained competitive advantage.

This article begins by defining some key terms, and then examining the role of idiosyncratic, immobile firm resources in creating sustained competitive advantages. Next, a framework for evaluating whether or not particular firm resources can be sources of sustained competitive advantage is developed. As an example of how this framework might be applied, it is used in the analysis of the competitive implications of several resources that others have suggested might be sources of sustained competitive advantage. The article concludes by describing the relationship between this resource-based model of sustained competitive advantage and other business disciplines.

Defining Key Concepts

To avoid possible confusion, three concepts that are central to the perspective developed in this article are defined in this section. These concepts are firm resources, competitive advantage, and sustained competitive advantage.

Firm Resources

In this article, *firm resources* include all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness (Daft, 1983). In the language of traditional strategic analysis, firm resources are strengths that firms can use to conceive of and implement their strategies (Learned, Christensen, Andrews, & Guth, 1969; Porter, 1981).

A variety of authors have generated lists of firm attributes that may enable firms to conceive of and implement value-creating strategies (Hitt & Ireland, 1986; Thompson & Strickland, 1987). For purposes of this discussion, these numerous possible firm resources can be conveniently classified into three categories: physical capital resources (Williamson, 1975), human capital resources (Becker, 1964), and organizational capital resources (Tomer, 1987). Physical capital resources include the physical technology used in a firm, a firm's plant and equipment, its geographic location, and its access to raw materials. Human capital resources include the training, experience, judgment, intelligence, relationships, and insight of *individual* managers and workers in a firm. Organizational capital resources include a firm's formal reporting structure, its formal and informal planning, controlling, and coordinating systems, as well as informal relations among groups within a firm and between a firm and those in its environment.

[1]Thus, for example, Porter (1980) suggests that firms should analyze their competitive environment, choose their strategies, and then acquire the resources needed to implement their strategies. Firms are assumed to have the same resources to implement these strategies or to have the same access to these resources. More recently, Porter (1985) has introduced a language for discussing possible internal organizational attributes that may affect competitive advantage. The relationship between this "value chain" logic and the resource based view of the firm is examined below.

Of course, not all aspects of a firm's physical capital, human capital, and organizational capital are strategically relevant resources. Some of these firm attributes may prevent a firm from conceiving of and implementing valuable strategies (Barney, 1986b). Others may lead a firm to conceive of and implement strategies that reduce its effectiveness and efficiency. Still others may have no impact on a firm's strategizing processes. However, those attributes of a firm's physical, human, and organizational capital that do enable a firm to conceive of and implement strategies that improve its efficiency and effectiveness are, for purposes of this discussion, firm resources (Wernerfelt, 1984). The purpose of this article is to specify the conditions under which such firm resources can be a source of sustained competitive advantage for a firm.

Competitive Advantage and Sustained Competitive Advantage

In this article, a firm is said to have a *competitive advantage* when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors. A firm is said to have a *sustained competitive advantage* when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors *and* when these other firms are unable to duplicate the benefits of this strategy. These two definitions require some discussion.

First, these definitions do not focus exclusively on a firm's competitive position vis-a-vis firms that are already operating in its industry. Rather, following Baumol, Panzar, and Willig (1982), a firm's competition is assumed to include not only all of its current competitors, but also potential competitors poised to enter an industry at some future date. Thus, a firm that enjoys a competitive advantage or a sustained competitive advantage is implementing a strategy not simultaneously being implemented by any of its current or potential competitors (Barney, McWilliams, & Turk, 1989).

Second, the definition of *sustained* competitive advantage adopted here does not depend upon the period of calendar time during which a firm enjoys a competitive advantage. Some authors have suggested that a sustained competitive advantage is simply a competitive advantage that lasts a long period of calendar time (Jacobsen, 1988; Porter, 1985). Although an understanding of how firms can make a competitive advantage last a longer period of calendar time is an important research issue, the concept of *sustained* competitive advantage used in this article does not refer to the period of calendar time that a firm enjoys a competitive advantage.

Rather, whether or not a competitive advantage is sustained depends upon the possibility of competitive duplication. Following Lippman and Rumelt (1982) and Rumelt (1984), a competitive advantage is sustained only if it continues to exist after efforts to duplicate that advantage have ceased. In this sense, this definition of sustained competitive advantage is an equilibrium definition (Hirshleifer, 1982).

Theoretically, this equilibrium definition of sustained competitive advantage has several advantages, not the least of which is that it avoids the difficult problem of specifying how much calendar time firms in different industries must possess

competitive advantages in order for those advantages to be "sustained." Empirically, sustained competitive advantages may, on average, last a long period of calendar time. However, it is not this period of calendar time that defines the existence of a sustained competitive advantage, but the inability of current and potential competitors to duplicate that strategy that makes a competitive advantage sustained.

Finally, that a competitive advantage is sustained does not imply that it will "last forever." It only suggests that it will not be competed away through the duplication efforts of other firms. Unanticipated changes in the economic structure of an industry may make what was, at one time, a source of sustained competitive advantage, no longer valuable for a firm, and thus not a source of any competitive advantage. These structural revolutions in an industry—called "Schumpeterian Shocks" by several authors (Barney, 1986c; Rumelt & Wensley, 1981; Schumpeter, 1934, 1950)—redefine which of a firm's attributes are resources and which are not. Some of these resources, in turn, may be sources of sustained competitive advantage in the newly defined industry structure (Barney, 1986c). However, what were resources in a previous industry setting may be weaknesses, or simply irrelevant, in a new industry setting. A firm enjoying a sustained competitive advantage may experience these major shifts in the structure of competition, and may see its competitive advantages nullified by such changes. However, a sustained competitive advantage is *not* nullified through competing firms duplicating the benefits of that competitive advantage.

Competition with Homogeneous and Perfectly Mobile Resources

Armed with these definitions, it is now possible to explore the impact of resource heterogeneity and immobility on sustained competitive advantage. This is done by examining the nature of competition when firm resources are *perfectly* homogeneous and mobile.

In this analysis, it is not being suggested that there are industries where the attributes of perfect homogeneity and mobility exist. Although this is ultimately an empirical question, it seems reasonable to expect that most industries will be characterized by at least some degree of resource heterogeneity and immobility (Barney & Hoskisson, 1989). Thus, rather than making an assertion that firm resources are homogeneous and mobile, the purpose of this analysis is to examine the possibility of discovering sources of sustained competitive advantage under these conditions. Not surprisingly, it is argued that firms, in general, *cannot* expect to obtain sustained competitive advantages when strategic resources are evenly distributed across all competing firms and highly mobile. This conclusion suggests that the search for sources of sustained competitive advantage must focus on firm resource heterogeneity and immobility.

Resource Homogeneity and Mobility and Sustained Competitive Advantage

Imagine an industry where firms possess exactly the same resources. This condition suggests that firms all have the same amount and kinds of strategically relevant physical, human, and organizational capital. Is there a strategy that could be conceived of and implemented by any one of these firms that could not also be

conceived of and implemented by all other firms in this industry? The answer to this question must be no. The conception and implementation of strategies employs various firm resources (Barney, 1986a; Hatten & Hatten, 1987; Wernerfelt, 1984). That one firm in an industry populated by identical firms has the resources to conceive of and implement a strategy means that these other firms, because they possess the same resources, can also conceive of and implement this strategy. Because these firms all implement the same strategies, they all will improve their efficiency and effectiveness in the same way, and to the same extent. Thus, in this kind of industry, it is not possible for firms to enjoy a sustained competitive advantage.

Resource Homogeneity and Mobility and First-Mover Advantages

One objection to this conclusion concerns so-called "first mover advantages" (Lieberman & Montgomery, 1988). In some circumstances, the first firm in an industry to implement a strategy can obtain a sustained competitive advantage over other firms. These firms may gain access to distribution channels, develop goodwill with customers, or develop a positive reputation, all before firms that implement their strategies later. Thus, first-moving firms may obtain a sustained competitive advantage.

However, upon reflection, it seems clear that if competing firms are *identical* in the resources they control, it is not possible for any one firm to obtain a competitive advantage from first moving. To be a first mover by implementing a strategy before any competing firms, a particular firm must have insights about the opportunities associated with implementing a strategy that are not possessed by other firms in the industry, or by potentially entering firms (Lieberman & Montgomery, 1988). This unique firm resource (information about an opportunity) makes it possible for the better informed firm to implement its strategy before others. However, by definition, there are no unique firm resources in this kind of industry. If one firm in this type of industry is able to conceive of and implement a strategy, then all other firms will also be able to conceive of and implement that strategy, and these strategies will be conceived of and implemented in parallel, as identical firms become aware of the same opportunities and exploit that opportunity in the same way.

It is not being suggested that there can never be first-mover advantages in industries. It is being suggested that in order for there to be a first-mover advantage, firms in an industry must be heterogeneous in terms of the resources they control.

Resource Homogeneity and Mobility and Entry/Mobility Barriers

A second objection to the conclusion that sustained competitive advantages cannot exist when firm resources in an industry are perfectly homogeneous and mobile concerns the existence of "barriers to entry" (Bain, 1956), or more generally, "mobility barriers" (Caves & Porter, 1977). The argument here is that even if firms within an industry (group) are perfectly homogeneous, if there are strong entry or mobility barriers, these firms may be able to obtain a sustained competitive advantange vis-a-vis firms that are not in their industry (group). This sustained competitive advantage will be reflected in above normal economic performance for those firms protected by the entry or mobility barrier (Porter, 1980).

However, from another point of view, barriers to entry or mobility are only possible if current and potentially competing firms are heterogeneous in terms of the resources they control *and* if these resources are not perfectly mobile (Barney, McWilliams, Turk, 1989). The heterogeneity requirement is self-evident. For a barrier to entry or mobility to exist, firms protected by these barriers must be implementing different strategies than firms seeking to enter these protected areas of competition. Firms restricted from entry are unable to implement the same strategies as firms within the industry or group. Because the implementation of strategy requires the application of firm resources, the inability of firms seeking to enter an industry or group to implement the same strategies as firms within that industry or group suggests that firms seeking to enter must not have the same strategically relevant resources as firms within the industry or group. Thus, barriers to entry and mobility only exist when competing firms are heterogeneous in terms of the strategically relevant resources they control. Indeed, this is the definition of strategic groups suggested by McGee and Thomas (1986).

The requirement that firm resources be immobile in order for barriers to entry or mobility to exist is also clear. If firm resources are perfectly mobile, then any resource that allows some firms to implement a strategy protected by entry or mobility barriers can easily be acquired by firms seeking to enter into this industry or group. Once these resources are acquired, the strategy in question can be conceived of and implemented in the same way that other firms have conceived of and implemented their strategies. These strategies are thus not a source of sustained competitive advantage.

Again, it is not being suggested that entry or mobility barriers do not exist. However, it is being suggested that these barriers only become sources of sustained competitive advantage when firm resources are not homogeneously distributed across competing firms and when these resources are not perfectly mobile.

Research that has focused on the impact of opportunities and threats in a firm's environment on competitive advantage has recognized the limitations inherent in analyzing competitive advantage with the assumption that firm resources are homogeneously distributed and highly mobile. In his recent work, Porter (1985) introduced the concept of the value chain to assist managers in isolating potential resource-based advantages for their firms. The resource-based view of the firm developed here simply pushes this value chain logic further, by examining the attributes that resources isolated by value chain analyses must possess in order to be sources of sustained competitive advantage (Porter, 1990).

Firm Resources and Sustained Competitive Advantage

Thus far, it has been suggested that in order to understand sources of sustained competitive advantage, it is necessary to build a theoretical model that begins with the assumption that firm resources may be heterogeneous and immobile. Of course, not all firm resources hold the potential of sustained competitive advantages. To have this potential, a firm resource must have four attributes: (a) it must be valuable, in the sense that it exploit opportunities and/or neutralizes threats in a firm's environment, (b) it must be rare among a firm's current and potential com-