Trade-offs in managing resources and capabilities

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Executive Overview

The resource-based view of the firm is a useful approach in determining the internal sources of competitive advantage. Nevertheless, managers need to note some caveats regarding this theory. Contrary to the guidance provided by the resource-based view, the values of certain resources and capabilities may actually be enhanced by seeking more rather than less competition, limiting rather than supporting functional successes, and destroying rather than protecting their exclusivity. We examine five situations in which certain processes may cause seemingly valuable resources and capabilities to lead instead to competitive disadvantages for firms as diverse as Hewlett-Packard, Food Lion, and AT&T. These trade-offs suggest that managers following the resource-based view as a guide may focus too narrowly on individual resources and capabilities, without adequately appreciating the interactions among multiple resources and capabilities and their interactions with the environment.

That American Airlines was the first company in its industry to introduce a frequent flyer program is well known. As a strategy for building brand loyalty and attracting repeat business, the program was designed to provide competitive advantage by encouraging customers to fly on American rather than on other carriers. It is also well known that American's program was imitated within three months by Delta Air Lines, Inc., and that such programs became commonplace in the industry within a year of American's innovation.

Not so well understood, however, is that the many imitations of American's program helped rather than hurt its competitive advantage. Essentially, the proliferation of frequent flyer programs changed the competitive environment in the airline industry. With the advent of such programs, brand loyalty to all airlines increased, and the need for price competition and promotion was reduced. Since American was a market leader, it benefited from its strong brand loyalty and the lessened price competition more than most of its competitors. Thus, American's competitive advantage from its frequent flyer program was not really lost to other airlines adopting similar programs; it simply shifted to an overall competitive-position advantage from a narrower first-mover advantage. Of course, frequent flyer programs are also a double-edged sword for American Airlines and other airlines. Over the years, they have become an increasingly heavy financial burden, and a ticking time bomb with millions of unredeemed miles that could be traded for free tickets at any time, for some airlines. It can be argued that, when customer loyalty comes with too big a price tag, such loyalty-creating programs—which once were strengths—can turn into competitive disadvantages.

This example shows how important it is for managers to assess resources and capabilities carefully and with a broad perspective. One key issue here is whether imitability of a resource, in this case the frequent flyer program, is desirable. A major theory in strategic management, known as the resource-based view of the firm, would generally maintain that easier imitability of one's resources or capabilities is harmful, because it allows other firms to copy the firm's unique strengths. Our airline example suggests the opposite; that is, under certain circumstances, better imitability may actually be a positive feature to have. Imitability seems particularly advantageous with new technologies, where their wide adoption provides the basis for value creation. When fax machines were first introduced, for example, they became more valuable as increasingly larger
numbers of people had fax machines to receive faxes. Since no one manufacturer could possibly have met worldwide demand, allowing the technology to be imitated and proliferated was the right strategy.

Another key issue is whether individual strengths and functional successes are always good for a firm. As the American Airlines example suggests, the functional success of its frequent flyer program has the potential to cost the firm dearly in the long run. While the resource-based view highlights the importance of individual resources and capabilities, the success of one area of a firm may actually have a negative impact on other aspects of the firm and on the bottom line. For example, the success of one functional area may make it more difficult for other departments to attract high-quality new employees. Hence, it is more important to understand the overall value of a bundle of resources and capabilities than the characteristics of individual resources and capabilities. The stakes are high, as the issue is how to manage one's overall resources and capabilities in a way that provides competitive advantage for the entire organization. In the following sections, we discuss a number of examples designed to help managers identify circumstances where broader thinking is called for.

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Desirable Resource Characteristics May Not Hold

The resource-based view of the firm was developed in the last fifteen years to counter the over-emphasis on the competitive environment in strategic thinking. The theory looks inside the firm, instead of at the external environment, for sources of competitive advantage. It holds that competitive advantage comes from the firm's own resources and capabilities, rather than from product market activities. As such, the theory is able to account for differences in firm performance not explained by industry factors. Essentially, the resource-based view focuses on identifying and determining the value of firm resources and capabilities. Resources are "stocks of available factors [tangible and intangible] that are owned or controlled by the firm."1 Capabilities are the firm's abilities to effectively utilize tangible and intangible resources for achieving strategic goals. The resource-based view focuses on how firms can acquire, maintain, deploy, and develop resources and capabilities in a manner that preserves their exclusivity and provides the firm with competitive advantage.

According to this view, a resource or capability must maintain certain characteristics to contribute to competitive advantage. This key-characteristics approach, a mainstream of the resource-based view,2 suggests that desirable resources and capabilities need to be valuable, rare, inimitable, and sustainable.3 Other desirable characteristics of the firm's resources and capabilities include limited competition, imperfect substitutability, and imperfect mobility, so that the firm can better maintain its unique position.4 In essence, the resource-based view proposes that resources and capabilities with these desirable characteristics represent the strengths of a firm, which lead to its competitive advantage. For example, a firm such as The Walt Disney Company is seen as successful in part because it has exclusive ownership of its famous cartoon figures, and these figures are rare and not easily substituted or imitated by other firms. Similarly, Harley-Davidson Inc.'s successful motorcycle business is built upon its ability to maintain a unique brand image that is valuable, rare, inimitable, and difficult to substitute.

However, as the opening American Airlines example shows, a narrow focus on maintaining the right resource characteristics entails some risks for firms, since situations often occur that may change the picture. We want to note several of these situations and propose that the managerial implications of following the key-characteristics approach may be more complicated than generally recognized.

We offer two cautions against the key-characteristics approach. First, we argue that resources and capabilities ought to be assessed across functional areas, in bundles, and with an extended time frame. In other words, the desirable characteristics of individual resources and capabilities may not always be the most relevant issue for managers to consider. Second, we examine three desirable characteristics and show that, under certain conditions, focusing on them may be a disservice to the firm. Importantly, we draw our conclusions within a carefully constructed contingency perspective, which means that some characteristics may be desirable in certain situations but not in others. While the resource-based view may be informative for managers in most situations, in some it can be too simplistic.

Our call to managers to use caution in applying the resource-based view arises out of a growing
recognition among researchers that the accepted desirable characteristics do not necessarily provide firms with competitive advantage. Certain factors may lead to outcomes different from, or even contradictory to, those suggested by the resource-based view. As we will describe below, the values of resources and capabilities may actually be enhanced by seeking more rather than less competition, limiting rather than supporting functional successes, and destroying rather than protecting exclusivity.

Instead of following the resource-based view too narrowly, managers need to develop a more complete understanding of how resources and capabilities interact over time and the conditions under which each desirable characteristic retains or loses importance. To this end, understanding a few trade-offs that complicate the way resources and capabilities are managed is essential. Trade-offs refer to competing or contradictory interests to be considered in making decisions. The overall trade-off in the resource-based view is that valuable resources and capabilities, if not managed within a broader context, might not be valuable after all. They can create competitive advantage and disadvantage at the same time, as in the case of American Airlines.

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There are two broad types of trade-offs: internal and external (see Table 1). Internal trade-offs are about the processes within the firm through which resources and capabilities are developed, deployed, and transferred. Through these processes, apparent strengths may inadvertently turn into weaknesses. External trade-offs are the interfirm processes through which resources and capabilities are generated, exchanged, and utilized. Through these interfirm processes, the accepted desirable characteristics can often lose their importance. Below we first explore two internal trade-offs.

### Internal Trade-offs of Resources and Capabilities

#### Linkage Trade-off

The linkage trade-off refers to a situation where one type of resource or capability will necessarily...
impact on one or more other resources or capabilities, either positively or negatively. Based on a case study of twenty R&D projects at five firms, it was reported that valuable capabilities (or core capabilities) sometimes have dysfunctional flip sides. At Hewlett-Packard, for instance, it was found that its prior development successes served to create within HP a dominant discipline in its design engineering function. This dominance led one researcher to conclude that "design engineers have high status because new products that are directly evaluated by the market originate in design engineering; in contrast, the expertise of manufacturing engineers is expended in projects less directly tied to the bottom line and more difficult to evaluate." Because of design engineering's vaunted status, the other functions were seen to be less attractive places to work. Certain career paths, functions and roles were therefore viewed as less credible and carrying low expectations.

As a result, and paradoxically, HP's valuable design engineering capability may be a source of overall disadvantage to the firm because "core capabilities simultaneously enhance and inhibit development." A narrow application of the resource-based view would clearly conclude that HP's design engineering strength would provide it with a competitive advantage. However, such a conclusion may not be merited because this strength may limit the value of other important resources and capabilities.

Many U.S. commercial banks encountered this same issue when they first moved into offering investment-banking activities in the 1980s. The investment bankers received significantly higher status and pay than traditional commercial banking officers, and this disparity created major organizational problems in terms of internal communications, employee satisfaction and retention, and customer relations. The point is clear: Whenever one functional resource or capability becomes acknowledged as a standout or organizational focus, other functional resources or capabilities are more likely to be negatively affected. The key management task is to manage this linkage trade-off by finding a way to use valuable capabilities while maintaining some parity among the relative status, importance, and perceived value of the organization's varied functional areas.

The linkage trade-off also means that a resource or capability's value is dependent upon the presence of other resources or capabilities. With respect to technology, for example, recent research suggests that successful innovations are based on a dynamic combination of various resources and capabilities, rather than on only one type of resource or capability. With respect to general business operations, consider the freefall of the grocery chain Food Lion after it received adverse publicity based on ABC’s PrimeTime Live exposé of the company's food-handling practices in 1992. What hurt Food Lion most was its obsession with a single strength: cost control. In order to achieve strict cost control, management tolerated unsanitary food-handling practices and thereby alienated its employees. The employee dissatisfaction found public voice in the PrimeTime Live revelations.

This same mistake of relying solely on cost control also ruined Food Lion's expansion in the Dallas-Fort Worth market. By emphasizing its strength in cost control, Food Lion apparently failed to develop other important resources and capabilities along the value chain. Because it ignored "many of the important relationships and interdependencies between upstream and downstream activities," Food Lion became vulnerable to competition.

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In contrast, companies like Wal-Mart manage their multiple resources and capabilities and develop them into multiple strengths along the value chain, a practice which leads to sustainable competitive advantage. In short, a focus on one resource or capability, or on one approach exclusively (e.g., cost), may lead to ignoring critical complementary resources and capabilities.

The point is that the development and employment of certain resources and capabilities can decrease as well as increase the value of other resources and capabilities (the HP example). It is even worse when management fails to recognize the trade-offs and instead focuses only on certain resources or capabilities and fails to develop or maintain needed complementary resources and capabilities (the Food Lion example). The implication of the linkage trade-off is that, since resources and capabilities often affect each other's value, managers need to consider multiple resources and capabilities, rather than focusing on one at a time (see Table 1). If the collective impact of a resource or capability and its dysfunctional flip side on other resources and capabilities is negative to the firm, then it is hard to argue that it is truly valuable.

Learning Trade-off

The second internal trade-off has to do with learning and acquiring new knowledge, a capability
which is of critical value to a firm. A firm’s learning effectiveness hinges on its absorptive capacity, or its ability to recognize, utilize, and commercialize new, external information. But there appears to be a trade-off between inward-looking and outward-looking absorptive capacities. If a firm is adept at one, this very adeptness may hinder the other. On the one hand, the dominance of inward learning can limit the incorporation of outside knowledge, leading to a dysfunctional, not-invented-here attitude among managers. On the other hand, outward-looking dominance can undermine the firm’s ability to develop knowledge internally or to learn from best practices in the firm.

For example, Samsung Electronics is considered to be particularly adept at benchmarking—discovering how others operate and adapting this knowledge into the firm—but rarely does it innovate through internal experimentation, as do 3M, Sony, HP, and Rubbermaid. In general, firms are more likely to benefit from inward than outward learning when their environments are changing rapidly and they are competing based on product innovation and differentiation.

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In a related manner, learning failure also comes from learning myopia, or a focus on exploiting current knowledge at the expense of exploring new knowledge. Exploration refers to experimentation aiming to create major breakthroughs in products, processes, or practices. Exploitation refers to the leveraging of existing resources and capabilities. While a firm’s possession and use of certain existing knowledge may lead to improved current performance, this existing knowledge may simultaneously reduce incentives for pursuit of new knowledge.

For example, international business research has found that decisions to license firm knowledge to foreign agents rather than transferring it to subsidiaries impede the development of knowledge in foreign markets. Pursuit of one approach reduces the firm’s ability to develop competence in the other. Between the two, knowledge exploration is usually seen as more important than exploitation for firms when they are in young and evolving industries. A changing environment demands the ability to constantly uncover new ideas and approaches to doing business.

As can be seen, the value of existing resources and capabilities partially depends on whether they facilitate the acquisition of new resources and capabilities. Thus, the desirable characteristics of individual resources or capabilities are insufficient in and of themselves for value determination. Rather than becoming complacent about possessing certain resources and capabilities, managers should pay more attention to having the ability to develop and acquire future resources and capabilities, and to assessing the degree to which current resources and capabilities facilitate or inhibit such activities.

So far we have discussed two internal trade-offs that may turn strengths into weaknesses. These examples suggest that the achievement of competitive advantage is not always as simple as having certain individual strengths. Instead, firms must (1) own and properly deploy multiple resources and capabilities across functional areas to maximize their overall value, and (2) continually acquire, develop, and enhance their resources and capabilities. Although these points are being increasingly recognized in the resource-based view, the two internal trade-offs demonstrate their real-world relevance to managers. Our overall suggestion for managers regarding these points is to adopt a broader perspective whenever analyzing the contributions of resources and capabilities.

In addition to the two internal trade-offs explored above, however, processes beyond the firm (e.g., competition and environmental changes) can also have an important impact on the value of some resources and capabilities. In the next section, we directly and critically examine several accepted desirable characteristics through several external trade-offs, with an emphasis on interactions with other firms and the environment.

**External Trade-offs of Resources and Capabilities**

Increasingly, interfir relationships and processes affect a firm’s success in the marketplace. Although firms can own many resources and capabilities, often their critical resources and capabilities span firm boundaries, and their interfirm linkages provide a source of competitive advantage. For example, the investment analysis of a biotechnology firm typically involves an assessment of the quality of its external partnerships, given the importance of such relationships to the firm’s success. Moreover, exclusive alliance partnerships among firms provide partners with access to all forms of complementary resources and capabilities, sometimes to such an extent that a given firm is little more than an alliance-manage-
ment operation. Leading apparel maker Nike Inc., for example, contracts nearly all of its manufacturing and uses United Parcel Service Inc. to manage distribution, delivery, and warehousing for all of its Nike.com operations, and even to manage its website. When an Internet user logs on to Nike.com, she literally logs on to UPS’s system.

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As such, there are important interfirm processes (or external trade-offs) related to the management of resources and capabilities. The external trade-offs cause us to directly re-examine the applicability of the accepted key characteristics. This does not mean that the key characteristics do not lead to competitive advantage. In fact, maintaining these key characteristics is mostly advisable, except in certain situations. Thus, in this section, we discuss the conditions under which three key characteristics might not always be desirable. These three are resource mobility, resource imitability, and resource competition.

Networking Trade-off

In today’s business environment, a firm’s external network of customers, suppliers, and competitors is critical. To gain valuable resources and capabilities from external sources, firms need to build formal and informal relationships with other firms. For instance, strategic alliances have become vital to many firms’ competitive positions today. Companies as diverse as Coming Inc. in the U.S. and Aérospatiale in Europe are now generating over half of their sales from alliances. Members of alliances and business networks are believed to be better able to absorb external resources and capabilities.

American computer companies’ R&D centers in Japan, for example, reportedly have been unable to "tap into local skills and technologies because of the absence of associated manufacturing and marketing activities prevented the isolated research establishments from building linkages with local knowledge networks." The American R&D centers lacked access to the complementary external resources and capabilities necessary to allow them to profit from changes in their industry. To develop access to such external necessities, they would need to make long-term investments in network building in Japan. They also needed to make certain resources and capabilities available to their Japanese partner firms for exchanges and transfer.

The trade-off, however, is that the more interdependent relationships they develop, the less flexibility they have to explore new opportunities. On the one hand, participating in the exchange relations of networks can restrict the American firms’ options. On the other hand, not having access to external resources and capabilities can seriously threaten the very viability of the American R&D centers in Japan.

This well-known networking trade-off questions the value of having imperfect resource mobility, one of the key desirable resource characteristics. Indeed, it might be valuable in instances like these to have resources and capabilities that can be exchanged and transferred without losing much of their utility. On the contrary, having resources and capabilities specialized to one particular need may undermine the firm’s ability to pursue other options effectively. When a firm’s resources or capabilities are specifically focused on internal operations, they tend to be ineffective when applied in an interfirm (or network) context. On the other hand, when resources or capabilities are network-oriented, firms become less capable of pursuing opportunities on their own or within the firm.

Specifically regarding knowledge, there are certain barriers to knowledge transfer (or imperfect mobility) that can be both positive and negative for a firm. In research on the transfer of best practices inside the firm, it has been found that the less difficult it is to transfer certain knowledge within the firm, the less difficult it is to transfer it outside the firm as well. In making the internal transfer of a firm’s best practices (or knowledge) more efficient, a firm may decrease its ability to maintain exclusivity. While reducing knowledge mobility may impede the internal transfer of best practices, enhancing knowledge mobility may lead to unwanted knowledge dissemination to competitors.

Thus, imperfect resource mobility may or may not be a positive key characteristic; its usefulness will be contingent upon a few external and internal factors. For example, when competitive advantage is largely defined by an ability to form interfirm links (such as in the airline industry), the possession of resources and capabilities that can be shared and traded with other firms can become critical. In addition, when an industry is in its declining stage, possession of mobile and flexible resources and capabilities can provide a means to exit the industry. Finally, resource mobility is also more desirable when a firm develops a high degree of reliance on other firms for support (such as a small firm being part of a group to bid jointly for large projects).
In this case, the production capacity that can be combined with those of others (high mobility) is the key. Thus, in each of these cases, contrary to the general prescription of the resource-based view, having mobile instead of immobile resources and capabilities could be more valuable for firms.

Referring to Table 1, the networking trade-off suggests that managers need to look beyond the firm level, and in this case to integrate network-level implications into value considerations. Since the value of some resources and capabilities can be created through involvement in interfirm networking activities, a restrictive firm level of analysis may no longer be sufficient to analyze such resources and capabilities. Indeed, in certain circumstances, an overly inward-oriented firm, while independent, may have difficulty in sustaining competitive advantage. In early 2001, for example, Internet service provider PSINet Inc. maintained the industry-leading benchmark in terms of its state-of-the-art fiber-optic network designed specifically to support Internet communications. Despite such valuable resources and capabilities, however, the staunchly independent PSINet faced a strong likelihood of bankruptcy, not because its business strategy was inadequate, but because it had failed to form appropriate network-based resources and capabilities related to capital acquisition. Indeed, it is reported that PSINet’s management refused to even consider reasonable acquisition offers from potential suitors.27

As a contrary example, in the battle to set the standard for digital music, Toshiba and Time Warner recognized the importance of having network-level capabilities and allied on a DVD standard prior to manufacturing a single product. The combined firms’ relative dominance virtually assured the acceptance of their standard. Accordingly, as the PSINet and DVD examples illustrate, the desirability of this key characteristic of imperfect mobility of resources or capabilities should reflect the increasing reliance of many firms on resource or capability exchanges among firms.

In certain circumstances, an overly inward-oriented firm, while independent, may have difficulty in sustaining competitive advantage.

Imitation Trade-off

The second external trade-off is based on the competitive-strategy literature, which is concerned with gaining advantageous competitive positions against rivals as a way to generate above-normal profits. Such profits are believed to be related to structural characteristics of an industry. This approach contrasts with the resource-based view of strategy in emphasizing strategic moves that affect competition, such as by setting industry standards.28 In this way it also reveals the imitation trade-off in resource and capability management.

The imitation trade-off, as introduced above in the case of American Airlines and its frequent flyer program, is also illustrated by Netscape Communications Corp. In 1998, Netscape posted its source code to its Communicator browser software for public access on the Web. From the resource-based perspective, Netscape should have sought to retain exclusivity over this source rather than effectively giving it away. However, by opening its source code to the public, Netscape was inviting literally thousands of programmers to contribute to its offerings by taking part in the largest virtual development organization in the world.29 Hence, by allowing imitation rather than protecting against it, Netscape essentially enhanced its resource by opening it up to imitation. In this case, clearly the imitability, and the intentional imitation, of Netscape’s source code occurred because Netscape thought imitation would provide a competitive advantage. The imitation trade-off suggests that a desirable key characteristic such as imperfect imitability can be either positive or negative.

The value of keeping Netscape’s source code proprietary is dependent upon the level of analysis at which value is to be assessed. From one perspective, Netscape has given away the store. But from another perspective, Netscape has obtained access to a virtual programming organization that may provide the company with significant competitive advantages. This is reminiscent of Lotus Development Corporation’s good luck in having so many users of its 1-2-3 product make unauthorized copies of it that it became entrenched as the dominant spreadsheet program for corporate America. Lotus later capitalized on its installed base to issue numerous product updates at considerable profit margins. Here, clearly, Lotus’ inability to prevent its software from being imitated resulted in an opportunity for it to establish an installed base that favored it over competitors for many years.

As such, again the value of a resource or capability must be considered in relation to a firm’s competitive situation, not solely in relation to the accepted key desirable characteristics, in this case imperfect imitability. Managers are thus advised to pay keen attention to the fit between their resources or capabilities and the competitive environment. For example, a contingent relationship
between imitability and market conditions may be established: when imitability facilitates the establishment of market standards, then it is a desirable key characteristic.

Another condition that favors imitation is when imitation improves the competitive environment (and the rules of the game) in which the firm competes. The opening example with American Airlines illustrates this point. A similar case can be made with respect to General Motors, which issued the GM credit card in 1992. In this program, GM cardholders could earn a credit equal to five percent of their charge volume that could be used toward the purchase of a GM car or truck. With a credit ceiling of $500 per year and $3,500 over seven years, the program provided much incentive for potential GM customers to identify with GM early on to build credits. When Ford Motor Company and Volkswagen quickly copied the program, all of these firms' need for price-based competition became lower. Although the GM card had a high level of imitability, its adoption allowed GM and Ford to focus more on brand loyalty and less on a price-war mentality. The result appears to be positive for GM, which as a market leader likely benefits most from high brand loyalty.

Selection Trade-off

The third external trade-off stems from the evolutionary theory of the firm. Evolutionary theory in economics applies biological analogies to explain evolution of firms through market selection. The idea of market selection means that a competitive market will select the surviving firms based on their level of fitness to the environment. While firms select markets to enter and compete in, they are also selected by the markets to succeed or to fail. In choosing their markets, firms must consider how participating in a particular industry or market segment will affect the firm's future competitiveness. This is because, first, the firm's heritage forms a basis for what new capabilities are even possible. Second, there exist a number of forces that may constrain a firm's choices of customers and sub-markets.

For example, because AT&T was at one time obtaining such enormous cash flows from its telephone leases, it had little "incentive to aggressively compete in the new low cost ($25) telephone business." In contrast, firms without AT&T's cannibalization fear had every incentive to innovate vigorously. In other words, for a firm to be able to develop certain future resources or capabilities that are valuable, such as an innovative capability, it may have to be within a certain environment.

Indeed, the development of new resources and capabilities hinges upon the mutual selection of the firm and its environment. It is reported that otherwise successful companies sometimes find it almost impossible to succeed in markets where the criteria used by customers to choose one product over another change regularly, because the nature of these markets is so different from existing markets. As a result, instead of managing such technologies within the existing organizational structure, many such firms have created separate organizations that can be more appropriately configured to meet the needs of the new customers. Only then can the type of iterative learning and temporary failures necessary to succeed in such selection environments be accommodated without disrupting the firm's existing resources or capabilities. For example, many firms have created separate operating companies to pursue Internet-based business opportunities. These new organizations are seen as necessary to allow for the development of the faster-paced dot-com cultures apparently required to succeed in the business environment of the 21st century, with its unprecedented pace of change.

Accordingly, the selection trade-off logic argues that at least occasionally, a firm should choose a more competitive environment. By seeking an increased level of competition, a firm stays within the selection environment most relevant for future success. In fact, Michael Porter and others have long believed that competition may have positive effects for firms, such as by fostering innovation and helping them avoid complacency. Others have stressed the value of creating a crisis in the firm so that organizational renewal may take place. As with AT&T, lacking competitive pressures a firm may lack an incentive to innovate.
Thus, in an environment where innovative capability is critical, a firm might logically welcome competition. This, of course, is not in line with the key characteristic of maintaining exclusivity by erecting barriers to resource or capability competition.

Several conditions seem to favor more rather than less resource or capability competition. First, as the AT&T case shows, when there are emerging, new technologies in an industry, firms may prefer joining the competition to stay current with developments. Second and relatedly, when there is a battle for an industry-wide technology standard, more competition may actually help incumbent firms. For example, research has found that, in order for incumbent firms to win battles for industry standards, they frequently encourage new entries (or more competition) into their industries. The rationale is to expand the base of firms that use their technology as quickly as possible. Third, stiffer competition may be desirable if a higher demand would generate more supply opportunities in the future. For example, the game company Nintendo benefits from competition with Sony and Sega as they collectively provide the critical mass necessary to attract needed programming support from software companies. Thus, in each of these situations, contrary to the resource-based view, companies may seek greater rather than less competition.

Stiffer competition may be desirable if a higher demand would generate more supply opportunities in the future.

As with the other external trade-offs explored above, the issue for the selection trade-off is the level of analysis at which the value of a resource or capability is assessed. In this case, the analysis has been extended to the market level (i.e., the interaction of firms and the market). Managers are again encouraged to look beyond current resources and capabilities and to be concerned with tying resource or capability development to a broader competitive context.

Assessing and Managing Resources and Capabilities

Without doubt, the resource-based view offers important insights about the internal basis of competitive advantage. Key characteristics are an important approach toward understanding the value of resources or capabilities. Despite the usefulness of this approach, however, there are exceptions that are too important to ignore, from both theoretical and managerial points of view. We have presented several exceptions in the form of trade-offs in managing resources or capabilities. The two internal trade-offs suggest that if application of the resource-based view is too narrow, a firm might focus on the value of individual resources or capabilities in one area at a time, without much consideration of their various interactions with other resources or capabilities. Thus, managers should expand the levels of analysis through which they make such value assessments.

The three external trade-offs directly examine whether the accepted characteristics are always desirable. Normative advice to firms from the resource-based view recommends focusing on resources or capabilities with a few desirable characteristics (e.g., imperfect imitability and immobility). We provide a warning against following this advice too narrowly. As we illustrated, resources and capabilities with certain desirable characteristics may prove to cause the firm more harm than good. The value of resources or capabilities to a firm may depend as much upon the accepted characteristics as upon its ability to manage the complicated processes described. As such, a more complete understanding of how to manage both resources and capabilities is called for.

To this end, managers may apply the following five considerations in assessing and managing resources or capabilities (also see Table 1).

1. Should one simultaneously consider multiple resources or capabilities instead of examining one resource or capability at a time?
   - The answer is yes when one particular resource or capability (such as a functional expertise) becomes a standout in a firm, since it tends to negatively affect the perceived value of other resources or capabilities.
   - The answer is yes when complementary resources or capabilities need to be integrated with core resources or capabilities.

2. Have current resources or capabilities become a barrier against acquiring and developing new knowledge and know-how?
   - Outward learning should be emphasized if the environment is volatile or the firm lacks internal knowledge; inward learning (transfer of internal knowledge) should be emphasized if the environment is stable or the firm is knowledge-rich.
   - Knowledge exploration is preferred for firms in young and evolving industries and/or possessing no dominant technologies; knowledge
exploitation is preferred for firms in mature industries and/or possessing dominant technologies.

3. What is the extent to which the development of certain valuable resources or capabilities depends on taking part in business networks and other interfirm relationships?

- Imperfect resource mobility is a desirable key characteristic when the development of resources or capabilities is mostly internal in a firm.
- Imperfect resource mobility is an undesirable key characteristic when (1) competitive advantage in the industry is largely based on interfirm links, (2) the industry is in its declining stage, and (3) the firm develops a high level of dependence on other firms.

4. Does the imitation of one's resources or capabilities tilt the competition to one's advantage?

- Imperfect resource imitability is desirable if exclusivity helps maintain one's advantageous position in an industry.
- Imperfect resource imitability is undesirable when (1) imitation facilitates the establishment of market standards, and (2) imitation improves the rules of competition.

5. Has the firm selected the right competitive environment to foster the development of new resources or capabilities?

- Limited resource competition is desirable if it helps the firm to obtain critical resources or capabilities.
- Limited resource competition is undesirable if it means moving away from (1) emerging markets and technologies, (2) battles for industry-wide technology standards, and (3) markets where more competition leads to improved supply-demand situations.

Endnotes


6 When different temporal periods are taken into account and different levels of analysis are incorporated within our arguments, our conclusions seem much less criticism of the RBV than an explication of the risks of too narrowly construing its application. As one RBV researcher notes, “One of the most challenging jobs of managing resource configurations... is managing the multiple and often conflicting logics that they embody.” In Fiol, C. M. 1991. Managing culture as a competitive resource: An identity-based view of sustainable competitive advantage. Journal of Management, 17(1): 191-211. We concur and therefore seek to call managers’ attention to the need to examine their resources/capabilities within the broader context that managing trade-offs requires.

7 Leonard-Barton, op. cit.

8 Ibid., 118

9 Ibid., 112.

10 Teece, Pisano, & Shuen, op. cit.


12 Ibid., 109.


14 Cohen & Levinthal, op. cit., 128.


17 Kogut & Zander, op. cit.

18 Yeung, et al., op. cit., 35.


28 Ghoshal & Bartlett, op. cit., 612.
36 Teece, Pisano, & Shuen, op. cit.

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