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Invited Editorial

The Use of Resources in Resource Acquisition

Birger Wernerfelt
Massachusetts Institute of Technology

The author considers the processes through which a firm can acquire resources and argues that its current stock of resources create asymmetries in competition for new resources. Two simple models illustrate how this can work through linkages on the demand and/or cost side. The normative implication is that firms should expand their resource portfolios by building on their existing resources; different firms will then acquire different new resources, and small initial heterogeneities will amplify over time.

Keywords: *resource-based view; dynamics*

The processes through which firms acquire resources have become a somewhat vexing aspect of the resource-based view (RBV). From the early days of the RBV, scholars have understood that in most reasonable models, if several identical firms compete for a resource, ex ante expected returns will be zero (Barney, 1986). Since the idea is that resources support supernormal returns, something has to give. Many scholars have worked on the problem, and the debate is ongoing (Ahuja & Katila, 2004). I propose a simple resolution—namely, that a firm's cost of acquiring a new resource and/or the value that it can create with this resource depends on the resources already possessed. This leads to an asymmetry in the resource market and allows supernormal profits to be had.[1]

I can illustrate both arguments in the context of a winner-take-all patent race. Suppose that the patent goes to the firm expending the most effective effort, which I posit as a function of a firm's existing resources and the amount of money it invests. A firm that can produce

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Corresponding author: Birger Wernerfelt, MIT Sloan School of Management, Cambridge, MA 02142

E-mail: bwerner@mit.edu

more effective effort per dollar than that of its competitors should be more likely to win the patent and do so at a price below value. Similarly, a firm that can extract more value from the patent will be willing to pay more and should be more likely to win and do so at a price below reservation value.

The formal model can be seen as a simple example of chaos and nonlinear dynamics—a case in which small differences in initial conditions cause otherwise identical systems to evolve to very different end states. The closest analogue is that by Selove (2009), who looked at a model in which two firms can invest in either of two resources enabling them to serve either of two market segments. Assuming that the value of resources exhibit increasing returns to scale, he showed that a small initial lag in one segment will cause a firm to focus on the other.

The literature contains many alternative classes of explanations, including appeals to random shocks (Ahuja & Katila, 2004; Barney, 1986; Lippman & Rumelt, 1982), bounded rationality, and claims that some firms are simply better at the acquisition process per se (Teece, Pisano, & Shuen, 1997). I do not address the relative importances of these factors and those introduced here.

Rather, I look at cost linkages, starting with the formal argument and going on to offer several examples. I do the same for value linkages[2] and conclude with a discussion.

Current Resources Reducing the Cost of New Ones

Theory

To isolate the forces driving my argument, I make several simplifying assumptions. These should not be interpreted as boundaries of the qualitative insights but as ways to focus on the forces that are first order. I discuss each assumption in turn.

First, most pairs of resources are unrelated in the sense that having one will have no effect on the costs of acquiring the other. Furthermore, some resources increase the costs of getting others. For example, a firm with a large customer base will find it hard to cultivate an exclusive image. These cases are not important. Just as the static version of the RBV tells us not to enter markets in which we "bring nothing to the party," it is clear that the firms should not try to acquire resources for which they have no competitive advantage (or even a competitive disadvantage). So I concentrate on ordered pairs of resources for which the first, existing resource reduces the cost of getting the second, target resource. (I talk about ordered pairs because the relation need not be a symmetric: A high-end image makes it easier to acquire a large customer base but not vice versa.)

Second, a few resources can reasonably be described by 0/1 variables: One is either endorsed by an independent third party, or one is not. For most resources, it is a question of degree; how much, how many, and so on. Aiming to keep the argument as simple as possible, I look at a target resource that firms either do or do not have. In contrast, the existing resource is one that firms can have more or less of.

Third, one need not have a monopoly on a resource to make supernormal profits—small numbers oligopolies will make rents as well. Furthermore, many resources can eventually be

imitated such that a monopolist can turn into an oligopolist. A few resources are such that only one firm can have them, with patents being the clear example. I focus on the cleaner case of a target resource that can be held by one firm only. In contrast, all firms have some of the existing resource, although generally not equal amounts.

It will be clear that my qualitative conclusions do not depend on the simplifying assumptions cited above.[3]

Because results are more sensitive to assumptions about the form of competition, I model the resource market in a general reduced form. I look at a game in which two firms compete to acquire a target resource. Competition is symmetric in the sense that all relevant differences between the firms are summarized by their effective investments. Specifically, if the firms have r_1 and r_2 of the existing resource and make actual investments a_1 and a_2, then their effective investments are as follows:

$$e_i = a_i r_i,\ i = 1, 2.. \tag{1}$$

Given this, if effective investments are e_1 and e_2, then firm i gets the target resource with probability $p(e_i, e_{-i})$, where $p(\ )$ is increasing and concave in e_i and decreasing and convex in e_{-i}. Realizations are dependent such that, at most, one of the firms wins and $p(e_1, e_2) + p(e_2, e_1) \leq 1$. To ensure uniqueness, I make the natural assumption that $|\partial^2 p/\partial e_i^2| > |\partial^2 p/\partial e_i \partial e_j|$, which means that a firm's effective investments have a larger effect on its marginal returns than do those of its opponent. The value of winning is denoted by v, which I assume is the same for both firms.

If both firms understand the situation, then their actual investments will be

$$a_i^* = \text{argmax}\ vp(a_i r_i, a_{-i}^* r_{-i}) - a_i \text{ or} \tag{2}$$

$$v r_i \partial p(a_i^* r_i, a_{-i}^* r_{-i})/\partial e_i = 1. \tag{3}$$

Standard tools in economics (the envelope theorem and the implicit function theorem) allow us to conclude that firms with larger r_i have larger expected profits and make larger effective investments,[4] giving them better chances of winning the target resource.

Because the above argument depends on possibly unfamiliar tools, I take a brief look at the example in which $p(e_i, e_{-i}) = e_i/(e_i + e_{-i})$. Based on the assumption that r_1 and r_2 differ by a factor of less than 3,[5] Equation 2 gives $e_i^*/e_{-i}^* = r_i/r_{-i}$.

Examples

The learning-by-doing examples in my earlier work (Wernerfelt, 1984) are of this type. Suppose that it takes two resources—say, customer trust and low manufacturing cost—to compete in the market for a new product. If manufacturing cost position is the new resource, more trusted firms can sell more and will thus be able to develop manufacturing skills by moving down the learning curve. If customer trust is the new resource, the idea is that firms with lower cost can develop trust cheaper. In either case, firms can use an existing advantage to earn another.

A big class of examples is that in which the new resource shares some attributes with the existing resource. Consider a fast-food chain that has a good reputation as a place to have lunch. Such a firm may be able to accelerate the production of a dinner reputation by taking advantage of many of the attributes that built its lunch reputation.

The development of the new resource will often affect the existing resource. The examples described in the above paragraphs suggest that the feedback effect is positive, but this is not always the case. Suppose, for example, that a firm wants to develop a large user base for a product. This can typically be facilitated by applying a high-end brand name, although the brand might lose its cache in the process.

Current Resources Enhancing the Value of New Ones

Theory

A conceptually different but formally similar case is that in which the target resource is worth more to firms with more of the existing resource. So I concentrate on ordered pairs of resources for which the first, existing resource increases the value of the second, target resource. If I describe this relationship by the increasing function $v(r_i)$, the analogue of Equation 2 is

$$a_i^* = \text{argmax } v(r_i)p(a_i, a_{-i}^*) - a_i. \quad (4)$$

Using the same analysis as in the previous section, I find that firms with larger r_i have larger expected profits and make larger investments, giving them better chances of winning the target resource. Specifically, if $p(a_i, a_{-i}) = a_i/(a_i + a_{-i})$, we get $a_i^*/a_{-i}^* = v_i/v_{-i}$.

Examples

This class consists of all cases in which the two resources are complements; thus, it includes the manufacturing cost–consumer trust example mentioned previously. The lower one's cost, the more one gains from trust—and vice versa. Another interesting case is that of two-sided networks. For example, a broker with more sellers will put a higher value on more buyers and will thus be willing to invest more in customer acquisition.

Because it takes several resources to make and sell many of the complex products offered in today's markets, complementarity between resources is widespread.[6] Although this tends to favor already-resource-rich firms, it exposes them to more risk. For example, the value of all complementary resources is reduced if a brand name is destroyed by an unfortunate incident.

Discussion

I have identified conditions under which firms' existing resources influence their investments in new resources. The analysis contributes to the RBV by proposing an alternative mechanism by which firms add to their stock of resources. The mechanism is close to the spirit of mainstream economics. It does not appeal to luck, bounded rationality, higher-order

resources, and the like but simply thinks of the resource acquisition process as an asymmetric investment game.

An important question is whether the forces identified are descriptively important. As a first pass, one could look at case histories of individual firms and interpret the development of their resources in light of the argument. To perform a more systematic test, one will have to look at a class of relatively homogeneous situations, such as retailers in different towns. However, given the embryonic state of empirical work on the RBV, this is likely to be difficult.

We are on firmer ground on the parallel question about normative applicability. The model makes clear and simple suggestions about the direction of investment whenever there are cost and/or revenue linkages between resources. The advice in the resource market is to build on one's strengths—just as the RBV advises one to do in the product market.

Notes

1. The idea that resources may create asymmetries in markets for products and resources is not new: I illustrated this by several examples (Wernerfelt, 1984) but neither developed nor stressed the point. It has received virtually no attention since then.

2. I consider cost and value linkages independently for reasons of exposition only. In many cases, both forces are in play; it is even possible that one is negative while the other is positive. Readers will have no problem netting out the combined effect.

3. We can drop the second and third assumptions and assume that several firms can have larger or smaller amounts of the target resource by reinterpreting $p(\ )$ as the expected amount of the resource going to firm i.

4. Formally, $d(e_i - e_{-i})/dr_i > 0$.

5. If the r's are very different, $|\partial^2 p/\partial e_i^2| < |\partial^2 p/\partial e_i \partial e_j|$.

6. Substitutability is, of course, also common. However, because firms are at a disadvantage when competing for such resources, they are irrelevant to the resource acquisition process.

References

Ahuja, G., & Katila, R. 2004. Where do resources come from? The role of idiosyncratic situations. *Strategic Management Journal*, 25: 887-907.

Barney, J. B. 1986. Strategic factor markets: Expectations, luck, and business strategy. *Management Science*, 32: 1231-1241.

Lippman, S. A., & Rumelt, R. P. 1982. Uncertain imitability: An analysis of interfirm differences in efficiency under competition. *Bell Journal of Economics*, 13: 418-438.

Selove, M. 2009. *How do firms become different? A dynamic model*. Cambridge, MA: MIT Sloan School of Management.

Teece, D. J., Pisano, G., & Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*, 18: 509-533.

Wernerfelt, B. 1984. A resource based view of the firm. *Strategic Management Journal*, 5: 171-180.