

RICHARD P. RUMELT  
*University of California, Los Angeles*

## 2. Theory, Strategy, and Entrepreneurship

### INTRODUCTION

Where do new businesses come from? The textbooks say that the entrepreneur, like the stork, brings them. But new businesses do not occur with equal likelihood in all societies or all industries. Also, existing firms in advanced societies have finely developed methods for managing diversified portfolios of businesses, so it is unclear why so many risky *new* businesses are formed. Why don't existing firms, with their experience, established reputations, and in-place resources, have compelling advantages in new business formation? This chapter examines the locus of entrepreneurship, both in terms of product-market conditions and organizational context.

Schumpeter (1950) described the entrepreneur as combining resources in new ways. In this vein I define *entrepreneurship* as the creation of new businesses, and by *new* I mean businesses that do not exactly duplicate existing businesses but have some element of novelty. For example, the entrepreneur may be opening a convenience store in a hitherto untried location, may have developed a new product or a new production technology, may have a new way of promoting a product, may have identified a novel market segment, or may be betting on a novel method of distribution. I do not automatically equate entrepreneurship with the creation of new organizations or ventures, although I will be concerned with the conditions impeding internal entrepreneurship.

If entrepreneurial activity is seen as motivated by the chance for gain, its frequency, locus, and organizational context should be determined by the availability of entrepreneurial insights, by the potential returns to entrepreneurship, and by the entrepreneur's ability to attract the requisite resources. A good working theory of entrepreneurship would begin with these principles and develop connections to observable and predictable phenomena. It would be useful, for example, to be able to characterize the systematic differences in the potential for entrepreneurial gain across product groups,

industries, and societies. In addition, it would be good to have more precise understanding of the types of structural and contractual arrangements that facilitate or impede entrepreneurial activity.

This chapter explores the terrain on which theories of entrepreneurial activity might be built. In the next section I examine the product-market context of entrepreneurial activity, focusing on the availability of *entrepreneurial rent* and the conditions enhancing its availability and inhibiting its appropriation. The following section explores the organizational context of entrepreneurship, analyzing some of the factors favoring and inhibiting internal entrepreneurship. These ideas are then drawn together in a simple framework for predicting entrepreneurial activity.

## THE PRODUCT-MARKET CONTEXT OF ENTREPRENEURIAL ACTIVITY

Since John Stuart Mill introduced the idea of the “stationary state,” economists have tended to see the real world as a deviation from some ideal stable condition. Indeed, the central result of neoclassical micro-economics is that individual profit (or utility) maximization in a perfectly informed frictionless economy eliminates any resource waste and drives profits, though maximized, everywhere to zero. This model, however, has nothing to say about the source of new businesses, new products, innovations, or new ways of doing things. As Schumpeter emphasized, the competitive ideal not only fails to describe entrepreneurship, it fails to provide a motive for the search for new methods. If competition is swift and frictionless, entrepreneurs can expect only zero profits if projects succeed and worse if they fail!

### *The Industrial Economics Tradition*

Because of the power and acceptance of the competitive model, the economic analysis of innovation and entrepreneurship has been only weakly concerned with the description of real events; instead, its focus has been the critique of the competitive model’s descriptive or normative validity. Thus Schumpeter, the originator of the economics of innovation and entrepreneurship, argued that innovation was incompatible with the competitive ideal, since the risk and cost of innovation would not be voluntarily borne without the possibility of compensating gains. These gains, he stressed, appeared in the form of the high profits earned by monopolists and tight oligopolies. Eliminate monopoly power and you throttle innovation.

In the same spirit, Galbraith took the position that innovation was the province of large firms. He argued (1952: 91) that “most of the cheap and simple innovations have, to put it bluntly, already been made,” so that only large firms earning monopoly profits could afford to undertake the costly search for new products and techniques.

A respectable literature has grown around the discussion and empirical testing of these ideas. Theoretical work has been pressed by Arrow (1962), Demsetz (1969), Nelson and Winter (1982), Kamien and Schwartz (1982), and others. Important empirical studies have been performed by Mansfield (1968, 1971), Scherer (1965, 1967), Comanor (1967), Phillips (1971), and Williamson (1965).<sup>1</sup> The approach to the issue that has evolved, especially in empirical work, has been to equate market structure (read *concentration*) or firm size with monopoly power and to examine the connection between monopoly power and innovation, the latter usually measured by R&D spending or patenting.

This work is interesting and useful, but its very volume should make it obvious that no clear-cut conclusions have emerged. The best that can be said in general is that innovation does not appear to be strictly the province of the large firm or of oligopolists. The problems with this literature, however, extend beyond its lack of plain answers. In the quest to clarify and test Schumpeter's and Galbraith's assertions, researchers have come to accept a number of questionable propositions. In particular, they have tended to (1) identify all rents as monopoly rents, (2) to equate firm size (or concentration) and market power, (3) to restrict the definition of innovation to technological invention, (4) to assume that R&D spending is the source of invention, and (5) to identify patents as the measure of invention.

That entrepreneurial innovation need not be technical should go without saying. The new form of package delivery service created by Federal Express was innovation, as was the CMA Account developed by Merrill Lynch and the development of pay cable TV channels. Drucker (1985: 31) reminds us that

*Innovation . . . does not have to be technical, does not indeed have to be a “thing” altogether. Few technical innovations can compete in terms of impact with such social innovations as the newspaper or insurance. Installment buying literally transforms economies. Wherever introduced, it changes the economy from supply-driven to demand-driven, regardless almost of the productive level of the economy.*

The equating of the returns to entrepreneurship with monopoly power, and the subsidiary association between size, concentration, and monopoly, is a more fundamental problem with much research on innovation.

First let us examine the term itself. What, exactly, is a *monopoly profit*? If all profits in excess of fully competitive returns are called *monopoly profit*, the term has no special meaning. It should be obvious that investments in risky entrepreneurial projects can be justified only if the losses on failure are balanced by above-normal returns associated with success. If, for example, totally specific capital is committed to a venture with a one-in-two chance of complete failure (loss of the investment), then the profit rate on success must be twice the normal rate (assuming annuities) to justify investment. Are such profits, if achieved, monopoly profits? In the static theory monopoly profits derive from the artificial restriction of competitors' outputs, are a distortion, and imply waste. That is, once the innovation has been accomplished, the excess profits could be appropriated without curtailing the supply of the new product or service. However, such policies would diminish the supply of innovation in the first place. So if we desire a theory wherein innovation is endogenous, it is incorrect to use the term *monopoly* with regard to entrepreneurial returns. The issue is not one of monopoly but the quite traditional problem of the proper allocation of property rights.

The equating of monopoly profit with size and concentration is also a problem in this stream of research. Put directly, the market power framework posits that firms earn surplus profits by colluding behind strategically erected entry barriers. (The entry barriers by themselves are not sufficient for without diminished competition those behind the barriers would erode each others' profits.) Yet innovation and entrepreneurship are really about novelty and differentiation; models of commodity-producing collectives may not be the best approach to their study. An alternative viewpoint, one that emphasizes the uniqueness of firms and identifies profits with resource bundles rather than with collectives, is offered by the strategy field.

### *The Competitive Strategy Tradition*

The systematic study of business strategy, as practiced in schools of business and management, had its beginnings in case studies of several firms within an industry. These investigations revealed that firms in the same industry often differed markedly from one another. Although operating in the same basic competitive environment, the managements of different firms were seen to have adopted different policies regarding product quality, line breadth, distribution channels, financial leverage, and employee relationships, and they were observed to use different organizational structures. In addition, there were usually substantial and sustained differences in performance among the firms within an industry. These differences among close competitors were identified as differences in *strategy*, and the field of study

has concentrated on understanding strategy in both descriptive and normative terms.

The first basic theory that arose from these data was that of *fit*. According to this framework, a high-performing firm had a product-market strategy that was consonant with the opportunities and constraints imposed by its competitive environment and additionally had an organizational structure suited to its strategy. Good management consisted of the alert tracking of competitive conditions and the implementation of concomitant adjustments in strategy and structure.

The trouble with the fit theory is that it failed to adequately explain why all competitors were not fit. If fit leads to success, and firms are similarly motivated toward success, why are there unfit strategies? To adequately answer this question, strategy researchers have turned to concepts that emphasize the special histories and resource bundles of each firm. Caves and Porter (1977) see firms as having initially different “traits” and strategically moving to build competitive positions around these differences. Lippman and Rumelt (1982) model differences among firms as stochastically generated and as difficult to imitate because of causal ambiguity regarding their sources. Wernerfelt (1984) emphasizes the importance of unique resources (resource barriers) to business strategy. Hitt and Ireland (1985) explored the empirical association between firm distinctive competence and performance.

Empirical work also reveals that the dispersion of long-term profit rates within industries is very much larger than the dispersion of industry profit rates across industries. For example, applying a variance components analysis to rates of return on capital displayed by 1,292 U.S. corporations over a twenty-year period I obtained the results shown in Table 1.1.<sup>2</sup> The data show that the variance in long-run profitability *within* industries is three to five times larger than the variance *across* industries. Clearly, the important sources of excess (or subnormal) profitability in this data set were firm specific rather than the results of industry membership. Once the source of high profits is located in the firm’s resource bundle rather than in its membership in a collective, the appropriate profit concept is that of *rent*.

TABLE 2-1 Results of Variance Components Analysis of Return on Capital, 1,292 U.S. Corporations

	Industry Definition	
	3-digit	4-digit
Variance due to industry effects	3.9	4.7
Variance due to firm effects within industries	19.2	17.6

### *The Concept of Entrepreneurial Rent*

The idea of economic rent was developed in about 1820 by David Ricardo, as part of his argument for the abolition of England's Corn Laws. Ricardo noted that land varied in fertility, so that when demand was sufficient to make it economic to grow corn on less fertile land, high profits were earned by anyone owning very fertile land. These extra profits were called rents because they ultimately accrued to the owners of the land. Some commentators argued (as in today's rent-control battles) that corn was expensive because of the large rents paid to land owners. The heart of Ricardo's (1971) argument was that the price of corn was determined by the supply of fertile land and not the level of rents:

*Corn is not high because a rent is paid, but a rent is paid because corn is high and it has been justly observed that no reduction would take place in the price of corn, although the landlord should forego the whole of their rent.*

*Ricardian Rents.* The differences in payments received by factors of the same "type" are Ricardian rents. The factors are, of course, not exactly of the same type else no rents would be paid. The key to the existence of Ricardian rents is the presence of a fixed scarce factor; the scarcity is such that the extra profit (rent) commanded by this factor is insufficient to attract new resources into use. A standard way of presenting this notion is the *increasing cost* industry. In this type of industry, it is possible (at some given price) to rank the producers from least cost to highest cost, with the marginal cost of the least efficient producer equal to the market price. The marginal firm earns zero profit while the more efficient firms earn rents. The surplus profits in this case (assuming atomism) are not socially objectionable because the profitable firms' outputs are constrained by fixed factors rather than restricted as a stratagem to raise the market price.

The rent concept due to Pareto (and Marshall) is the difference between a resource's payments in its best use and the payments it would receive in its next best use. Thus, the *Pareto rent* is the payment received above and beyond that amount required to call it into use. When resources in use all have the same value in their best alternative use, the Ricardian and Pareto concepts correspond.

Rents, unlike *profits*, persist in static equilibrium. The usual micro-economic treatment of rents is to ascribe them fully to the scarce factor and then to treat that factor as separately owned, so that the firm's costs include the rent. If the scarce factor is then traded, the rents are capitalized and no one (except some original owner) shows any profit. This formulation is traditional

and saves the zero-profit condition of neoclassical theory. It is inadequate, however, in the face of newer insights. In particular, we now understand that resources that can just as well be rented as owned are of a very special type: They are nonspecific and their use can be obtained via market mechanisms with minimal transaction costs. If, however, the fixed rent-yielding factor is specialized to the needs of the firm, or if its use otherwise involves significant transaction costs, the rent on that factor is not logically or operationally separable from the profits of the firm.

*Entrepreneurial Rents.* The classical concept of rent applies in a static world and compares the productivity of different resources or of a resource in different uses. Entrepreneurship, by contrast, is the discovery of new combinations of resources and uncertainty is the central issue. I therefore define *entrepreneurial rent* as the difference between a venture's *ex post* value<sup>3</sup> (or payment stream) and the *ex ante* cost (or value) of the resources combined to form the venture. If we posit expectational equilibrium (*ex ante* cost equals expected *ex post* value), then expected entrepreneurial rents are zero. The basic thrust of this definition is to identify those elements of profit that are the result of *ex ante* uncertainty.

Although rents are not competed away in normal competition, they can be appropriated because they are payments for a factor above and beyond that required to attract it to its present use.<sup>4</sup> Thus, if a restaurant is yielding \$500,000 per year in profit but would have recovered all the costs of planning, capital, and set-up if it earned profits of only \$300,000, the difference, \$200,000, is rent. The rent is appropriable in that one could reduce the restaurant's profits by \$200,000 (keeping prices the same) without seeing it reduce its level of operations. The *ex post* appropriability of entrepreneurial rent means that owners of rent-yielding assets must anticipate the erosion of rents as interested individuals, groups, and governments opportunistically seek to redefine their shares. In addition, entrepreneurial investments are necessarily specialized to a specific (novel) use, or else there would be no risk of loss. Therefore, the entrepreneur also faces the possibility of appropriation of the additional rents accruing to the specialized portion of the original investment.

Interestingly, the rent-earning firm looks much like the classical successful enterprise of the strategy literature:

- It exhibits a high profit rate and substantial discretion in the allocation of its profit stream.
- At its core rest unique specialized resources that cannot be freely expanded or imitated.
- Its management perceives it as vulnerable to the political bargaining and legal maneuverings of unions, governments, consumer groups, and so forth.

### *Uncertainty and Rent*

Given expectational equilibrium, it is uncertainty that produces the possibility of entrepreneurial rents. Absent uncertainty, we would expect the inputs used in the entrepreneurial venture to reflect their value in use or we would expect *ex ante* crowding or rapid imitation to reduce profits to normal levels. This uncertainty is normally viewed as *discovery* or invention. The two basic kinds of entrepreneurial discovery concern the value of resource combinations and the pattern of demand.

The entrepreneurial discovery of resource value includes mineral exploration, real estate development, technological invention, and the creation of new means of producing and delivering products and services. The discovery of demand patterns includes satisfying new consumer needs and wants and identifying new market segments worthy of attention and focus. Where entrepreneurial activities completely resolve the original uncertainty, the results achieved, absent secrecy, could be perfectly imitated. In this case it is best to provide the innovator with property rights that encourage the dissemination of knowledge. If however, the venture leaves considerable residual uncertainty, as is often the case in commercial rather than technical innovation, the entrepreneur faces a moral hazard problem in obtaining payments from others for what has been learned.

In the limiting case of Lippman and Rumelt's (1982) "uncertain imitability," the causal ambiguity is so great that successful entrepreneurs are no more likely to repeat their success than *de novo* entrants. Here information dissemination is valueless and consequently cannot be a source of entrepreneurial return.

### *Rent Size and Durability*

What permits a risky entrepreneurial venture to earn rents if it succeeds? The business must be a sufficient innovation to be an efficient replacement for substitutes, it must resist the appropriation of rents, and it must have some protection against imitative competition.

The first condition is simply that the innovation be socially efficient. That is, it must provide a sufficient increment in value over pre-existing substitute products or technologies to justify the costs of innovation. Where such gains are not possible, entrepreneurial innovation cannot begin to pay for itself.

The primary appropriation challenges entrepreneurs face are those due to powerful buyers or suppliers (including employee groups), the owners



of cospecialized assets, and governments. If the venture uses inputs from a monopolist, or sells its output to a monopolist, it faces a complex bilateral bargaining situation. Even if contracts have been hammered out before the venture is complete, the powerful buyers or suppliers have incentives to opportunistically recontract, raising the costs of the venture or reducing its returns. A special type of supplier problem occurs when the entrepreneur needs the services of a cospecialized asset. For example, an innovator who develops a new household cleanser would face the prospect of choosing between building a new sales and distribution system or bargaining with a giant household products firm to obtain distribution services. Teece (forthcoming) provides a useful discussion of the contracting options open to such an entrepreneur.

*Isolating Mechanisms.* Given an innovation expected to be socially efficient, and absent appropriation challenges, entrepreneurship will not be justified unless there are impediments to the immediate *ex post* imitative dissipation of entrepreneurial rents. I call such impediments *isolating mechanisms* (Rumelt 1984) in rough analogy to the ecologist's use of the term to describe barriers to species mobility.

Among the most important isolating mechanisms are property rights. In the early days of the oil industry, for example, the Rule of Capture defined oil as a migratory good (like fish or wild game) and assigned possession only to those who extracted it from the ground. This assignment of property rights, together with the fact of multiple leases on each reservoir, led to very rapid exploitation of new oil fields. Overpumping depressed market prices, which, in turn, reduced incentives to search for oil. A better assignment of property rights would have prevented wasteful overdrilling in known reservoirs and underexploration for new ones. Similarly, fewer resources will be devoted to the quest for an invention that is easily imitated than for one of equivalent efficiency but that can qualify for effective patent protection.

Although the law provides the entrepreneur with property rights over discoveries of minerals, patentable inventions, written material, and trademarks, no such protection exists for the vast bulk of business innovation. New packaging concepts, methods of distribution, manufacturing methods and planning techniques, consumer research methods and information, and most new product ideas entail no assignment of property rights. Were imitative competition in these areas immediate and perfectly frictionless, none of these innovations would be sought. Fortunately, there are numerous lags, information asymmetries, and frictions that function as quasi-rights, thereby sustaining entrepreneurial rents.

The isolating mechanisms that protect entrepreneurial rents from imitative competition normally appear as *first-mover* advantages. That is, they

are asymmetries, usually derived from informational inequalities or the costs of creating and enforcing complex multiparty contingent contracts, that, other things equal, make it increasingly costly for followers to duplicate an innovator's position. There is no unambiguous mutually exclusive list of these phenomena, but the most important appear to be as follows:

*Information impactedness:* When innovators can prevent potential competitors from obtaining the knowledge gained from successful operation of a venture, they can inhibit effective imitation. Secrecy is obviously more difficult where the knowledge is scientific rather than tacit, where more people are privy to the information, and where employee mobility is high. In the limit, where uncertain imitability holds, competitors cannot extract the innovator's secrets because even the innovator does not know the causes of success.

*Response lags:* Competitors may be slow in responding to an innovator, providing high entrepreneurial rents in the interim. Such lags may be due to the time it takes for competitors to recognize, evaluate, and formulate a response to the innovation, or may simply be due to waiting times for specialized equipment. Lags also occur because competitors are unwilling to cannibalize existing high-rent businesses or because of legal constraints. For example, on deregulation, AT&T was prevented by law from meeting MCI's prices on long-distance voice communications services for a period of seven years.

*Economies of scale:* If the minimum efficient scale of a business is comparable to the size of the market, and if the assets required are specialized to this use, a traditional *entry barrier* occurs. Additional entry is deterred by the prospective entrants' recognition that adding another efficiently sized competitor to the business would depress price below full cost.

*Producer learning:* In certain cases a producer becomes more efficient as experience is gained, measured by the passage of time or by cumulative output. If the knowledge base underlying this efficiency gain is tacit, so that it resists transfer to other producers, competitors with less experience are at a comparative disadvantage. Producer learning appears to be most important in operations where complex assembly operations are performed.

*Buyer switching costs:* If early buyers of a new product find it subsequently costly to switch to a competitor's offering, the first mover is at an advantage. Buyer switching costs are high when the product is durable and specialized, when there are substantial specialized co-investments that the buyer must make, where search or evaluation costs are high, or

where buyers invest substantial specialized human capital in learning how to use or consume the product. Even though a follower's product is technically superior to the innovator's, buyer switching costs may prevent its adoption. The problem is technically one of contracting costs: If the buyers could costlessly enter into a mutual contract to wait for the follower's better product, they could diminish the innovator's profits and better themselves.

*Reputation:* Many products cannot be accurately evaluated by buyers until after they have been purchased and used. As Klein and Leffler (1981) show, a producer's ability to sell high-quality versions of such *experience goods* depends on its *reputation*. To the extent that buyers' beliefs about reputation depend on the length of time the producer has operated reputably, first movers can obtain reputational advantages. Of course, other things may not be equal, and the innovator may face imitators who have substantial reputations built up over time in related businesses (for example, Apple versus IBM in personal computers).

*Communication good effects:* Certain products increase in value as the number of adopters or users increases. Examples are telephone network services, microcomputer software, and audio compact disk players. Connor and Rumelt (1986) term these *communication goods*. The effect arises because the product serves as a means of social coordination (standardization) or because a larger user base calls into being a larger number of complementary goods. When communication goods are also experience goods (such as microcomputer spreadsheet software), there is a market need for both standardization and reputation-bonding. The upshot is the *de facto* standard, where a particular brand or manufacturer's product becomes the means of coordination. These competitive positions are very powerful and offer the promise of large entrepreneurial rents.

*Buyer evaluation costs:* As buyers face increasing problems in evaluating competing products they seek ways of economizing on evaluation costs. The most common tactic is to free-ride on the presumed analyses of the well informed and to buy the market leader. Such behavior provides advantages to the market leader as long as the follower's product is not significantly better.

*Advertising and channel crowding:* Early entrants into a market sometimes face less crowded advertising message spaces and distribution channels. When the first compact personal low-cost plain paper copying machines appeared, for example, Canon's advertisements stood out sharply because no other manufacturer offered a comparable product. Several years later, as the fifth manufacturer attempts to enter the market, it is much more difficult to get the buyer's attention. The multiplicity of similar messages

diminishes the impact of all. This asymmetry allows the early entrant to build customer awareness less expensively than later entrants. A similar effect occurs with distribution channels. Distributors and retailers face fixed set-up costs associated with taking on new lines (billing systems, salesperson training, and so forth) and minimum fixed costs associated with handling a line of products (allocation of shelf space, spare parts supplies management, and so forth). Consequently, there is room in distribution channels for only a limited number of essentially similar product lines. Late entrants into a market must either chase niche segments or buy distribution by paying substantially larger dealer margins.

### *The Product-Market Locus of Innovation*

The amount of society's resources devoted to entrepreneurship will depend on *ex ante* estimates of entrepreneurial rents and the level of uncertainty. As the potential size of entrepreneurial rents increases, the prizes get larger and more entrepreneurial activity can be expected.

Given limited liability and the right to cease operations and break contracts through declarations of bankruptcy, it is very possible that entrepreneurial activity will increase with increases in uncertainty. That is, if the chances of very positive outcomes are increased, and the losses due to negative outcomes are limited, then more uncertainty can lead to a larger expected value of innovation.<sup>5</sup>

The idea that entrepreneurship increases with uncertainty probably explains the common perception that entrepreneurs are risk-takers. For example, in Grayson's (1960) classic study of oil and gas operators' drilling decisions, his assessed utility functions on wealth were convex, implying risk-seeking attitudes. But it is very possible that these operators had difficulty separating their attitudes toward risk *per se* from their perceptions about the values of various ventures, in equilibrium, ventures with higher uncertainty (holding the mean constant) about the amount of oil below ground are worth *more*. It is likely, therefore, that Grayson's data reveal the wildcatters' preference for increases in uncertainty over the size of the find rather than for financial risk.

The factors influencing the size and duration of entrepreneurial rents will also have a marked effect on innovative activity. Obviously, where appropriation is common, through either government action or opportunistic bargaining by powerful parties, entrepreneurship is reduced. In addition, it is clear that projects involving important cospecialized assets will have the largest expected yield to the owners of those assets, placing the probable locus of entrepreneurship within existing organizations in such cases.

Finally, it is useful to note that much of the initial uncertainty attached to a really novel entrepreneurial venture concerns the strength and quality of the isolating mechanisms that will be present. When RCA undertook its venture in videodiscs for home entertainment, there was uncertainty concerning consumer response. There was also great uncertainty as to the size of any first-mover advantages that might accrue and as to the ability of film companies to eventually appropriate the profits. The venture's failure resolved the consumer response question but left the issue of appropriability and isolating mechanisms open.

In another example, early entrepreneurs in the microcomputer software industry expected that publishers would be distributing a wide variety of titles to the public, envisioning thousands of competing titles. They were taken by surprise when early products (such as dBase II and WordStar) became huge bestsellers and proved difficult to displace even by superior products. As the *de facto* standard aspect of the microcomputer software industry became apparent (reputations plus communication effects), a large increase in entrepreneurial effort followed this increase in expected gross entrepreneurial rent. This industry exhibited large rents for the first movers, but their very staying power naturally leads to diminished entrepreneurial effort once it is perceived that the key niches have been filled.

In many industries, after the first wave of innovation, competition is aimed at reductions in the size of isolating mechanisms. Thus, if buyer learning is an important advantage for first movers, easier to learn products may be developed. If producer learning is crucial, more automated process-like methods will be tried by those seeking to undermine the leader's experience. If channel crowding is the source of advantage, followers will seek out new forms of distribution. These competitive moves, themselves innovative activity, all act to carry the industry from its early birth stages to maturity. As the industry matures, early entrants must try to understand whether the industry will become rent-free or whether it will contain protected niches for those who play correctly.

#### THE ORGANIZATIONAL CONTEXT OF ENTREPRENEURIAL ACTIVITY

Given the product-market conditions for entrepreneurship, which organizations will innovate and when will innovation be carried out within new ventures rather than in existing firms? I will first look at the total organizational incentives to innovate, treating the firm as a single actor, and then I examine the problems of entrepreneurship from the perspective of the individual member of the firm.

### *The Problem of Cannibalism*

It was a commonplace in Detroit during the 1950s that small cars were less profitable than larger cars and that the wise manufacturer did not cannibalize a profitable mid-sized auto business by promoting less expensive small cars. Similarly, it can be argued that Xerox's incentive to respond to low-price Japanese plain-paper copiers was dulled by the possible cannibalization of its profitable higher volume machines. Jacobson and Hillkirk (1986: 15) note that

*The low-volume market is a low-margin business. The high-volume market. . . has always been a high-margin business. Of course, Xerox is afraid that low-volume products—whether Japanese- or Xerox-made—will pull business away from the crucial high-volume, high-margin end of the business.*

Economists studying this issue have formulated the problem in terms of an incumbent monopolist deciding how hard to work on the development of a more efficient but lower-profit substitute.<sup>6</sup> The incumbent would just as soon never see the substitute appear, but others are also working on developing the substitute. Because the incumbent's gain from innovation is reduced by the destruction of the rent stream attached to the old product, the incumbent has less incentive to innovate and therefore spends less, at the margin, on innovative activity. The interesting thing about this insight is that the larger the original rent stream, the lower the incumbent's incentive to innovate.

Unlike the economist's model, the examples just cited identify the businessperson's concern with response to existing rather than potential competition. Were the incumbent's and rival's product perfect substitutes, there would be no reason for hesitancy; if the incumbent does not make and sell the new product, the rival will. But in many situations there are crucial asymmetries in customer response. In particular, customers may have established relationships with a vendor. They may have invested in learning about a vendor's product, they may depend on vendor-specific cospecialized services (such as service, brokers, dealerships), or they may depend on the vendor for tidings about new product events. When such customer relationships exist, it is reasonable to expect these customers to respond more positively to the vendor's introduction of a new substitute product than they would to a similar introduction by a competitor.

It is this differential response that produces the cannibalism problem. In Xerox's case, the company probably expected their traditional lease customers to respond more aggressively to a new line of low-cost Xerox

copiers, with the consequent returns of on-lease midprice machines, than they would to the Japanese vendors' products. AT&T presently faces a similar problem with respect to the millions of telephones it has leased to the public. Rented at rates corresponding to purchase prices of \$100 and more, this lease base provides the firm with enormous cash flow and dramatically curtails its incentive to aggressively compete in the new low-cost (\$25) telephone business.

The cannibalism effect implies that in many cases the rent-earning incumbent will not be the innovator. Alternatively, it can be seen that the most fruitful approach for an entrepreneur may well be a direct attack on a profitable incumbent—such a firm may be least willing respond to the attack.

### *Organizational Routine*

There is a vast literature on the issue of bureaucracy and the difficulty of obtaining change within large complex organizations. The issue can be framed in terms of bounded rationality, collective choice, or politics. Crozier (1964: 225) put it this way:

*People on top theoretically have a great deal of power and often much more power than they would have in other, more authoritarian societies. But these powers are not very useful, since people on top can act only in an impersonal way and can in no way interfere with the subordinate strata. They cannot, therefore, provide real leadership on a daily basis. If they want to introduce change, they must go through the long and difficult ordeal of a crisis. Thus, although they are all-powerful because they are at the apex of the whole centralized system, they are made so weak by the pattern of resistance of the different isolated strata that they can use their power only in truly exceptional circumstances.*

There is also a life-cycle view of bureaucratic organization that holds that change becomes less possible as the organization ages. Downs (1967:20) emphasized this aspect of bureaucracy, noting that "all organizations tend to become more conservative as they get older, unless they experience periods of very rapid growth or internal turnover."

Interestingly, there is also a large literature wherein the opposite is argued—that the large firm is the ideal environment for innovation. Shumpeter (1950), for example, claimed that the modern corporation had "routinized innovation," and Galbraith (1952) saw the resources and sustained collective action required for modern large-scale innovation as being most efficiently provided by large profitable firms. The weight of the empirical evidence on technological innovation does not show either economies or

diseconomies of scale; no comparable work appears to have been done with regard to commercial and general nontechnical innovation.

Given the results of the technological innovation studies, there is no reason to suppose that large organizations are any less (or more) innovative than small or new organizations. What may be true is that the type of entrepreneurship differs. The best entrepreneurial opportunities for large organizations may be those based on the redeployment of the firm's resources and the extension of its competitive positions. Those most attractive to individuals and small firms may be based on new opportunity and the creation of new markets. For example, with the coming of airline deregulation, new entrepreneurial firms entered the industry with strategies based on non-union workforces and low-cost no-frills service. The established carriers, by contrast, worked to develop hubs, frequent-flyer plans, and created a whole new pricing technology for more effective price discrimination.

### *The Problem of Incentives*

To many the essence of the entrepreneurial act is the acquisition of resources, but when the wealth at risk is not the entrepreneur's own, there is a potential problem of incentives. Arrow (1962) was the first to clearly define the problem as one of moral hazard. In his view, the separation of risk-bearing from innovation could be accomplished by simply paying the innovator a fee *as long as it is costless to monitor and evaluate the innovator's work*. But such control is not costless. Consequently, the innovator must be forced to bear at least some of the risk to ensure that he is actually delivering the agreed-on effort. Because the innovator may not have a taste for risk-bearing, too little innovation might be supplied in equilibrium.

A theoretical extension of this idea by Leland and PyLe (1977) shows that outsiders' valuation of an entrepreneurial venture depends on the proportion of the entrepreneur's wealth that has been placed at risk in the project. Downs and Heinkel (1982) provide some empirical support for the proposition that the value of investor's shares rises with the entrepreneur's personal commitment to the project.

These analyses are couched in market terms—they envision the entrepreneur as creating a new venture and having the problem of attracting investment funds. Does the problem of entrepreneurship within an existing firm have a similar structure? I will argue that the nature of the employment contract, managerial mobility, and less-than-perfect markets for managerial labor create incentive problems of a different kind. Rather than a reduction in innovation *per se*, there may be institutional myopia, wherein the



organization's implicit discount rate on future income is higher than its cost of capital.

In organizations so large that decisionmaking is a multilevel process, analysis, proposal, and authorization are separate events. A number of researchers have observed that the authorization step is carried out in the face of large information asymmetries. Schon (1967: 110) observed that

*Entrepreneurs without authority cannot take the necessary leaps; their justifications before the fact always turn out to be inadequate. Both boss and subordinate operate in ignorance—one, in ignorance of the facts, opportunities, and problems of the innovative process; the other, in ignorance of the considerations which will be governing in making decisions.*

In a similar vein, Mintzberg, Raisinghani, and Theoret (1976: 260) noted that

*In capital budgeting as well as in less formal types of authorization, a major problem is presented by the fact that the choices are made by people who often do not fully comprehend the proposals presented to them. Thus, in authorization the comparative ignorance of the manager is coupled with the inherent bias of the sponsor.*

Given limited information, how is the authorization decision made? Bower (1967) studied the process in detail and argued that decisions are ultimately made on the basis of the proposing manager's track record. That is, by gradually building a reputation for reliable judgment, the lower-level manager gains credibility with senior management. The top-level managers cannot assess the projects *ex ante* but are somehow able to attribute reputations from assessments of managers' performance after the fact. One obvious problem with this administrative arrangement is that the top managers' ability to form accurate reputational estimates is severely limited by their presumed inability to comprehend the project *ex ante*. Additionally, the distribution of information leading to entrepreneurial projects will not necessarily correspond to the pattern of reputations. There is, by contrast, every reason to expect that younger managers with shorter track records will have fresher ideas and superior first-hand market and technological information.

Next, consider the impact of managerial mobility on decisionmaking in this context. Assuming that lower-level managers rationally attempt to maximize the net present value of their future earnings, how will managers behave? Given mobility, the manager must temper his view of how a project's future influences his reputation or income with the possibility that he will no longer be in the organization.<sup>7</sup> The net effect is that mobile managers will

discount future cash flows more heavily than would be indicated by their personal discount rates on wealth or their employer's cost of capital. Given the fact that top management must choose among the projects that are actually proposed, the corporation as a whole will appear more myopic than are its members.

If managerial mobility is not just exogenous but potentially opportunistic, even more severe myopia can appear. Entrepreneurial managers, in competition with other managers for scarce project approvals, may sometimes find it necessary to misrepresent the future returns to a project. Calculating that they can leave the firm (or division) if it really begins to appear that their glowing promises will not be realized, these managers may select and support projects that show near-term gains but long-term losses. In essence, they hope to gain the reputational or pecuniary advantages associated with project acceptance and early returns and to avoid the penalties connected with future failure.<sup>8</sup> In part, they bet that their closeness to their projects will give them early warning, permitting opportunistic exit before the project's problems are widely appreciated by others.

But the top-management of the firm will not be ignorant of this logic, although they cannot identify which manager or which project is opportunistic. They are forced to distrust and therefore discount all claims about future profits even more sharply, further increasing institutional myopia.

Now consider the dilemma faced by a midlevel manager who actually has a valuable entrepreneurial idea. The organization, rationally responding to the problems of mobility and opportunism, discounts the longer-term aspects of the proposal or presses for greater collective support by higher-level managers. Seeing that either the project will be rejected or future credits for success will be shared with powerful superiors, the entrepreneurial manager has incentives to leave the firm and pursue the project independently, if possible. By leaving the firm and substituting an ownership interest for an employment relationship, the entrepreneur increases his ability to bond his word by placing his own wealth at risk<sup>9</sup> and providing contractual and organizational arrangements that more tightly link future returns with his wealth or reputation.

To close the analysis, it must be noted that the entrepreneur's ability to exit the firm and form his own venture is yet another avenue that increases the myopia within the firm. Given this alternative, the senior management must consider that any proposal they receive is one that would not be acceptable to the external venture capital market!

The above theory accomplishes two things. It provides an explanation for institutional myopia wherein all actors are rational, and it explains exits

and spin-off in terms of incentive failure rather than as intellectual theft. That is, phenomena like Silicon Valley, where a multitude of firms are formed by employees who quit and take ideas to venture capitalists, can be understood as solutions to the problems of incentives within firms.

## CONCLUSIONS

Entrepreneurial activity will be encouraged where appropriability is low and isolating mechanisms are high. These areas may not necessarily be those where the social returns to innovation are highest, but they are those where private returns to innovation exist. The connection between entrepreneurial activity and uncertainty cannot be signed in general, but there are reasons to believe that it may be positive in many cases.

Entrepreneurship within organizations is facilitated by the ability of large firms to muster resources and administer large projects; it is inhibited by bureaucratic inertia and by the incentive problems rising out of informational asymmetries.

With regard to the organizational locus of entrepreneurship, the analysis points up the salience of the project's futurity. As more of the expected returns to investment occur in the distant future, the potential entrepreneur's ability to attract investors diminishes. Coupling this notion with the problem of appropriability by cospecialized assets, the diagram shown in Figure 1—1 may be constructed. Where the entrepreneurial venture involves significant cospecialized assets, the expectation is that it will be undertaken by a firm possessing those assets. However, as the project's futurity increases, it becomes more difficult to assess the project within the firm. Without some external bonding mechanism, entrepreneurial failure may ensue. One possible solution is a joint venture, with both the cospecialized asset owner and the entrepreneurial visionary investing in a new separate corporation.

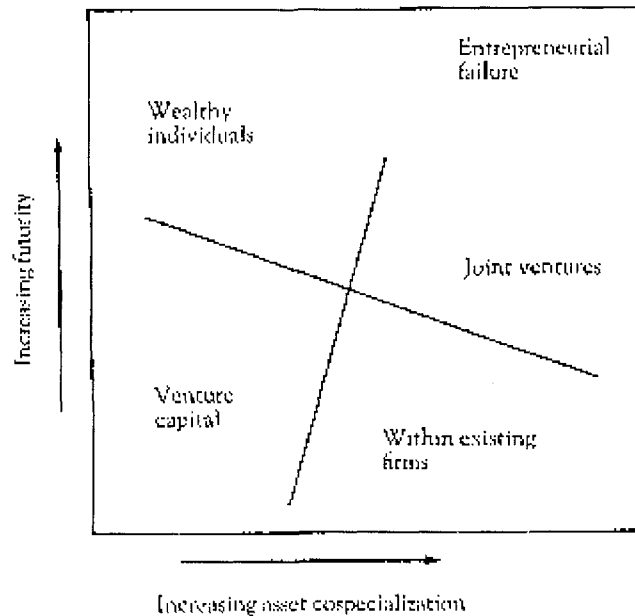


FIGURE 2-1 Variations in Entrepreneurial Locus with Futurity and Degree of Asset Cospecialization

Where cospecialized assets are not a problem, we expect to see new ventures formed by individuals, some of whom may be exiting from firms that are unable to provide the appropriate incentive arrangements. Still, when the futurity of these projects grows too large, the problem of obtaining resources can become insurmountable. In this final region, entrepreneurship will be the province of those who have the ideas and are already wealthy enough to indulge them.

## NOTES

<sup>1</sup> Griliches's (1984) book provides a fine compendium of recent work in the field.

<sup>2</sup> Taken from Rumelt (1982).

<sup>3</sup> Historically, the term rent applies to continuing nondiminishing payments. Above-normal returns that diminish over time are frequently labeled quasi-rents. However, modern theory is less concerned with long-term equilibria and more concerned with the *ex ante* equilibria of expectations. In this context, in which values are present values rather than annuities, we use the simple term rent to cover both quasi-rents and persistent rents.

<sup>4</sup> It is sometimes useful to distinguish between appropriability with respect to use and general appropriability. If, for example, land earns rents in beet farming and would earn equivalent rents in bean farming, taxes on beet production cannot appropriate the rents because the farmer can simply switch to raising beans. Thus, appropriability with respect to use depends on the specificity of the resource—its relative value in its best use compared with that in its next best use. By contrast, a general tax on land income could appropriate the land's rent regardless of its use.

<sup>5</sup> More precisely, if the entrepreneur faces uncertainty represented by the random variable  $X$  with distribution function  $F$  and has a convex payoff function  $V(x)$ , where  $x$  is a realization of  $X$ , then  $EV(x)$  increases with mean-preserving increases in the riskiness of  $F$  (in the sense of second-order stochastic dominance). A more familiar application of this result is in option theory, where it is well known that increases in the variance of the underlying security increase the values of existing options.

<sup>6</sup> See Kamien and Schwartz (1982) and Reinganum (1983).

<sup>7</sup> I am assuming that once a manager takes a position in another organization there is a halt to the process of updating his reputation based on results occurring within his previous employer's organization. Mobility is the simplest way in which this type of "forgetfulness" can be invoked. Other mechanisms commonly recognized in practice are promotion, reorganization, moving to a different division, changes in accounting, the bundling or unbundling of projects, and changes in senior management. In each case, the connection between the project that was once "sold" by the manager and updates to the manager's reputation is weakened.

<sup>8</sup> I am implicitly assuming that the market for managerial labor is a lemons market, in the sense of Akerlof (1970). That is, the market exists because there are nonopportunistic reasons for managerial mobility so that "lemons" can, if their quantity is sufficiently low, mix in with the good-quality managers.

<sup>9</sup> Were the original employer not large and diversified, he could have accomplished this within the firm simply by buying stock.

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