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INNOVATION AND COMPETITIVE ADVANTAGE IN SMALL BUSINESSES: EFFECTS OF ENVIRONMENTS AND BUSINESS STRATEGY

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ABSTRACT

Small businesses continually attempt to achieve a sustainable competitive advantage over competitors. One possible source of competitive advantage may be through either product or process innovations. However, such innovations can be risky, with no guarantee of success. The success of an innovation may depend on both a firm's business strategy and the environment in which it operates. This paper provides a framework for evaluating the possible effects of environment and business strategy on the success of product and process innovations.

INTRODUCTION

As competitive environments become increasingly more complex (Ali, Krapfel, & LaBahn, 1995; Ansoff, 1979; Burgleman & Madique, 1988; Hax & Wilde II, 1999; Hayes & Abernathy, 1982) and technological changes constantly redefine the ways in which businesses operate (Fry, Stoner, & Hattwick, 2001, p.7; Meredith, 1987), developing and sustaining a competitive advantage becomes increasingly difficult for small businesses.

One way businesses may attempt to create and maintain a competitive advantage is through the introduction of some type of innovation. CEOs have cited innovation as being the single most critical source of competitive advantage (Van de Ven, 1986) and research studies consistently show a positive relationship between innovation and performance, with innovation often becoming a necessity for firms to survive increasing levels of competition and uncertainty in a changing business environment (Han & Kim, 1998). However, the proper use of innovation is a major concern for businesses (Bantel & Jackson, 1989; Friar, 1995; Li & Calantone, 1998; Rothwell & Zegveld, 1982).

Innovation has been described as the commercial adoption of an idea, either borrowed or developed in-house, that is in the early stages of acceptance industry-wide (e.g., Bantel & Jackson, 1989). Innovation enables firms to respond creatively to competitive threats and opportunities (Drucker, 1985). In addition, innovation may change the structure of the marketplace to one that favors the innovator, as current products and services become non-competitive (Dickson, 1992.).

Innovation may contribute directly to the long-term viability of operations by enabling a firm to gain and maintain a competitive advantage in the marketplace. However, innovation can also be a risky proposition (Calantone. diBenedetto, & Bhoovaraghavan, 1994; Conner, 1995; Friar, 1995). Attempting to be an innovator can be very costly, with no assurance of adequate return (Leavitt, 1986.) At the time of introduction of an innovation, its long term impact is unknown. Process innovations may be more costly than predicted, and not produce quality improvements or cost decreases commensurate with the investment. Product innovations may not generate an increase in market share large enough to cover costs. Innovations may confer a temporary competitive advantage, but the competitive advantage may not be sustainable.

While large corporations may be able to rebound from the failure of innovations costing millions of dollars, few small businesses have the resources to overcome such mistakes in business strategy. It is therefore imperative that small businesses realize that the effects of innovation on competitive position may differ depending on the fit between two key factors, the competitive environment and the business' current business strategy (Dess, Lumpkin, & Covin, 1997; Jennings & Seaman, 1994).

INNOVATION IN SMALL BUSINESSES

Small firms are often innovators (Karlsson & Olsson, 1998; Khan & Manopichetwattana, 1989; Tether, 1998). In terms of efficiency, small businesses create four times as many innovations per research dollar as do medium firms, and 24 times as many innovations per research dollar as do large firms (Scarborough & Zimmerer, 2000). Although small firms are seen as lacking the resources that might make adoption of innovations easier, they tend to have simpler organizational structures and less "built in inertia". The lack of size and complexity of small firms may enable them to respond more quickly to environmental changes in the marketplace. Because of their size, small firms are likely to be very sensitive to changes in consumer tastes, changes in competitors' strategies, and any changes in technology that may have the possibility of altering the competitive structure in the marketplace (Meredith, 1987; Schnaars, 1991). Smaller organizational size, rather than being an impediment to innovation, may facilitate innovation (Damanpour, 1991).

Innovation may provide a key competitive advantage to small firms and become a critical element in their success (Fry et al, 2001, p. 55). Innovation related to the product design may enable a small firm to fill a particular niche in the marketplace with a product that is different from all other competing products. Innovation in the process area may enable a small firm to lower costs, and give the firm a competitive advantage in price, or may enable the firm to produce a higher quality product, and differentiate itself from other competitors based on quality (e.g., Porter, 1980). For instance, advances in computer aided manufacturing enabled a small firm in the ferrous castings industry to reduce marginal production costs to two-thirds that of its closest competitor and, at the same time, dramatically lower product defect rates (Drucker, 1985). Similarly, innovation by a small Midwestern manufacturer of saw blades enabled it to develop a high margin market niche, literally untouched by its larger competitors, by offering customized products meeting individual customer specifications (Meredith, 1987).

Carpenter & Nakamoto (1989) note that an innovator may also create consumer preferences for a specific type of product, making it extremely difficult for those following the innovator to "steal" market share away. For example, a small business like Ben and Jerry's may create an innovative taste which sets the standard of comparison for ice cream, giving Ben and Jerry's a unique and sustainable competitive advantage.

While it is clear that innovation may be a source of competitive advantage to small firms, and contribute directly to enhanced performance, innovation may involve substantial risk (Calantone et al, 1994; Conner, 1995; Dickson, 1992; Friar, 1995) and may result in wasted resource allocations (e.g., Covin & Slevin, 1989). As a consequence, decisions to innovate may be a critical factor in the long term success or failure of small businesses and must therefore be considered as part of a firm's long term strategic plan. The effects of business strategies and competitive environments on the possible contribution of innovations to a firm's success are therefore an issue of great importance to small businesses.

However, despite the importance of innovation to small businesses, results of studies in the organizational literature have not been integrated to describe how business strategies of smaller firms and characteristics of competitive environments influence innovation. As a result, practitioners have had little to guide them in making decisions concerning innovation. For instance, how might the way that firms compete influence the types of innovations that are adopted? How might different competitive settings affect the possible impact of innovation on a business? Is innovation always likely to lead to improved financial performance?

Based on an assessment of available evidence from the organizational literature, this paper seeks to provide practitioners with insight into possible effects of business strategy and competitive environments on innovation as a source of competitive advantage.

BUSINESS STRATEGY

Firms must have a sustainable competitive advantage in the marketplace in order to survive and prosper (Saloner, Shepard, & Podolny, 2001, chap. 3; Ansoff, 1979; Watkin, 1986). Business strategy is the means by which an organization aligns with its environment in order create and maintain this competitive advantage (Saloner et al, 2001, chap. 2; Porter, 1980). Business strategy also reflects how a firm competes in product or service markets (Hitt & Ireland, 1985), and has direct implications for financial performance (Covin, 1991; Porter, 1980).

While business strategy has been investigated in large organizations (e.g., Dess & Davis, 1984), and in small business contexts as well (e.g., Bantel, 1998; Chandler & Hanks, 1994; Changhanti & Changhanti, 1983; Miller & Toulouse, 1986; O'Neill & Drucker, 1986), the impact of business strategy on innovation has been largely overlooked in empirical analyses. This is somewhat surprising, given that business strategy and innovation are integrally related (Horowitch & Sakakibara, 1986; Porter, 1988). Small firms must develop business strategies to ensure that a sustainable competitive advantage is realized through capitalizing on a firm's specific strengths and overcoming its weaknesses (Porter, 1980). Business strategies determine the product offerings, promotional types and intensity, distribution strategies, and pricing strategies, as well as the internal allocation of resources of a firm. Whether or not to pursue an innovation in either the product or process area is therefore integrally related to a firm's business strategy.

Focus cost-leadership is a small business strategy requiring that firms compete on the basis of price in a certain market segment (Smith, Arnold, & Bizzell, 1991). Cost-leadership involves tight internal cost control, efficient scale economies, avoidance of marginal customer accounts, and less emphasis placed on activities such as advertising and customer service (Porter, 1980). In contrast, the primary objective of a focus differentiation strategy is to build brand loyalty in a segment of the market. It requires the creation of products or services perceived to be unique. Approaches include the development of unique product designs, technologies, features, modes of customer service, or dealer networks. This is accomplished through strong marketing capabilities, product engineering, creativity, and establishing a reputation for quality or technological leadership. Firms attempting to pursue more than one business strategy simultaneously may become "stuck in the middle", unable to capitalize on a single set of distinctive competencies. Typically, the result is poor performance (Porter, 1980).

The choice of a low-cost strategy by a firm, with its emphasis on internal cost control and price leadership, suggests that the firm should emphasize process innovations that facilitate a low-cost production process, rather than product innovations. Significant product innovations would require use of substantial resources to design and produce, and would also require major promotional efforts to gain acceptance in the marketplace. This would result in higher costs, which would be contrary to maintaining a low cost, price leadership position.

Alternatively, the choice of a differentiation business strategy, with its emphasis on the creation of products and services perceived to be unique, suggests that the adoption of innovations enhancing products or marketing capabilities should be pursued to gain or maintain a competitive advantage (Dess & Davis, 1984; Friar, 1995; Hitt, Hoskisson, Johnson, & Moesel, 1996). Product and marketing innovations would serve to constantly remind customers of the unique aspects of a firm's product line, thus helping to maintain a competitive advantage.

Small businesses should seek to allocate their limited resources to innovations that enhance their business strategy. The performance of firms employing a low-cost business strategy is likely to be highest when they regularly adopt innovations involving process adaptations such as more efficient production techniques, automation of routine tasks, and computer aided production planning. These process innovations will result in lower production costs, thus enabling the firms to maintain their low cost leadership in the marketplace. Alternatively, frequent adoption of significant product innovations may adversely affect financial performance in these firms, since such innovations involve resource allocations that fail to enhance business strategy. Product innovations may result in higher costs that might cost the firms their low price advantage in the marketplace. A low cost retailer may attempt to provide a more personalized shopping experience by hiring additional sales representatives. However, increased costs resulting from this strategy may require price increases. Subsequently, the business may lose its low-cost advantage while the improved shopping experience may not be sufficient to create a differential advantage in customer service. Performance of firms pursuing a differentiation strategy is likely to be highest when product innovations are adopted with regularity. Such innovations might include the development of new products, improvements to current products, more effective modes of customer service, and innovations in promotion. These innovations would serve to constantly renew in consumers' minds the idea that the firms' product bundles, including products and service, were unique in the marketplace. Thus, differentiation would continue to be a competitive advantage for these firms, in the face of imitators in the marketplace.

In contrast, substantial process innovations are unlikely to enhance the performance of such firms. Process innovations would be unlikely to contribute to the positioning in the consumer's mind of the product as highly differentiated, and would require resources that might be better spent on product innovations. For instance, if a retailer with a differential advantage due to a high level of service attempts to reduce labor costs through a major process innovation such as computerized customer ordering (in lieu of personalized service by sales representatives), some of the differential advantage gained through a high level of service may be lost. At the same time, it is unlikely that this labor saving device will enable the retailer to compete on the basis of price alone. Thus, the firm may lose its differentiation in service without gaining a commensurate cost advantage.

COMPETITIVE ENVIRONMENTS

Research examining innovation has also suggested that the nature of competitive environments may play a critical role in determining the frequency and success of innovation by firms (Covin & Slevin, 1989; Hax & Wilde II, 1999; Miller & Freisen, 1986, Robertson & Gatignon, 1986; Zahara & Covin, 1995).

Hostile competitive settings are characterized by intense competition, overwhelming business climates, and weak or diminishing competitive opportunities (Covin & Slevin, 1989). Degrees of hostility have been operationalized in the literature through the assessment of items such as perceived degrees of price competition, growth or decline of product markets, and degrees of competition in product quality (Miller & Freisen, 1986).

Past work has consistently reported that innovation occurs most frequently in firms where management perceives high degrees of hostility (Kimberly & Evanisko, 1981; Miller & Freisen, 1986; Schmidt, 1990). Flaherty (1983) showed that in the international semiconductor industry, firms in hostile competitive settings relied heavily on adoptions of innovations to gain differential advantages. Hage (1986) also showed that increased hostility in the environment was associated with increased innovation in the shoe industry. Mascarendas (1991) found that benign competitive conditions were negatively related to rates of innovation by firms in the off shore drilling business.

Covin and Slevin (1989) indicate that high performing small business enterprises faced with hostile environments tend to engage in proactive behavior characterized by risk taking and innovation. In contrast, high performing firms that perceive their environments to be relatively benign assume a more conservative posture by being risk-averse, non-innovative, and reactive to external events. Firms operating in hostile environments may have fewer outright opportunities and must therefore engage in proactive behavior in order to gain or maintain a differential advantage. Alternatively, such behavior in firms operating in benign environments may lead to the acceptance of unwarranted risk and expenditures on programs of action that fail to enhance financial performance (Covin & Slevin, 1989).

Since small firms are typically confronted with severe resource constraints, unnecessary expenditures on innovation by those in relatively benign environments may adversely impact financial performance. Likewise, a lack of responsiveness to changing environmental circumstances by firms in hostile competitive settings may have a similar negative effect on performance. Firms operating in hostile environments may enhance performance by increased adoption of innovations. However, firms operating in benign environments may, in fact, incur performance declines by assuming innovative postures.

APPLICATIONS

Thus far, the main effects of business strategies and competitive environments on innovation and performance have been described. However, small firms pursuing innovation must consider the combined effects of innovation and business strategies in various competitive environments on performance.

Innovations are likely to increase performance of firms faced with hostile competitive environments when such firms pursue innovation consistent with their business strategies. Firms pursuing a differential strategy should emphasize product innovations, and firms pursuing a low cost strategy should emphasize process innovations. Given competitive pressures, these types of innovation are likely to be a necessary ingredient for success, and may enable firms to gain further differential competitive advantage by adopting innovations that enhance competitive postures (see Table 1 and Table 2 for a summary of effects of strategy, environment and type of innovation on firm performance).

A small firm with a differential strategy was successful by emphasizing product innovation in a hostile environment. The firm successfully developed and marketed an innovative emissions control system for a particular market segment (differential strategy) (Rosenberg, 1996).

Another small technology related firm combined a low cost strategy with process innovation to develop a low cost network server for the highly competitive small business market (Hill & Pappone, 1999).

Table 1: Predicted Effects on Performance of Firms Pursuing Different Innovation Strategies in a Hostile Environment

Low Cost Strategy: Process Innovations

Firms attempt to maintain a competitive price advantage through enhancements to production or service processes that reduce costs. Such process innovations are likely to be positively related to firm performance in a hostile environment, as they are congruent with the low cost strategy.

Low Cost Strategy: Product Innovations

Firms attempt to maintain a competitive advantage through product enhancements or product development. These innovations are incongruent with a low cost strategy, due to the associated costs. Product innovations are likely to be negatively related to firm performance.

Differentiation Focus Strategy: Process Innovations

Firms attempt to maintain a competitive advantage through enhancements to production or service processes that reduce costs. Such process innovations are likely to be negatively related to firm performance, as they are incongruent with the differentiation focus strategy.

Differentiation Focus Strategy: Product Innovations

Firms attempt to maintain a competitive advantage through product enhancements or product development. These innovations are congruent with a differentiation focus strategy and are likely to be positively related to firm performance in a hostile environment, as they serve to remind consumers of the firm's commitment to its target consumers' product needs.

Innovations are likely to have a negative effect on performance when firms operating in benign competitive environments pursue innovation that does not directly enhance business strategy. This type of activity is likely to lead to unnecessary resource allocations, given the sluggish nature of competition, and may be inappropriate, given the likelihood that such innovations will not lead to further differential advantage. A small town bakery with a reputation for quality products (a differential strategy) attempting to lower costs through process innovations may alienate its customer base due to a perceived lowering of quality, despite a possible lowering of price. Similarly, a small town thrift shop attempting to innovate in terms of new product offerings may increase costs, which may discourage those loyal customers who had sought a low cost provider of goods. Innovation was not required for competitive reasons in either case, and had a negative effect on financial performance.

Table 2: Predicted Effects on Performance of Firms Pursuing Different Innovation Strategies in a Benign Environment

Low Cost Strategy: Process Innovations

Firms attempt to maintain a competitive price advantage through enhancements to production or service processes that reduce costs. Such process innovations may be positively related to firm performance, as they are congruent with the low cost strategy. However, given the benign environment, such innovations may be unnecessary to maintain a competitive advantage, and the costs may exceed the benefits. Process innovations may be negatively related to performance in a benign environment, even though they are congruent with the firm's strategy.

Low Cost Strategy: Product Innovations

Firms attempt to maintain a competitive advantage through product enhancements or product development. These innovations are incongruent with a low cost strategy, due to the high costs. These product innovations are likely to be negatively related to firm performance.

Differentiation Focus Strategy: Process Innovations

Firms attempt to maintain a competitive advantage through enhancements to production or service processes that reduce costs. Such process innovations are likely to be negatively related to firm performance, as they are incongruent with the differentiation focus strategy.

Differentiation Focus Strategy: Product Innovations

Firms attempt to maintain a competitive advantage through product enhancements or product development. These innovations are congruent with a differentiation focus strategy and may be positively related to firm performance, if they lead to increased share, which results in benefits to the company exceeding the costs of innovation. However, due to the benign nature of the environment, such innovations may be unnecessary to maintain a competitive advantage. If the costs of such innovations are significant, these costs may exceed benefits, and product innovations may be negatively related to firm performance.

However, the performance of firms in benign competitive environments adopting innovations consistent with business strategies is indeterminate. This is because, in the wake of sluggish competition, innovation may enable firms to gain a further differential advantage, luring customers away from competitors and enhancing performance, or as Covin and Slevin (1989) suggest, may result in inefficient resource allocations adversely impacting performance, if costs associated with innovation outweigh resultant market share gains.

Performance of firms adopting innovations inconsistent with business strategy in highly competitive environments is likely to be negative. It follows that firms with differentiation strategies would be unlikely to increase performance when adopting process innovations in a highly competitive environment.

A small bakery had been successful with a differentiation strategy in a highly competitive marketplace, by focusing on high quality. Process innovations meant to lower cost (such as changing product ingredients) led to a decline in the quality reputation of the firm, without lowering costs enough to enable the bakery to compete on price. Thus, adoption of innovations not in line with the firm's strategy was a key factor leading to eventual liquidation of the firm (Hubler, 1998).

Firms pursuing low cost strategies would be unlikely to increase performance when pursuing product innovations. As a small business, Priceline.com initially was successful in a hostile environment with its low cost ticketing system. However, its attempts to pursue additional product innovations (applying its system to different products such as gasoline and groceries) increased costs, were unsuccessful, and were harmful to the company's core business.

SUMMARY

Given the potential impact of innovation on the performance of a small business, it is imperative that small business owners and managers carefully evaluate the fit of their types of innovations with both their business strategy and the type of business environment in which they operate.

For those small businesses operating in a hostile environment, innovation may be necessary to compete and survive. Those businesses with a low cost strategy which direct their resources largely toward adoption of process innovations should be more likely to be able to maintain or enhance their cost advantage, leading to a positive impact on firm performance. Alternatively, for small businesses with a differentiation strategy, development and adoption of product innovations should serve to emphasize a firm's differential advantage in terms of the unique attributes of products, leading to a positive impact on these firms' financial performance.

For small businesses operating in a benign business environment, innovation needs to be approached much more cautiously. While innovations which are inconsistent with the firm's strategy will typically be negatively related to performance, even those innovations consistent with a firm's strategy may not be positively related to overall firm performance. Given the business climate and low level of competition, innovation may not lead to an increased market share, or level of profitability, while costing a relatively large amount of money. It may be better in such environments to follow a more reactive approach to innovation, reacting only to competitive threats or changes in the marketplace.

While the synthesis of the literature indicates that an innovation strategy in line with the business strategy and business climate of a firm is more likely to lead to positive financial performance than an innovation which is not in line with the firm's business strategy and business climate, this refers to the major innovative thrust of the firm. Small investments in product innovation for a low cost firm might be necessary and successful, and small investments in process improvements for a firm with a differentiation strategy might also result in positive firm performance. However, a major investment in an innovation strategy that is not in line with a firm's business strategy and business environment is unlikely to result in positive firm performance, and is more likely to result in a firm "stuck in the middle," without a clear sustainable differential advantage in the marketplace. Regardless of the potential effects of innovation on financial performance, it may sometimes be necessary for a firm to adopt a particular innovation for competitive reasons. For instance, drive-through banking was initially a product innovation enhancing customer service. As this innovation became accepted into the marketplace, it became an expected part of the service offering. To avoid losing market share, low cost competitors were soon forced to offer drive-through banking as well. Drive-through banking had become an expected part of the product offering, and was no longer truly an innovation.

CONCLUSION

To date, small business firms have had little to aid them in evaluating innovation as a source of competitive advantage. Yet, small businesses are a frequent source of innovation (e.g., Meredith, 1987), and often must innovate to survive. In addition, as previously noted, the risks of adoption of innovation are likely to be much greater for a small firm than a large firm. This paper has examined available evidence from the literature and integrated ideas to describe potential impacts of business strategy and characteristics of competitive environments on innovation and performance of small firms in an effort to provide some guidance for small firms in their adoptions of innovations.

However, business strategy and competitive environments are obviously not the only relevant dimensions that firms should consider before pursuing innovation. Decisions to innovate are typically complex and specific to unique organizational contexts. Factors such as resource availability, managerial risk orientations, specific customer needs, and acceptance of innovative ideas by employees are also important considerations that should not be overlooked.

Owning and operating a small business is an inherently risky proposition. "Studies by the Small Business Administration indicate that 63% of new small businesses will have failed within six years," (Scarborough & Zimmerer, 2000, p. 25). Small businesses need to gain and maintain a competitive advantage in order to succeed in the marketplace. Innovation may lead to a competitive advantage. Therefore, a more complete understanding of the relationship of business strategies and competitive environments to the effects of different types of innovation on small business performance may give owners of small businesses the competitive advantage needed to survive and prosper.

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