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In search of the drivers of high growth in manufacturing SMEs

Nicholas O'Regan, Abby Ghobadian and David Gallear

Middlesex University Business School
London NW4 4BT

E-mail: N.O'Regan@mdx.ac.uk
E-mail: A.Ghobadian@mdx.ac.uk
E-mail: D. Gallear@mdx.ac.uk

Abstract

Though considerable attention in the extant literature has been devoted to growth and performance of firms, there is a dearth of research on high growth firms. Furthermore, the majority of literature in this area focuses on large firms while research on high growth small firms is underdeveloped. This paper investigates the drivers of high growth in manufacturing SMEs. Following a number of focus group interviews with six managing directors of manufacturing firms, a number of drivers of high growth were identified and investigated in a sample of 207 manufacturing SMEs. The results of this study indicate that high growth firms place a greater emphasis on external drivers such as strategic orientation, their operating environment and the use of e-commerce compared with firms having static or declining sales. The analysis shows that high growth firms compete largely on the basis of price. While high growth firms have increased their sales by over 30% during the past three years or longer, it is questionable if manufacturing firms can sustain their competitive advantage without recourse to greater research and development, and innovation in the longer term.

Key words: High growth, SMEs, innovation, strategic orientation, e-commerce, ownership, environmental perception, organisational capabilities.

Introduction

The essence of strategy research is concerned with understanding the factors that contribute to the success and competitive advantage of business organisations. Put simply, strategy research is about understanding why some firms are successful and some are not (Barnett and Burgelman, 1996; Schendel, 1996). While strategy has 'undergone, in the 90s, a major shift in focus regarding the sources of sustainable competitive advantage: from industry to firm specific effects' (Spanos and Lioukas, 2001), the industrial positioning and resource based view remain the two main schools of strategy (McNamara et al., 2003).

The industrial positioning view is based on the position of a firm within a specific industry (McGahan and Porter, 1997; Bowman and Helfat, 2001; Nair and Kotha, 2001). More recent studies focus on the resource-based view of strategy (RBV), and contend that competitive advantage arises from organisational capabilities (Harrison, 2003; Barney, 1995; Peteraf, 1993; Teece et al., 1997). This view suggests that competitive advantage and performance results are a consequence of firm-specific resources and capabilities (Barney, 1986; Wernerfelt, 1984). The core of the resource-based view is that firms differ in fundamental ways as each has its own 'bundle' of resources (Grant, 2002: 139; Fleisher and Bensoussan, 2003). Hawawini et al (2003) suggest that the RBV perspective arose from the inability of the industrial positioning view to 'provide a rigourous explanation for intra-industry heterogeneity in performance'. Indeed they ask 'if all firms within an industry faced identical conditions of supply and demand and operated under the same market structure, then why did some firms within the same industry still perform better than others?'.

Fleisher and Bensoussan (2003: 208) state that 'the source of competitive advantage within a firm is often multifactorial in that it usually cannot be attributed to only one type of resource'. They suggest that it is the interaction between the different types of resources that drive a firm's competitive advantage. The premise of this paper is that the drivers of high growth in manufacturing firms include industrial positioning and RBV perspectives. Indeed,

we contend that each perspective can have a catalytic effect on the others and it is this cumulative catalytic impact that enables high rates of growth to take place.

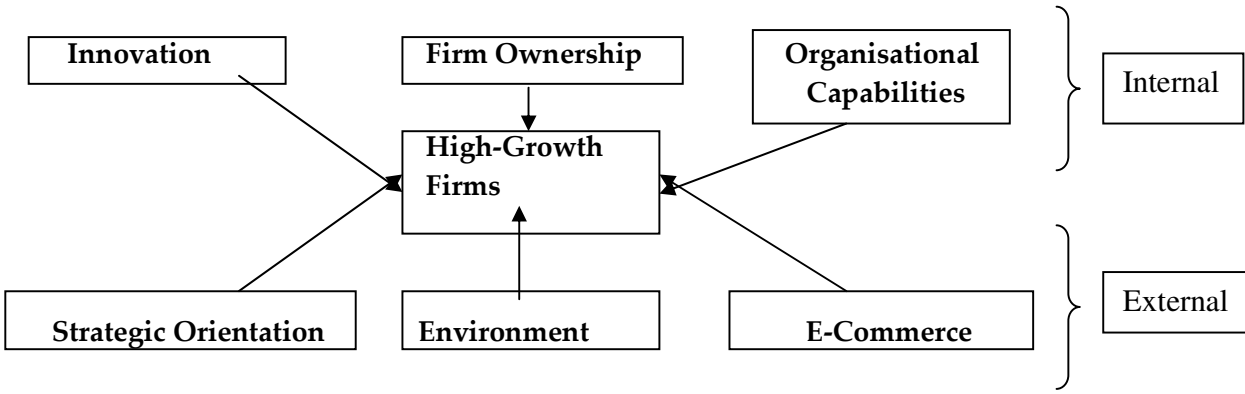
Despite all the attention devoted to growth and performance, there is a dearth of research on high growth firms (Sexton and Smilor, 1997). Indeed, there is still no commonly accepted definition of 'high-growth' (March and Sutton, 1997). Some researchers and practitioners see high-growth as referring to employment growth, while others see high growth as relating to sales and turnover. Accordingly, a range of definitions are used to describe high growth firms (Delmar and Davidson, 1998). However, the definition most widely in the literature defines high growth firms as having a sales growth rate of at least 20 percent per year for three or more consecutive years (Fischer and Reuber, 2003). Definitional issues apart, an understanding of what drives high growth in manufacturing SMEs is critical to Managing Directors striving to attain or maintain competitive advantage as well as to policy makers with responsibility for economic development and employment creation.

Aims of the Research

To date, most SME research focuses on factors that contribute to their survival such as financing, rather than a greater understanding of the growth process and the achievement of sustainable competitive advantage (Storey, 1994). The majority of the literature focuses on large firms and there is a dearth of research on high growth smaller organizations (Sexton and Smilor, 1997). Accordingly, it is important to understand the drivers of high growth in manufacturing SMEs. The literature suggests that a number of attributes are associated with high growth firms such as strategic planning and strategic orientation (Barringer et al., 1998; Feeser and Willard, 1990), research and development (McGee and Dowling, 1994) and innovation (Christensen and Bower, 1996). These attributes formed the basis of a number of focus group activities held with managing directors of manufacturing SMEs prior to the development of the conceptual model depicted in figure 1. The focus group discussion led to the addition of other attributes which we categorised as external (industrial positioning) and internal (RBV) factors. The conceptual model identifies six drivers of high growth.

In this paper, we focus on small and medium sized enterprises (SMEs). It is important to understand that SMEs are not smaller versions of larger firms. Their needs and often their decision-making processes differ significantly from those of larger firms (Shrader et al., 1989). It should be added that the literature suggests that small firms often grow faster than large (Barkham et al., 1996).

Figure 1 Conceptual model of the drivers of high growth



The development of the conceptual model led us to formulate the following research questions for the study:

i) *Does innovation influence high growth in manufacturing SMEs?*

ii) *Does firm ownership influence high growth in manufacturing SMEs?*

iii) *Do organisational capabilities influence high growth in manufacturing SMEs?*

iv) *Does strategic orientation influence high growth in manufacturing SMEs?*

v) *Does the perception of the operating environment influence high growth in manufacturing SMEs?*

vi) *Does e-commerce impact on higher growth in manufacturing SMEs?*

This study contributes to the research of SMEs by focusing on the drivers of high growth performance, an issue largely neglected in the extant literature.

The paper is structured as follows: first each of the drivers depicted in the conceptual model above are described. Second, the methodology adopted for the study is described. The analysis of the empirical research is then presented. Conclusions of our findings and directions for future research are outlined.

Drivers of high growth

Innovation

The definitions of innovation largely focus on new products and processes (Zott, 2003; Glynn, 1996). More recent definitions expand on the novelty aspect by also focusing on the creation of value. For example, Linder et al. (2003) define innovation as "implementing new ideas that create value."

From a practitioner perspective, this means the adoption of new products and/or processes to increase competitiveness and overall profitability, based on customer needs and requirements (Zahra et al, 1999; Mone et al., 1998). The role of innovation and its importance as a driver of competitiveness, profitability and productivity is well documented in the literature (Porter, 1998; Senge and Carstedt, 2001; McEvily et al., 2004). More specifically, the literature focuses on innovation as a crucial element in the achievement of competitive advantage (McEvily et al., 2004; Shoham and Fieganbaum, 2002; Roberts, 1999; Hitt et al., 1996; Banbury and Mitchell, 1995).

Kanter (1999) encapsulates the benefits of innovation by stating that '*Winning in business today demands innovation'*. However, existing studies on innovation focus largely on drivers of product development such as creativity (Amabile et al., 1996), resource availability (Dougherty and Hardy, 1996), mergers, acquisitions, divestitures, downsizing, and cost reduction (Hitt et al., 1996), as well as firm size (Acs and Audretsch, 1988). More recently, attention has focused on the need to meet customer demands in shorter product cycles using flexible manufacturing systems (Zenger and Hesterly, 1997).

The research to date has also examined the role of innovation as a driver of high levels of growth in a number of industrial sectors (Zahra et al., 1999). However, it has focused primarily on larger firms, rather than on SMEs. This is somewhat surprising as SMEs are renowned for their creativity and new product development, as well as their ability to innovate effectively and develop new products more rapidly than larger firms (Storey, 1994).

However, achieving effective innovation is a complex and formidable task. Many SMEs have some difficulties converting research and development into effective innovation. Many of these difficulties are organization specific. For example, Christiansen (1997) suggests that 'there is something about the way that decisions get made in successful organizations that sows the seeds of eventual failure'.

This led us to formulate the following research question:

Does innovation influence high growth in manufacturing SMEs?

The literature states that innovation performance can be measured according to the inputs (budgets allocated to R&D) or outputs (number of patents issued) (Ahuja and Katila, 2001). However, the exploratory interviews and discussions with Managing Directors of six organizations and employer federations suggested that, in general, investment in R&D, the number of new products introduced, the need to meet technological changes in both processes and products and the importance of prototype development are the most important attributes of innovation in manufacturing SMEs.

Ownership

Does ownership matter and to what extent does it impact on the operations and the SME performance?. This debate began with an empirical study conducted by Demsetz and Lehn (1985) based on a sample of 511 firms from the US. Their findings suggest that ownership does not drive performance, but rather that performance drives ownership. On the other hand,

others contend that there is a positive relationship between ownership and performance (Li and Simerly, 1998), although it must be said that the majority of studies relate to the manager-stakeholder relationships rather than the impact of ownership on performance.

Despite the mixed findings above, the literature suggests that ownership 'represents a source of power that can be used to either support or oppose management depending on how it is concentrated and used' (Salancik and Pfeffer, 1980:655). Others contend that ownership has important implications for the formulation and deployment of the corporate strategy, and for performance objectives such as short-term and long-term targets (Hill and Snell, 1989). Eisenmann (2002) states that the level of strategic risk taking behaviour will vary dependant on the ownership structure. He argues that 'corporate executives tend to evaluate decisions through summary financial measures such as return on investment and performance against profit budgets'. However, ownership also impacts on a firm's activities indirectly, as it tends to dictate the sources and amounts of funding available. In reality, ownership may also be a limitation on strategic development by dictating the funding environment within which strategy will actually develop.

With reference to smaller firms, Variyam and Kraybill (1993) state that ownership is a critical factor in their direction and operations. Some SMEs are owned by a small number of individuals or by an owner/manager. These firms are generally classified as independent. Others are wholly owned subsidiaries of larger organisations. Such firms are considered SMEs, but in practice they can fall back on the expertise and resources of the parent company (Variyam and Kraybill, 1993). There are many distinct differences between independent and subsidiary firms. From an operational aspect, subsidiary firms may need to 'deliver' a performance objective formulated by the holding or parent company. Performance objectives based on financial criteria are common. Accordingly, given the importance of quarterly and annual results, many group owned firms are less likely to engage in risky and/or longer–term projects (Ghemawat and Khanna, 1998; Dierickx and Cool, 1989). Nevertheless, in a recent

article, Ehrhardt and Nowak (2003) suggest that independent firms operate more efficiently compared with other firms. This led us to formulate the following research question:

Does firm ownership influence high growth in manufacturing SMEs?

For the purposes of this study, we defined independently owned firms as owner controlled businesses. This approach was used by other researchers such as Litz (1995). Subsidiary firms were defined as non-owner controlled and have delegated management tasks to professional managers.

Organisational capabilities

The importance of organisational capability is well documented (Ramanujam et al., 1986). Quelin (2000: 477) states that 'more and more, the strategic management field is focusing on the role of competencies and resources that accumulate within a firm'. He argues that each firm has a unique organisational capability based on its technological and organisational competencies. Hoskisson et al (2004) refer to a capability as 'the capacity to perform a task or activity in an integrated manner'. Organisational capabilities are commonly defined as a firm's capacity to deploy its assets, tangible or intangible, to perform a task or activity to improve performance (Amit and Schoemaker, 1993; Teece et al., 1997). Examples include the capability to; offer excellent customer service, develop new products and innovate (Lorenzoni and Lipparini, 1999). Accordingly, capabilities are critical for achieving competitive advantage (Teece et al., 1997; Schoenecker and Cooper, 1998; Stuart and Podolny, 1996).

The literature suggests that the ability to build effective capabilities is a significant driver of performance (Teece et al., 1997). However, the literature largely focuses on organisational capabilities in large firms. Previous research examined capabilities development (Henderson and Cockburn, 1994; McGrath et al., 1995; Teece et al., 1997), and cost reduction, higher quality and greater flexibility in manufacturing (Schroeder et al., 2002).

The literature is clear that firms differ based on organisational capabilities (Barney, 1991; Dierickx and Cool, 1989; Hansen and Wernerfelt, 1989), and that such capabilities are used to 'create and exploit external opportunities and develop sustained advantages' (Lengnick-Hall and Wolff, 1999). While previous research primarily focused on larger firms, Floyd and Wooldridge (1999) contend that SMEs face important challenges as they decide whether to build on their existing organisational capabilities or pursue entirely new business ventures. Previous studies contend that capabilities are firm-specific and developed within the firm rather than acquired externally (Henderson and Cockburn, 1994; McGrath et al., 1995).

The focus group discussions confirmed that it was not possible to obtain a definitive listing of organisational capabilities. However, broad agreement was obtained on the use of the following capabilities:

- Advertise/promote the product or service
- Deliver a broad product range
- Distribute products broadly
- Respond to swings in volume
- Make rapid design changes
- Compete on price
- Provide after sales service
- Deliver products quickly
- Provide high performance products
- Deliver products on time
- Offer consistent quality
- Involvement of top management
- Involvement of line managers
- Flexibility to adapt to unanticipated changes

Not surprisingly, the capabilities outlined centered on aspects covered in previous research, such as the use of price (Dutta et al., 2002), the ability to learn and change (Barney et al., 2001), the use of resources and skills (Fiol, 2001), and customer satisfaction (Carr, 1999). The final attributes listed were perceived as the most appropriate for the sectors under examination, and are consistent with the attributes of capability described by Lorenzoni and Lipparini (1999) and Connor (1999).

The literature largely focuses on organisational capabilities or competencies in large organisations (Wernerfelt, 1984; Barney, 1986, 1991; Leonard-Barton, 1992). Specific examples of previous research include; the examination of capability development (Henderson and Cockburn, 1994; McGrath et al., 1995; Teece et al., 1997), and the use of capabilities to achieve cost reduction, higher quality and greater flexibility in manufacturing (Schroeder et al., 2002). However, the research in relation to SMEs is noticeable by its absence. This led us to formulate the following research question:

Do organisational capabilities influence high growth in manufacturing SMEs?

Strategic orientation

Strategic orientation is concerned with the direction and thrust of the firm and is based on the perceptions, motivations and desires that precede and guide the strategy formulation and deployment processes (Miller, 1987). A number of taxonomies or typologies are prevalent in the literature. These help 'bring order to the complex set of interrelated phenomena by identifying recurring patterns of decisions which then provide a comprehensive, yet parsimonious, orientation to the study of strategy (Slater and Olsen, 2001: 1056).

In order to test the applicability of generic strategies, the authors considered the literature on the Miles and Snow taxonomy and Porters generic strategies. The authors choose the Miles and Snow typology as it focuses on the 'dynamic process of adjusting to environmental change and uncertainty' (Miles and Snow, 1978: 3), and effectively takes into consideration the trade-off between external and internal strategic factors (McKee et al., 1989). In any event, the literature suggests that the use of Porter's (1980) model of competitive strategy is not appropriate in the case of SMEs (Rugman and Verbeke, 1987). They suggest that a focus strategy is the only real choice open to SMEs. Accordingly, the element of choice is non existent.

The Miles and Snow typology is still the main typology used (Conant et al., 1990: 365),

and has been tested extensively in a range of industries (Conant et al., 1990; Shortell and Zajac, 1990; James and Hatten, 1995, Miles and Snow, 1978; Zahra and Pearce, 1990; Ketchen et al., 1993).

The Miles and Snow typology focuses on the direction and influence given by managing directors and the top management team to the firm's strategic direction. It suggests that three fundamental issues need to be addressed by decision-makers in any firm; managing the firm's share of the market (the entrepreneurial problem), deploying solutions (the engineering problem) and finally, structuring the firm to manage the processes outlined (the administrative problem). Miles and Snow's contention is that a pattern of the responses to these issues indicating the orientation of the firm can be detected. Accordingly, the Miles and Snow typology effectively considers the alignment of the firm's strategy with its external operating environment. Four types of organisation were identified based on their approach to the changing operating environment - Prospectors, Analyzers, Defenders, and Reactors (see Table 1).

Table 1 – A summary of the Miles and Snow generic strategy categories

Strategic orientation	**Main focus**	**Traits**
Prospector	Entrepreneurial, innovation and new opportunities orientated	External orientation, environment scanning, maximize new opportunities. Innovation to meet market needs. Flexibility and freedom from constraining company rules and regulations. Welcome change and see their environment as 'uncertain'.
Defender	Defending existing market. Targets a narrow market segment (may be a niche market). Uses variety of means to defend existing market.	Narrow range of products/services Internal orientation, efficiency of existing operations. Uses well established ideas/methods and avoids unnecessary risk. Centralised control and a functional structure are common.

Analyser	Hybrid of Prospector and Defender types.	Operates well in both stable and dynamic markets. Thorough analysis. Uses efficiency and increased production in stable markets and innovates in dynamic markets.
Reactor	Reacts to change.	Short term planning, reacts to others actions. Change inevitably presents some difficulties.

Miles and Snow contend that every organisation has a dominant trait resulting from the influence of its key decision makers, and their perceived view of the operating environment. The choice of whether to be proactive or reactive will, to a large extent, follow from this view. While the Miles and Snow typology has been tested in a range of industries, there is a dearth of research on SMEs. Accordingly, we derived the following research question:

Does strategic orientation influence high growth in manufacturing SMEs?

The operating environment

The degree and complexity of the current changing environment is driving firms, both large and small, to seek new ways of conducting business to create wealth (Stopford, 2001). However, managers are likely to perceive the importance of their firm's operating environment differently (Mezias and Starbuck, 2003). This means that opportunities and threats will be addressed in different ways (Bertrand and Schoar, 2003; Jackson and Dutton, 1988; Lang et al., 1997). For example, firms operating in a dynamic or turbulent environment will be more aware of the need to be externally–orientated, innovative and proactive (Crant, 2000; Naman and Slevin, 1993; Dess et al., 1997; Markides, 1998).

Previous empirical studies provide evidence that environmental turbulence (Naman and Slevin, 1993) and environmental complexity (Zahra, 1991) are both positively related to

innovative, risk-taking and proactive behaviour by firms. It follows from this that high growth in manufacturing SMEs may be affected by how they see their operating environment. A number of studies have found that operating environment impacts on overall performance (Nicholls-Nixon, Cooper and Woo, 2000). However, these studies focus on larger firms. Accordingly, we derived the following research question:

Does the perception of the operating environment influence high growth in manufacturing SMEs?

E-Commerce

Electronic business (e-business) has grown rapidly in importance and is used by firms of all sizes. It enables all firms to compete on a broadly level playing field with few barriers to entry. Turban et al (2002) contend that there are few innovations with as much potential as e-Commerce, ranging from internal activities such as cost control and increased efficiency to external activities such as sales and customer liaison. Indeed Amit and Zott (2001) contend that business promoted on the internet provides important new avenues for wealth creation. This is particularly important for SMEs as e-business is 'transforming the rules of competition for established businesses in unprecedented ways'.

An e-business firm is defined by Mescon et al. (2002) as 'a company that has transformed its key business processes to incorporate Internet technology into every phase of the operation'. This implies that an e-business firm utilises the technology across its value chain. Value chain typically consists of activities that commence with procurement and link with suppliers, transformation processes, marketing, and culminate in distribution including link with customers. It also consists of a set of support functions such as HR and Finance. E-business is often confused with the term *e-commerce* that involves one or more of the following business models: *business-to-consumer, business-to-business, consumer-to-business and consumer-to-consumer.* The more complex e-commerce business models concentrate at either end of the

value chain, while the simpler models use the technology for basic marketing purposes. Therefore, in essence, e-commerce's primary focus is the sales and marketing activities. On the other hand, e-business is much more and involves using the internet technology to transform the way a firm does business and achieves the maximisation of customer value.

The advantages and disadvantages of e-commerce are classified by (Iacovou et al., 1995) as: ``direct'', and relatively easy to quantify, such as cost and time savings; and ``indirect'', seen as being difficult to quantify, and generally taking longer to eventuate. A similar separation is also used by (Giaglis et al., 1999), who discuss both ``hard'' and ``soft'' benefits of e-commerce. Poon and Swatman (1997) found that the benefits perceived by small businesses during Internet use and potential business opportunities are key drivers for Internet use. Likewise, E-commerce has the potential to offer customers a better deal compared to purchases by conventional methods in many situations. Bouwman (1999) suggests that many firms engage in e-commerce as a means of communication and the provision of access to information on their products and services. The promotional emphasis of e-commerce is emphasised by Hormozi et al. (1998) who contend that the development of an organisational Website is perhaps the most beneficial element of E-commerce that businesses can implement.

This led us to formulate the following research question:

Does e-commerce impact on higher growth in manufacturing firms?

Methodology

Based on existing definitions of high growth, we adopted a more stringent approach than that forward by Fischer and Reuber (2003). We defined high growth firms as having a sales growth rate of at least 30 percent per year for three or more consecutive years (previous definitions used a sales growth rate of 20%). To identify potential respondents for participation

in the study, sample criteria were established. While no one directory provides an entirely suitable sampling frame, a random sample was available from a reputable commercial firm. As there are nearly 15,000 electronic/engineering small firms in the UK (DTI, 2000), a simple random sampling method was used. The study focuses on firms established over 5 years. This means that they are likely to have established structures and have survived their potentially most turbulent years (Pickle and Abrahamson 1976). Data was gathered by means of a self reporting survey questionnaire, consisting of questions to ascertain the emphasis on the attributes described above and depicted in figure 1. Selecting a self-reporting respondent is a well-established approach in management research (Avolio et al., 1991).

The external validity of the instrument was secured by:

a) using where possible elements of relevant instruments tested in previous field work by other researchers;
b) identifying significant support in the literature for the relevance of the concepts used and their attributes;
c) using initial qualitative interviews with the managing directors of SMEs to test comprehensiveness and relevance of the instrument;
d) piloting the questionnaire to test for clarity of questions, relevance, and completeness.

We used managerial perceptions as the basis of the study, as they shape to a significant degree the strategic behaviour of the firm. This is consistent with Chattopadhyay et al. (1999) and Spanos and Lioukas (2001). Gioia and Chittipeddi (1991: 434) state:

> '*the C.E.O. is portrayed as someone who has primary responsibility for setting strategic directions and plans for the organization, as well as responsibility for guiding actions that will realise those plans'*.

In a review of the literature, Westphal and Frederickson (2001) found that top management has a significant impact on strategic direction and change. We chose to use Chief

Executives as respondents in this study as they are seen as having a wide breadth of knowledge of all the organizations functions, activities and operating environment (Frost et al., 2002; Hillman and Keim, 2001).

As the study focuses on only two sector types: mature products and stable technology, products with short life cycles and changing technology respectively, the conclusions apply primarily to these sectors. This could be considered to be a limitation of the study. Further testing will be needed to confirm the findings' relevance to business practice, and to facilitate the effective operationalisation of the findings.

Response

Following the initial mailing of 1,000 questionnaires, we found that 198 firms did not meet the size criterion, had ceased operations, or were not contactable. This reduced the effective size of the sample to 802 SMEs. Two hundred and seven completed and usable questionnaires were received representing a response rate of 26 per cent. This represents a highly satisfactory response (see Hart, 1987). The degree of non-response was measured to eliminate any source of bias within the sample. All SMEs were contacted by telephone to ascertain the reasons for non-response. The most frequent reasons were:

- lack of time and resources to complete the survey;
- company policy not to participate in surveys;
- a reluctance to divulge information;
- unable to contact the managing director or his/her deputy; and
- refusal to participate with no particular reason given.

Taken together with the number of valid responses this suggests that response bias is not a serious problem and does not invalidate the results. The demographic of non-responding firms were compared with that of responding firms. No discernible differences were detected. This points to the absence of any serious response bias.

Thirty nine firms met the criteria for classification as 'high performing'. The sample data was also tested for the effects of extraneous variables such as firm size and product type. The analysis confirmed that these factors did not significantly influence the drivers of high growth depicted in Figure 1. A chi square test indicates that there is no association between strategic orientation and industrial sector ($\chi 2$= 4.73, df=1, p=0.49157) in this sample. Accordingly, the analysis does not differentiate between engineering and electronics firms.

Data analysis

The research findings for each of the six drivers investigated are discussed in turn below.

Innovation and high growth

We compared the impact of innovation type attributes in 'high growth' firms and in firms where sales over the previous 3 years or more remained static or contracted. The results are depicted in Table 2.

Table 2. Percentage of firms with emphasis on innovation

	High Growth Firms	Other Firms
Investment in R&D		
£0	35%	33%
£0 -20,000	47%	23%
>£20,000	18%	44%
Introduction of new products		
No new products	37%	22%
1-3 new products	57%	56%
>3 new products	6%	22%
Need to meet technological changes in processes	23%	41%

Need to meet technological changes in products	46%	42%
Prototype development is a key activity	38%	51%

Table 2 indicates that whilst the proportion of high-growth firms making no investment in R&D and the proportion of other firms making no investment in R&D differs very little (35% and 33% respectively), high growth firms do not invest as much in research and development as the firms with static or declining sales. This is also reflected in the lower number of new products introduced to the market place, as well as the lesser degree of emphasis on prototype development. In addition, high growth firms tend to have a lower degree of technological changes in their processes but a slightly higher emphasis on the need to meet technological changes in products. Arguably, this indicates a stronger customer orientation in the sense that they strive to meet customer needs with existing products.

We also carried out correlation analysis which found a positive correlation between R&D investment and technological change in products and processes in firms with static or declining sales. No significant correlation was found between similar factors in high growth firms. Accordingly, we can conclude that innovation is not a significant influence on high growth in the manufacturing firms examined.

Ownership and high growth

Table 3 depicts the analysis of firms based on their form of ownership.

Table 3. Firm ownership

	High Growth Firms	**Other firms**
Independently owned	72%	81%
Part of a Group	28%	19%
Owner managed	54%	71%

72% of high growth firms in our sample were independently owned compared to 81% of other firms. The analysis indicates that slightly over half of all high growth firms are owner managed whereas nearly three quarters of other firms are owner managed. In addition, a higher percentage of high growth firms (28%) are part of a group. This supports the contention by Salancik and Pfeffer (1980) that ownership is a 'source of power' that can be used as both a driver of strategic direction and a safety valve that can be used to reduce the impact of risky decisions. The higher proportion of high growth firms being part of a larger group and lower proportion being owner managed may also explain the lower level of investment in R&D and the lower degree of new products introduced to the market of high growth firms. This supports the contention of Ghemawat and Khanna (1998) and Dierickx and Cool (1989) that many group owned firms are less likely to engage in the more risk prone and/or longer term projects. It could be argued that high growth firms (with sales growth in excess of 30% for the past three years or more) have greater external focus compared with owner managed firms. There are a number of possible explanations for this. Firstly, the greater prevalence of links to parent or holding companies inherently affords high growth firms greater external visibility. Consequently, there is likely to be more extensive and wider range of external contacts, thus allowing high growth firms to more fully capture sight of, and understand, market needs, dynamics and opportunities. Secondly, the greater the incidence of the need to present (and possibly justify) business plans to owner stakeholders (holding or parent companies) for firms in the high growth category, is likely to force them to engage more extensively in market research and getting closer to the customer, in order to seek to ensure that the business plans are convincing. It is also plausible that higher incidence of professional management leads to greater external focus in high growth firms. Owner managers of independently owned firms, though often possessing entrepreneurial drive, often have little formal management training. On the basis of the findings we can conclude that ownership does influence high growth in the manufacturing firms examined.

Organisational capabilities and high growth

We next examined the impact of organisational capabilities on high growth firms. We asked each firm to identify their key capabilities. Table 4 depicts the results.

Table 4. Percentage of firms indicating capabilities as 'key'

Capability	High Growth Fir ms	Other Firms
Ability to:		
Swiftly respond to customer needs	92.1%	92.4%
Effect rapid tool change	21.6	16.9
Effectively plan the deployment of capacity	45.9	46.9
Schedule effectively	**48.6**	**57.7**
Rapidly change product lines	43.2	42.3
Adapt to unanticipated changes	50.0	47.7
Generate new ideas	42.1	50.8
Identify new opportunities	**51.4**	**66.9**
Innovate	45.9	50.8
Maintain technological change	**32.4**	**42.3**
Obtain relevant information	32.4	36.0
Bring new plants on line quicker	5.4	6.9
Bottleneck scheduling	10.8	16.2
Effective material management	29.7	37.7
Effective project management	**29.7**	**49.2**

The analysis of Table 4 indicates that high growth firms do not differ significantly from other firms in their ranking of key capabilities with the exception of *scheduling effectively*, *identifying new opportunities*, *maintaining technological change* and *effective project management*, where other firms place a higher emphasis. With a greater focus on the augmentation and

exploitation of existing products it is reasonable to argue that high growth small firms need to devote less time to the mechanics of formalised project management, or the upgrading or replacement of existing process technology. We also carried out correlation analysis and found that both *scheduling effectively* and *identifying new opportunities* are significantly correlated with performance (0.05 level – 2 tailed) in other firms whereas none of the capabilities are correlated with performance in the case of high growth firms. This finding suggests that organisational capability does not impact on high growth in the sample of manufacturing firms examined. This therefore suggests that there are other more important factors contributing to high growth.

Strategic orientation and high growth

We used the Miles and Snow typology to examine strategic orientation and asked each firm to indicate the statement that best described their firm. The analysis is depicted in Table 5.

Table 5. Strategic orientation using Miles and Snow typology by percentage of firms

Type	High Growth Firms	Other Firms
Prospector	28 (71.8%)	92 (43%)
Defender	11 (28.2%)	117 (53%)
Analyser	-	9 (4%)
Reactor	-	-

The analysis of Table 5 indicates that the majority of high growth firms are prospectors, whereas defenders form the larger portion of firms with static or declining sales. Prospectors are continually looking for new opportunities, whereas defenders are happy to safeguard existing markets. Accordingly, we can conclude that strategic orientation impacts on high growth.

Previous results have already shown that high growth firms place a higher emphasis on the need to meet technological changes in products, suggesting that the nature of prospecting in high growth firms is firmly rooted on upgrading products to meet market needs and maximise market opportunities. It appears that as small firms with limited budgets for research and

development, high growth small firms understand the need to prospect and deliver market offerings through means other than the larger scale 'breakthrough' type projects such as those supporting new product introductions.

Perception of the operating environment and high growth

We examined the companies' perception of their operating environment to ascertain if it impacts on high growth small firms. The results are depicted in Table 6.

Table 6. Perception of the operating environment by percentage of firms

Attributes of operating environment	High Growth Firms	Other Firms
Stable and posing little threat	13.2%	23.0%
Turbulent	52.0%	44.8%
Threat of substitute goods	46.0%	37.1%
Threats of overseas competition	49.2%	43.5%
Changing regulatory environment	41.8%	36.3%

An analysis of Table 6 indicates that high growth firms perceive their operating environment to be turbulent and subject to competitive advances from overseas as well as substitute goods. This is consistent with high growth small firm's prospector strategic orientation and heightened awareness of the need to be externally oriented (Dess et al., 1997; Markides, 1998). The fear of competition and substitute goods is arguably as a result of a lack of large-scale innovation. For high growth firms in our sample, the risk taking associated with environmental turbulence that Naman and Slevin (1993) refer to is clearly associated with the prevailing strategy of taking existing products towards their potential limits of order winning functionality. Accordingly, we can conclude that the perception of the operating environment is a factor in the achievement of high growth.

E-commerce and high growth

Finally, we examined the degree of emphasis on various e-commerce attributes by both high growth and firms with static or declining sales. The results are depicted in Table 7.

Table 7. The degree of emphasis on e-Commerce

Attributes	High Growth Firms	Other Firms
Actively using e-commerce	61.5%	54.0%
Company has a web site	79.5%	84.2%
Do you transact business on the internet	53.8%	35.1%
Impact on your supplier and/or distributor relationships	31.6%	36.0%
Impact on your role as a supplier/distributor	26.5%	28.9%

Table 7 indicates that high growth firms are more likely to transact business on the internet and be actively using e-Commerce compared with other firms. This is consistent with the earlier findings where high growth firms are largely sales orientated. However, we tested this by asking firms to indicate the factors that enable them to compete successfully in their product market. Table 8 depicts the results.

Table 8. Competitive factors used by manufacturing SMEs

Factors	High Growth Firms	Other Firms
Price	92.3%	76.2%
Superior product quality	85.4%	87.1%
Superior flexibility	71.7%	78.0%
Design	41.0%	62.2%
Product variety	20.4%	34.8%
Innovation	28.0%	49.8%
After sales service	64.3%	63.6%

Focus on specific markets	59.1%	57.7%

Both high performing and non-high performing firms place high emphasis on superior product quality. This competitive factor has long been considered the key foundation upon which other factors that contribute to performance and competitive advantage must be built. However, Table 8 indicates that high growth firms focus on price as their main competitive factor. A further analysis showed that 65% of high growth firms place greater importance on the ability to sell at the median price in the market compared with only 44% of other firms. No significant differences were found between both sets of firms on the importance of selling at the highest or lowest price in the market. This analysis also confirms that high growth firms have a lower emphasis on innovation, design and product variety compared with other firms.

Conclusions

This paper has investigated the drivers of high growth in manufacturing SMEs. The findings point to a number of important implications for manufacturing SMEs. Under pressure to turnaround flagging performance, and with limited scope for significant efficiency gains in operations, it appears that small firms that are not high growth performers (static or declining growth) see investment in new product research and development and the introduction of new products to the market as their primary realistic chance of facilitating turnaround. Arguably, however, this strategy may hold more risk than facilitating growth through other means. The findings of the study support the proposition that many SMEs have some difficulty converting research and development into effective innovation, that is to say, innovation that leads to positive return / high growth. High growth firms on the other hand, do not lose sight of the potential of existing products to satisfy current and future customer needs, and accordingly tend to place a higher degree of emphasis on augmenting the tried and tested product offering.

The main conclusion we draw from our findings however, is that innovation does not influence high growth in the manufacturing firms examined.

The findings of the study suggest that high growth firms are sales orientated rather than innovation orientated. An examination of the findings relating to *the operating environment*, *firm ownership*, and *competitive factors* indicates a high degree of alignment between traits of the "prospector" strategic orientation and factors driving high growth in manufacturing SMEs. The vast majority of high growth small firms in our study regarded themselves as prospectors, rather than defenders, analysers or reactors. Our findings also suggest that external (industrial positioning) attributes – strategic orientation, environment and e-commerce - explain high growth performance in manufacturing SMEs more than internal (RBV) attributes.

Our findings, however, have important managerial implications for high growth manufacturing SMEs. The trade-offs embodied in the dominant sales-oriented business strategy that is apparent in our sample of high growth small firms does raise questions about the sustainability of high growth performance. This business strategy seems to have worked over the past three years – but will it continue to work ?. It is important to note that the high growth small firms in our study were not totally devoid of investment in research and development and new product introductions. Rather, the emphasis on these practices compared to other small firms in the study is much lower. Nevertheless, products will inevitably reach the maturity stage in their life-cycles. Moreover, product life-cycles, not least in the electronics sector under study here, are shortening. Arguably therefore, there is a limit to the gains that can be derived from incremental improvements in the technical and functional properties of existing products. Add to this the high growth small firms' lack of concern with meeting technological changes in processes, and the fact that technologies enabling e-commerce and business transactions on the internet are relatively low cost and easily and quickly available to all firms, and the longevity of the high growth performance appears questionable. While high growth firms have increased their sales by over 30% during the past three years or longer, it is questionable if manufacturing firms can sustain their competitive advantage without recourse to greater research and development, and innovation in the longer term.

REFERENCES

Acs, Z.J., and Audretsch, D.D., (1988), Innovation in large and small firms: an empirical analysis, American Economic Review, Vol. 78, pp. 678-90.

Ahuja, G., and Katila, R., (2001), Technological Acquisitions and the Innovation Performance of Acquiring Firms: A Longitudinal Study. Strategic Management Journal, 22(3), pp. 197-220.

Amabile, T.M., Conti, R., Coon, H., Lazenby, J., and Herron, M., (1996), Assessing the work environment for creativity, Academy of Management Journal, 39, pp.1154-84.

Amit, R. and P. Schoemaker (1993), 'Strategic assets and organizational rent', Strategic Management Journal, 14 (1), pp. 33-46.

Amit, R. and Zott, C. (2001) 'Value creation in e-business', Strategic Management Journal, Vol. 22, No. 6–7, pp. 493–520.

Avolio, B., Yammarino, F.J., and Bass, B.M., (1991), Identifying common methods variance with data collected from a single source: an unresolved sticky issue, Journal of Management, 17, pp. 571-587.

Banbury, C., and Mitchell, W., (1995), The effect of introducing important incremental innovations on market share and business survival, Strategic Management Journal, 16, Special Issue; pp. 161-182.

Barkham, R., Gudgin, G., Hart, M. and Hanvey, E., (1996), The Determinants of Small Firm Growth: An Inter-regional Study in the United Kingdom 1986-1990, Jessica Kingsley London.

Barnett, W., and Burgelman, R. (1996), 'Evolutionary perspectives on strategy', Strategic Management Journal, Vol. 17, pp. 5-19.

Barney, J.B., (1995), Looking inside for competitive advantage, Academy of Management Executive, vol.9, no. 4, p.56.

Barney, J.B. (1986), 'Strategic factor markets: expectations, luck and business strategy', Management Science, Vol.32, No.10, pp. 1231-1241.

Barney, J.B. (1991), "Firm Resources and Sustained Competitive Advantage," Journal of Management, 17 (1), 99-120.

Barney, J. (2001). Gaining and Sustaining Competitive Advantage, 2nd ed., New Jersey: Prentice-Hall.

Barringer, B.R., F.R. Jones, and P.S. Lewis, (1998). "A Qualitative Study of the Management Practices of Rapid-Growth Firms and How Rapid-Growth Firms Mitigate the Managerial Capacity Problem," Journal of Developmental Entrepreneurship 3(2), 97-122.

Bertrand, M., and Schoar, A., (2003), Managing with Style: The effects of managers on firm policies, Quarterly Journal of Economics, pp. 1169-1208.

Bouwman, H., (1999), E-commerce: Cyber and Physical Environments, In: Schmid, Beat F.; Klein, Stefan; Steinfield, Charles; Selz (Editor), Dorian; Buchet, Brigette: EM - Electronic Commerce in the Americas& Local versus Global Electronic Commerce. EM - Electronic Markets, Vol. 9, No. 2, 02/99

Bowman, E.H., and Helfat, C.E., (2001), Does corporate strategy matter?, Strategic Management Journal, vol.22, no.1, pp.1-24.

Carr, N.G., (1999), The Economics of customer satisfaction, Harvard Business Review, Vol. 77, No. 2, pp. 15-18.

Chattopadhyay, P., Glick, W.H., Miller, C.C., and Huber, G.P., (1999), 'Determinants of executive beliefs: comparing functional conditioning and social influence', Strategic Management Journal, Vol. 20 pp 763-789.

Christensen, Clayton M., and Joseph L. Bower (1996). "Customer Power, Strategic Investment, and the Failure of Leading Firms", Strategic Management Journal, 17(3), 197-218.

Christensen, Clayton M., (1997), The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail. Harvard Business School Press.

Conant, J.S., M.P. Mokwa and P. Varadarajan, (1990), "Strategic Types, Distinctive Marketing Competencies and Organizational Performance: A Multiple Measures-Based Study." Strategic Management Journal , 11, pp. 365-383.

Connor, T., (1999), 'Customer-led and market-orientated: A matter of Balance', Strategic Management Journal, Vol. 20, pp. 1157-1163.

Crant, J.M., (2000), 'Proactive Behaviour in Organizations'. Journal of Management, 26(3), pp. 435-462.

Delmar, Frederic, and Per Davidsson (1998). "A Taxonomy of High-Growth Firms," in Frontiers of Entrepreneurship Research. Ed. Paul D. Reynolds, William D. Bygrave, Nancy M. Carter, Sophie Manigart, Colin M. Mason, G. Dale Meyer, and Kelly G. Shaver. Wellesley, MA: Arthur M. Blank Center for Entrepreneurship, Babson College, pp. 399-413.

Demetz, H., and Lehn, K., (1985), The Structure of corporate ownership: cases and consequences, Journal of Political Economy, 93, pp. 1155-1177.

Dess, G.G., G.T. Lumpkin and J.G. Covin (1997), 'Entrepreneurial Strategy Making and Firm Performance: Tests of Contingency and Configurational Models', Strategic Management Journal, 18, pp. 677-695.

Dierickx, I., & Cool, K., (1989), Asset stock accumulation and the sustainability of competitive advantage. Management Science, 35, pp. 1504-1511.

Dougherty, D., Hardy, C, (1996), 'Sustained product innovation in large, mature organizations: overcoming innovation-to organization problems', Academy of Management Journal, 39, pp. 1120-53.

DTI (2000). Statistical News Releases, P/2000/561, August and P/2000/600, September.

Dutta, S., Bergen, M., and Levy, D.,(2002), "Price flexibility in channels of distribution: Evidence from scanner data," Journal of Economic Dynamics and Control, , Vol. 26(11), pp. 1845-1900, 9

Ehrhardt, O., and Nowak, E., (2003), The effects of IPOs on German family-owned firms; Governance changes, ownership structure and performance, Journal of Small Business Management, 41(2), pp. 222-232.

Eisenmann, T.R., (2002), The Effects of CEO Equity Ownership and firm diversification on risk taking, Strategic Management Journal, Vol. 23, No. 6, pp. 513-534.

Feeser, H. R., and Willard, G.E., (1990). "Founding Strategy and Performance: A Comparison of High and Low-Growth High-Tech Firms," Strategic Management Journal 11(2), pp. 87-98.

Fiol, M., (2001), Revisiting an identity-based view of sustainable competitive advantage, Journal of Management, 6, pp. 691-699.

Fischer E., and Reuber, A.R., (2003), "Public support for rapid growth firms: A comparison of the views of founders, government policy makers and private sector resource providers", Journal of Small Business Management, 41(4), pp. 346-365.

Fleisher, C.S., and Bensoussan, B.E., (2003), Strategic and Competitive Analysis: methods and techniques for Analysing Business Competition, NJ:Prentice Hall.

Floyd, S.W., and Wooldridge, B., (1999), 'Knowledge Creation and Social Networks in Corporate Entrepreneurship: The Renewal of Organizational Capability', Entrepreneurship: Theory and Practice, Vol. 23, issue 3, p123

Frost, T.S., Birkinshaw, J.M., and Ensign, P.C., (2002), Centers of excellence in multinational corporations, Strategic Management Journal, 23(11), pp. 997-1018.

Ghemawat, P. & Khanna, T. (1998), "The Nature of Diversified Business Groups: A Research Design and Two Case Studies," Journal of Industrial Economics, Vol. 46 (1) pp. 35-61.

Giaglis, G.M., Paul, R.J. and Doukidis, G.I., (1999), Assessing the Impact of Electronic Commerce on Business Performance: A Simulation Experiment, In: Schmid, Beat F.; Strader, Troy J.; Walstrom, Kent A.: EM - Highlights of the 1998 AIS Americas Conference Mini-Track on Electronic Commerce. EM - Electronic Markets, Vol. 9, No. 1, 02/99

Gioia, D.A., and Chittipeddi, K., (1991), Sensemaking and sensegiving in strategic change initiation, Strategic Management Journal, Vol. 12, no 6, pp. 433-448.

Glynn, M.A., (1996), Innovative genius: A framework for relating individual and organizational intelligences to innovation, The Academy of Management Review, 21(4), pp. 1081-1111.

Grant, R.M., (2002), Contemporary Strategic Analysis, 4th ed., Oxford: Blackwell Publishers.

Hansen, G., and Wernerfelt, B., (1989), "Determinants of firm performance: the relative importance of economic and organizational factors", Strategic Management Journal, 10(5), pp. 399-511.

Harrison, J.S., (2003), Strategic Management of resources and relationships, New York: John Wiley

Hart, S., (1992), A integrative framework for strategy-making processes, Academy of Management Review, 17, pp. 327-352.

Hawawini, G., Subramanian, V., and Verdin, P., (2003), Is performance driven by industry or firm-specific factors?, A new look at the evidence, Strategic Management Journal, Vol.24, No.1, pp. 1-16.

Henderson, R., & Cockburn, I., (1994), Measuring competence? Exploring firm effects in pharmaceutical research. Strategic Management Journal, 15(S2), pp. 63-84.

Hill, C. W. L., & Snell, S. (1989), Effects of ownership structure and control on corporate activity. Academy of Management Journal, 32, pp. 25-46.

Hillman, A.J., and Keim, G.D., (2001), 'Shareholder value, stakeholder management, and social issues: What's the bottom line?', Strategic Management Journal, Vol. 22, No. 2, pp. 125-140.

Hitt, M, Hoskisson, E, Johnson, R, Richard, A, Moesel, D.D, (1996), "The market for corporate control and firm innovation", Academy of Management Journal, 39, pp. 1084-1119.

Hormozi, A., Harding, W., and Bose, U, (1998), "Is the Internet Feasible and Profitable for Small Businesses?", SAM Advanced Management Journal, Vol. 63 No. 3, pp. 20.

Hoskisson, R.E., Hitt, M.A., and Ireland, R.D., (2004), Competing for Advantage, Thomson: South-Western.

Jackson, S. E., and Dutton, J. E., (1988), 'Discerning threats and opportunities', Administrative Science Quarterly, Vol. 33, pp. 370-387.

James, WL., and Hatten, K.J., (1995). "Further Evidence on the Validity of the Self-Typing Paragraph Approach: Miles and Snow Strategic Archetypes in Banking," Strategic Management Journal, 16, pp. 161-168.

Iacovou, C.L., Benbasat, I., & Dexter, A.S., (1995), Electronic Data Interchange and Small Organizations: Adoption and Impact of Technology, MIS Quarterly, Vol. 19, No. 4, pp.465-485.

Kanter, R.M., (1999), 'From spare change to real change: The social sector as Beta site for business innovation', Harvard Business Review, Vol. 77 No.3, pp. 122-132.

Ketchen, D.J., Thomas, J.B., Snow, C.C., (1993), "Organizational configurations and performance: a comparison of theoretical approaches", Academy of Management Journal, 36(6), pp. 1278-313.

Lang, J.R. Calantone, R.J. and Gudmundson, D. (1997) 'Small firm information seeking as a response to environmental threats and opportunities', Journal of Small Business Management, Vol. 35, No. 1, pp. 11-23.

Lengnick-Hall C.L., and Wolff, J.W., (1999), 'Similarities and contradictions in the core logic of three strategy research streams', Strategic Management Journal, Vol. 20, pp. 1109-1132.

Leonard-Barton, D., (1992), Core capabilities and core rigidities: A paradox in managing new product development, Strategic Management Journal, Vol. 13, pp. 111-125.

Li, M., and Simerly, R.L., (1998) The Moderating effect of environmental dynamism on the ownership and performance relationship, Strategic Management Journal, Vol. 19, No. 2, pp. 169-179.

Linder, J.C., Jarvenpaa, S., and Davenport, T.H., (2003), Towards an innovation sourcing strategy, MIT Sloan Management Review, Vol. 44 No. 4, p. 43(7)

Litz, R.A., (1995), The family business: towards definitional clarity, Proceedings of the Academy of Management Conference 1995, pp.100-104.

Lorenzoni, G., and Lipparini, A., (1999), The leveraging of interfirm relationships as a distinctive organisational capability: A longitudinal study, Strategic Management Journal, 20, pp. 317-338.

March, James G., and Robert I. Sutton, (1997), "Organizational Performance as a Dependent Variable," Organization Science, Vol. 8(6), pp. 698-706.

Markides, C., (1998), 'Strategic Innovation in Established Companies', Sloan Management Review, Vol. 40 (Spring), pp. 31-42.

Mescon, M.H., Bovee, C.L., and Thill, J.V., (2002), Business Today, 10th ed., Prentice Hall: Upper Saddle River, NJ.

McEvily, S.K., Eisenhardt, K.M.m and Prescott, J.E., (2004), The global acquisition, leverage, and protection of technological competencies, Strategic Management Journal, Vol. 25, pp. 713-722.

McGahan, A.M., and Porter, M.E., (1997), How much does industry really matter?, Strategic Management Journal, Vol. 18, Summer Special Issue, pp 15-30.

McGee, J.E., and M.J. Dowling (1994). "Using R & D Cooperatives to Leverage Managerial Experience: A Study of Technology Intensive New Ventures", Journal of Business Venturing, Vol. 9, pp. 33-48.

McGrath, R. G., MacMillan, I. C., and Venkataraman, S., (1995), Defining and developing competence: A strategic process paradigm, Strategic Management Journal, 16, pp. 251-275.

McKee, D.O., Varadarajan, P.R., Pride, W.M., (1989), "Strategic adaptability and firm performance: a market-contingent perspective", Journal of Marketing, 53, July, pp. 21-35.

McNamara, G., Vaaler, P.M., and Devers, C., (2003), The search for hypercompetition, Strategic Management Journal, Vol.24, No.3, pp.261-78.

Mezias, J.M., and Starbuck, W.H., (2003), Studying the accuracy of managers' perceptions: A research odyssey, British Journal of Management, Vol. 14, pp. 3-17.

Miles, R.E. and Snow, C.C., (1978), Organizational strategy, structure, and process. New York: McGraw-Hill.

Miller, D., (1987). The structural and environmental correlates of business strategy. Strategic Management Journal, 8(1): 55-76.

Mone, M.A., McKinley, W., Bargar, V.L., (1998), 'Organizational decline and innovation: a contingency framework', Academy of Management Review, No. 23, pp. 115-132.

Nair, A., and Kotha, S., (2001), Does group membership matter?, Evidence from the Japanese steel industry, Strategic Management Journal, vol.22, no.3, pp. 221-35.

Naman, J. and D. Slevin, (1993). 'Entrepreneurship and the Concept of Fit: A Model and Empirical Tests', Strategic Management Journal, 14(2), pp.137-153.

Nicholls-Nixon, C., Cooper, A.C., and Woo, C.Y. (2000). Strategic experimentation: Understanding change and performance in new ventures. Journal of Business Venturing, 15, pp. 493-521.

Peteraf, M. A. (1993). "The cornerstones of competitive advantage: A resource-based view", Strategic Management Journal. 14 (3), pp. 179-191.

Pickle, H.B., and Abrahamson, R.L., (1976), Small Business Management, NY:Wiley and Sons.

Poon, S. and Swatman, P.M.C., (1997), Emerging Issues on Small Business Use of the Internet: 23 Australian Case Studies. School of Information Technology, Swinburne University of Technology, Australia.

Porter, M. E. (1998) On Competition, Harvard Business School, Boston, Massachusetts.

Quelin, B., (2000), 'Core competencies, R&D management and partnerships', European Management Journal, Vol.18 No.5 p476.

Ramanujam, V., Venkatraman, N., and Camillus, J., (1986), 'Multi-objective assessment of effectiveness of strategic planning: a discriminant analysis approach', Academy of Management Journal, Vol.29, No.2, pp. 347-372.

Roberts, P.W., (1999), Product innovation, product-market competition and persistent profitability in the U.S. pharmaceutical industry, Strategic Management Journal, Vol. 20, No. 7, pp. 655-670.

Rugman, A.M., and Verbeke, A., (1987), Does competitive strategy work for small business? Journal of Small Business and Entrepreneurship, Vol. 5, No. 3, pp. 45-50.

Salancik, G. R., and Pfeffer, J., (1980), The effects of ownership and performance on executive tenure in U.S. corporations. Academy of Management Journal, 23: 653-664.

Schendel, D., (1996), 'Evolutionary perspectives on strategy', Strategic Management Journal, Vol. 17, pp. 1-4.

Schoenecker, T. S., and Cooper, A. C. (1998),"The role of firm resources and organizational attributes in determining entry timing; A cross-industry study", Strategic Management Journal, 19, pp. 1127-1143.

Schroeder, R.G., Bates, K.A., and Junttila, M.A., (2002), 'A Resource-based view of manufacturing strategy and the relationship to manufacturing performance', Strategic Management Journal, Vol. 23, pp. 105-117.

Senge, P.M., and Carstedt, G, (2001), Innovating Our Way to the Next Industrial Revolution, MIT Sloan Management Review, 42 (Winter 2001): 24-38.

Sexton, D.L., and R.A. Smilor, (Eds.) (1997). Entrepreneurship 2000. Chicago, Ill.: Upstart Publishing.

Shoham, A., and Fieganbaum, A., (2002) Competitive determinants of organizational risk-taking attitude: the role of strategic reference points, Management Decision, Vol. 40 No. 2, pp. 127-141.

Shortell, S.M. and Zajac, E.J. (1990). Perceptual and archival measures of miles and Snow's strategic types: A comprehensive assessment of reliability and validity. Academy of Management Journal, 33, pp. 817-832.

Shrader, C., Mulford, C., Blackburn, V., (1989), 'Strategic and operational planning, uncertainty, and performance in small firms', Journal of Small Business Management Vol.27, No. 4, pp. 45-60.

Slater, S.F. and E.M. Olson (2000). 'Strategy Type and Performance: The Influence of Sales Force Management', Strategic Management Journal, Vol. 21, pp. 813-829.

Spanos, Y.E., and Lioukas, S., (2001), An examination unto the causal logic of rent generation: Contrasting Porter's Competitive Strategy Framework and the Resource-based Perspective, Strategic Management Journal, Vol. 22, No 10, pp. 907-934.

Stopford, J., (2001), Should strategy makers become dream weavers?, Harvard Business Review, Vol. 79, No.1, pp. 165-169.

Storey D., (1994), Understanding the Small Business Sector, London: Routledge.

Stuart, T.E., and Podolny, J.M., (1996), Local search and the evolution of technological capabilities, Strategic Management Journal, 17(SSI), pp. 21-38.

Teece, D.J., Pisano, G., and Shuen, A., (1997), 'Dynamic capabilities and strategic management', Strategic Management Journal, Vol. 18, pp. 509-533.

Turban, E. King, D., Lee, J. and Chung, H., (2002), Electronic Commerce: A Managerial Perspective. Upper Saddle River, NJ Prentice-Hall, Inc.

Variyam, J.N., and Kraybill, D.S., (1993), Small firm's choice of business strategies, Southern Economic Journal, Vol. 60 No. 1, p. 136(10).

Wernerfelt, B. (1984). A resource based view of the firm, Strategic Management Journal, 5, pp. 171-180.

Westphal, J.D., and Frederickson, J.W., (2001), Who directs Strategic Change? Director experience, the selection of New CEOs, and change in corporate strategy, Strategic Management Journal, Vol. 22, no 12, pp. 1113-1138

Zahra, S.A. (1991) 'Predictors and Financial Outcomes of Corporate Entrepreneurship' Journal of Business Venturing, 8, pp. 319-340.

Zahra, S.A., and Pearce, J.A., (1990), Research evidence on the Miles & Snow typology, Journal of Management, Vol. 16, No.4, pp. 751-768.

Zahra, S.A., Nielsen A.P., and Bognar, W.C., (1999), 'Corporate entrepreneurship, knowledge and competence development', Entrepreneurship: Theory and Practice, Vol. 23, No.3, pp. 169-189.

Zenger, T., and Hesterly, W.S., (1997), The disaggregation of corporations: selective intervention, high-powered incentives and molecular units, Organisation Science, Vol. 8, pp. 209-222.

Zott, C., (2003), Dynamic capabilities and the emergence of intra industry differential firm performance: Insights from a simulation study, Strategic Management Journal, Vol. 24, No 2, pp. 97-126.