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## DYNAMIC RESOURCE-BASED VIEW OF ENTREPRENEURIAL FIRM GROWTH An Integrative Theory of Sustainable Growth

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**DYNAMIC RESOURCE-BASED VIEW OF ENTREPRENEURIAL FIRM  
GROWTH**  
**An Integrative Theory of Sustainable Growth**

(Spine title: A Theory of Sustainable Entrepreneurial Growth)

(Thesis Format: Monograph)

*by*

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2

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Graduate Program  
In Business Administration

Submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy

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London, Ontario, Canada

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# DYNAMIC RESOURCE-BASED VIEW OF ENTREPRENEURIAL FIRM GROWTH

## An Integrative Theory of Sustainable Growth

### *Abstract*

In this dissertation, I develop a theory of the sustainable growth of entrepreneurial firms by looking into the growth process and resource dynamics of new venture development. In so doing, I address the research question: "Why do some entrepreneurial firms grow sustainably through different stages of growth while others do not?"

First, I develop an *a priori* theoretical model building upon the resource-based view, the attention-based view and the system dynamics perspective. The core of the proposed framework is a three-dimensional dynamic resource pyramid with four vertices (forces) which represent the resource bundles most salient during early firm growth: strategic, financial, human, and organizational resources. Using this model, I illustrate entrepreneurial firm growth as the interaction among four forces and argue that its sustainability depends on the dynamic balance among these forces. This *a priori* theoretical model guides the theory building process.

Next, I develop a theory of the sustainable growth of entrepreneurial firms using a comparative multi-case methodology, which builds synergistically upon the strengths of several methodological approaches (e.g., Glaser & Strauss, 1967; Yin, 1984; 2003; Straus, 1987; Eisenhardt, 1989; Strauss & Corbin, 1990). With this approach, I extract constructs from the data and identify systematic interrelationships among them. I also modify the *a priori* theoretical model based on new findings. Consequently, I propose a set of falsifiable research propositions.

This study makes several important contributions to the literature. The proposed theory provides the foundation of a meaningful research program on entrepreneurial firm growth. It helps close the gap between the mainstream resource-based view and entrepreneurship research, adding to the growing body of dynamic resource-based view research. Finally, the study complements the extant literature on firm growth by addressing a main gap in the literature.

The proposed theory also has important managerial implications. Practicing entrepreneurs will benefit from using the proposed dynamic resource pyramid as the cognitive foundation for developing their growth strategy. Entrepreneurs should constantly monitor all elements of their resource pyramid and coordinate these resources in such a way as to support firm growth. Sustainable firm growth can only be achieved when growth in every dimension is dynamically balanced and synchronized.

**Keywords:** Entrepreneurial firm growth; Growth dynamics; Resource-based view; System dynamics perspective; Case study research; Grounded theory building

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## CHAPTER 1: INTRODUCTION

Growth is not necessarily a goal of the firm *per se*, but growth *is* critical for managing revenues and costs, developing talent, attracting capital, and so forth. In short, corporate growth is closely related to the value creation and the likelihood of long-term survival (Canals, 2000). As such, growth is a relevant topic for management studies. Growth is even more relevant to the study of entrepreneurial firms. The potential for growth is one of the factors that distinguish entrepreneurial firms from conventional small businesses, such as convenience stores (Wickham, 2001). Growth is critical to entrepreneurial success and many entrepreneurs are motivated by growth potential.

Yet, growth can be a mixed blessing (Flamholtz & Randle, 1987). Most entrepreneurial firms fail to grow; and many of those that do manage to grow initially, fail to sustain this growth over time. Growing pains emerge when a firm's growth outstrips its organizational and administrative resources (Formbrun & Wally, 1989; Slatter, 1992). In many cases, it is the growth itself, or more accurately, the size that a growing firm reaches, that unbalances the firm's configuration, triggers a major growth-related crisis, and takes the firm into turbulent growth periods (Wiklund, 1998). Firms that cannot transform themselves through such periods of crisis are likely to fail to sustain their growth or even collapse (Greiner, 1972; Flamholtz, 1986). In other words, they simply grow to fail.

But why do some entrepreneurial firms grow sustainably through different stages of growth while others do not? This is the research question that guides this dissertation. By addressing this theoretical question, I aim to answer the following normative

question: How can entrepreneurial firms avoid growth crises and sustain growth over time?

Management scholars have paid considerable attention to the theory of firm growth inspired by Penrose (1959; cf. Kor & Mahoney, 2000). Penrose (1959) defined a firm as a bundle of resources, and viewed firm growth as the pursuit of productive opportunities that are created, and at the same time limited, by the human and non-human tangible and intangible resources under the firm's administrative framework. She also suggested that it is an entrepreneur's (or a manager's) task to recognize these productive opportunities.

Although the extant literature has extended Penrose's legacy building upon her resource-based approach, as I will argue in Chapter 2, some of the key attributes of her theory, e.g., that a firm is a "system" consisting various bundles of resources, that firm growth is a "process" involving the resource system, and that this process is dependent upon the entrepreneur's managerial cognition, have not received full scholarly attention. In sum, more conceptual and empirical research needs to be done on the paths and the effects of different sequences in the growth process; that is, growth dynamics (Kor & Manhoney, 2000).

In this dissertation, I develop a theory of the sustainable growth of entrepreneurial firms by looking into the growth process and resource dynamics of new venture development. In so doing, I extend Penrose's theory of firm growth by indentifying key mechanisms of entrepreneurial firm growth and revealing how these mechanisms are maintained or otherwise broken down as a firm grows. I contend that we need a separate theory of sustainable entrepreneurial firm growth, for at least three reasons:

entrepreneurial firms are different, entrepreneurial firm growth is critical to economic development and job creation, and entrepreneurial firms are inherently fragile. Each of these characteristics is discussed in the following section.

## **1.1. Need for Theoretical Understanding of Entrepreneurial Firm Growth**

### *1.1.1. Difference of entrepreneurial firms*

Entrepreneurial firms are different in many ways from the relatively large and complex firms that have been the focus of most Penrosean-based research. They are not just a miniature of large and complex firms. Penrose noted that the differences in the administrative structures of the very small and very large firm are so great that in many ways it is hard to see that the two species are of the same genus.<sup>1</sup> Small and large firms possess fundamentally different resources and capabilities (Dean, Brown, & Bamford, 1998).

Even within the sector of small firms, it is well accepted that innovative and growth-oriented entrepreneurial ventures require different resources from slow growth, small niche firms. Researchers must study the early phase of building a resource base to understand how an entrepreneurial firm's resource profile contributes to the firm's value-creating activities (Brush, Greene, & Hart, 2001).

### *1.1.2. Importance of entrepreneurial firm growth*

It is well-accepted that entrepreneurship is a crucial source of innovation and economic development (Schumpeter, 1934, Timmons & Spinelli, 2003) and there are many historical examples of entrepreneurship driving economic growth. These include

---

<sup>1</sup> Keynote Address, Stockholm World Conference of the International Council on Small Business, June 1996.

the rapid, early industrialization of the United States and United Kingdom, the economic transformation and growth of Eastern Europe since it abandoned communism, and the remarkable economic prosperity of the United States in the late 1990s (e.g., Busenitz, Gomez, & Spencer, 2000; Timmons & Spinelli, 2003).

Entrepreneurial firms in general, and high growth firms in particular, are a significant source of employment (e.g., Birch, 1979; Kirchoff & Phillips, 1988; Birley & Westhead, 1990; Reynolds & White, 1997). For example, high growth, small firms created 612,000 jobs in Canada between 1985 and 1999. In other words, 7 percent of the total number of firms in the private sector accounted for 123 percent of the net jobs created in the sector (Parsley & Dreesen, 2004). On the other hand, the UK's poor economic performance has been partly blamed on the fact that most small firms failed to grow into large firms (Storey, 1994: 159). I believe that developing a theory pertaining to sustainable firm growth is indeed an important scholarly task.

### *1.1.3. Fragility of entrepreneurial firms*

Entrepreneurial firms are inherently fragile (Slatter, 1992: 7). For one thing, entrepreneurial firms are vulnerable to various liabilities of newness (Stinchcombe, 1965; Freeman, Carroll, & Hannan, 1983) and smallness (Stinchcombe, 1965; Aldrich & Auster, 1986). Most entrepreneurial firms do not possess spare resources to buffer themselves from small mistakes and failures, or volatile environments (Van de Ven, Hudson, & Schroeder, 1984). Many firm-specific, non-tradable resources must be built internally, and this process usually takes time (Dierickx & Cool, 1989). Consequently, early stage entrepreneurial firms typically have limited resources (Cooper, Gimeno-Gascon, & Woo, 1994), little expertise (Forbes & Milliken, 1999), few managerial skills (Thornhill &

Amit, 2003), and limited knowledge bases (Burgelman, 1991). They are more likely to fail because they lack organizational legitimacy (Stinchcombe, 1965) and established systems and routines (Nelson & Winter, 1982), and have limited access to capital market (Pissarides, 1999). This is even more problematic in cases where entrepreneurial firms are trying to create new industries (Aldrich & Fiol, 1994).

For example, about 60 percent of US start-ups fail in their first six years and more than 70 percent fail in the first eight (Bhidé, 2000). The situation is similar in Canada. Only about 30 percent of new firms survive past six years in all commercial industries, according to Statistics Canada (Baldwin, Bian, Dupuy, & Gellatly, 2000). In sum, entrepreneurial firms are fragile and vulnerable. They deserve theoretically rich research questions and a well-grounded theory of the sustainable growth of entrepreneurial firms, which can be examined through rigorous and appropriate empirical designs (Ireland, Webb, & Coombs, 2005).

## 1.2. Research Design

The research design of this study is based on inductive theory building methodologies (e.g., Glaser & Strauss, 1967; Yin, 1984; 2003; Strauss, 1987; Eisenhardt, 1989; Strauss & Corbin, 1990). The theory building process is built upon methodological pluralism (Kor & Mahoney, 2000) and involves multiple combinatory iterations of theory-driven deduction and data-grounded induction (see Figure 1-1).<sup>2</sup> This process

---

<sup>2</sup> The whole process is similar to the concept of "logical compound synthesis" in the approach proposed by Itami and Numagami (1992):

*Just like chemists synthesize various materials into some chemical compounds that are new to the world, researchers of this approach pick up various theoretical concepts and empirical findings as materials and synthesize them into a plausible logical story. This approach derives its plausibility from the robust coherence among its component stories and reveals logical connections among conceptual constructs. In this approach, one says: there are many bits and pieces of evidence here and there, all of*

allows me to build upon the current literature and provide contextually grounded insights that can generate theory amenable to subsequent testing (Reuber & Fischer, 2005). This approach is particularly appropriate given that, although we can extract meaningful categories (constructs) from the extant literature, our theoretical understanding of the phenomenon (the relationships among constructs) is underdeveloped.

First, I develop an *a priori* theoretical model based on the extant literature on firm growth. The core of the proposed framework is a three-dimensional dynamic resource pyramid model that is built on resource-based logic, the attention-based view, and concepts adopted from the system dynamics perspective. I examine entrepreneurial firm growth as the interaction among four types of resource bundles (forces), using the proposed dynamic resource pyramid model, along with a longitudinal case study and several published case examples. Based on this growth model, I propose an integrative framework for the sustainable growth of entrepreneurial firms. This *a priori* theoretical model will be the beginning of the theory building process.

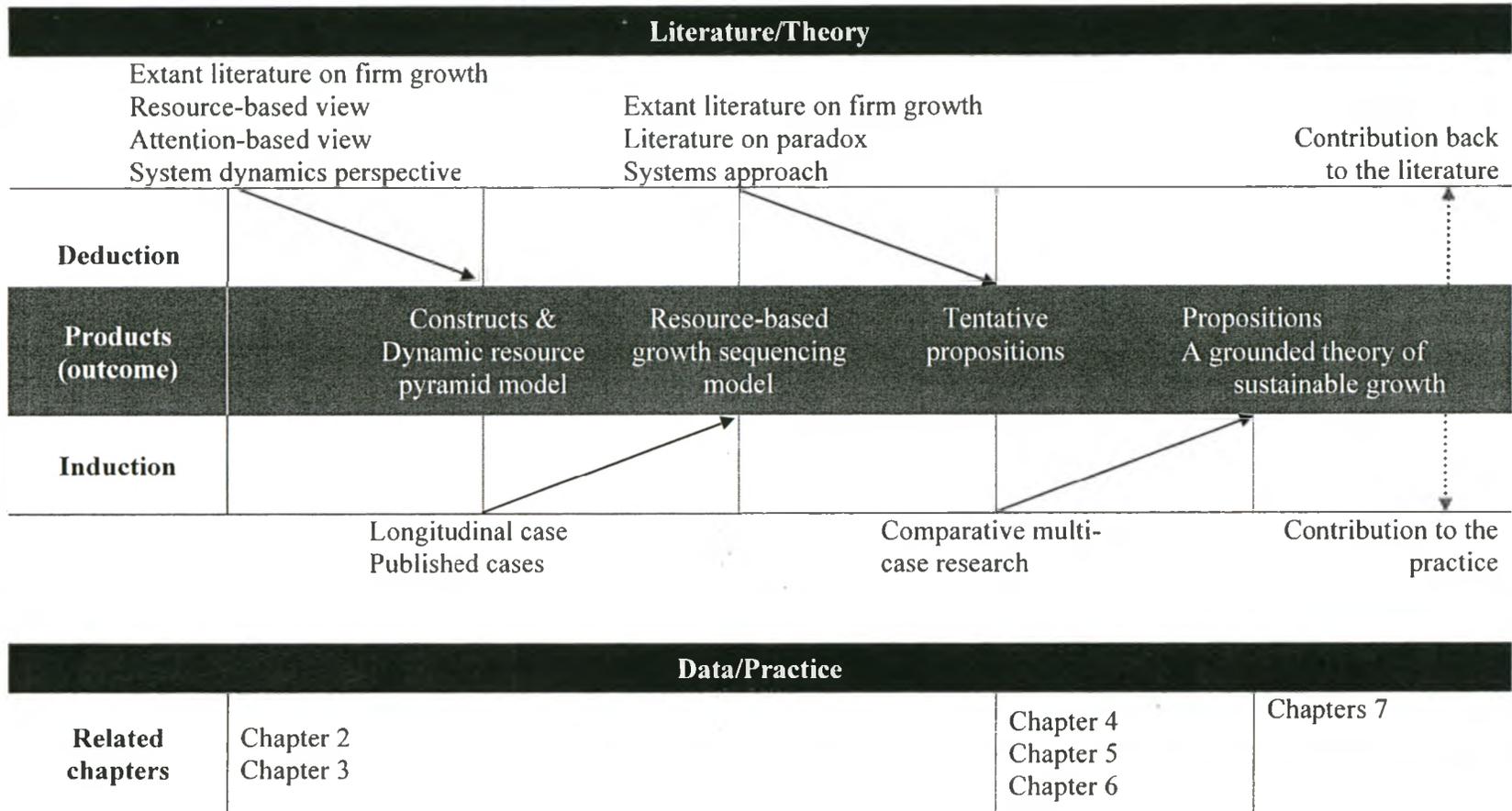
Next, I refine the theoretical model and develop a theory of sustainable growth of entrepreneurial firms using a comparative multi-case methodology. The integrative theory building methodology builds synergistically upon the strengths of several existing methodological approaches (e.g., Glaser & Strauss, 1967; Yin, 1984; 2003; Strauss, 1987; Eisenhardt, 1989; Strauss & Corbin, 1990). With this approach, I refine constructs and identify systematic interrelationships among them. Lastly, I propose a set of falsifiable research propositions and describe the measurement scheme for the constructs, in order to facilitate future research on this topic.

---

*which can be explained logically by a particular theoretical framework. Then, such a theory must have rather wide validity. The basic appeal of this methodology is again logic, although not mathematical (p. 133).*



**FIGURE 1-1**  
**Theory Building Process**



### 1.3. Research Questions

Two fundamental issues form the basis of this study: (1) Why do some entrepreneurial firms grow sustainably through different stages of growth while others do not? (2) How do rapidly growing entrepreneurial firms sustain that growth over time? Based on these anchoring questions, the *a priori* theoretical foundation (see Chapter 3) suggests several specific research questions that will be addressed in this dissertation:

*Research Question 1. What are the most salient resource bundles in the early growth of firms?*

*Research Question 2. Are there commonalities among the resource bundles that entrepreneurs identify as the most salient at the early stages of firm growth?*

These two questions are related to the constructs. Once the constructs are developed and refined, I question systematic relationships among these constructs:

*Research Question 3. How do these resource bundles interact<sup>3</sup> through the growth of entrepreneurial firms?*

*Research Question 4. What determines the sustainability of entrepreneurial firm growth?*

More specifically,

*Research Question 4-1. Are there systematic relationships among the resource bundles that enable or hinder sustainable firm growth?*

---

<sup>3</sup> In this study, the term "interaction" among various resource bundles denotes the feedback/feed-forward relationships among them.

#### 1.4. Structure of the Dissertation

The study described in this paper is an attempt to address a gap in the extant literature on entrepreneurial firm growth; it is an initial step toward a theory of the sustainable growth of entrepreneurial firms. Accordingly, this dissertation proceeds as follows. Chapter 2 reviews the extant literature on entrepreneurial firm growth and identifies a gap in the literature. The chapter follows to lay the theoretical foundations for the conceptual model building upon the original attributes of Penrose's (1959) theory of firm growth, i.e., resource-based view, systems approach, and managerial cognition-based perspective. Chapter 3 presents the *a priori* conceptual model. I extract constructs from the resource-based view literature, build a theoretical framework using a system dynamics perspective, and specify a tentative set of research propositions. Chapter 4 presents the research design for theory building, and Chapter 5 describes the qualitative data used for theory building. Chapter 6 discusses the qualitative data analysis and an emergent theory of the sustainable growth of entrepreneurial firms. Finally, Chapter 7 discusses the contributions and implications of this study and situates it in the broader context of the literature.

## CHAPTER 2: LITERATURE REVIEW

This chapter reviews the extant literature on (entrepreneurial) firm growth<sup>4</sup> in general, and the specific literature on which the *a priori* theoretical model is based. Section 2.1 identifies and critically reviews two major streams within the literature on entrepreneurial firm growth. This section also identifies some important research gaps and situates the current study in the literature. In Section 2.2, I briefly discuss the specific literature that provides the theoretical foundations for the conceptual model.

### 2.1. Extant Literature on Firm Growth

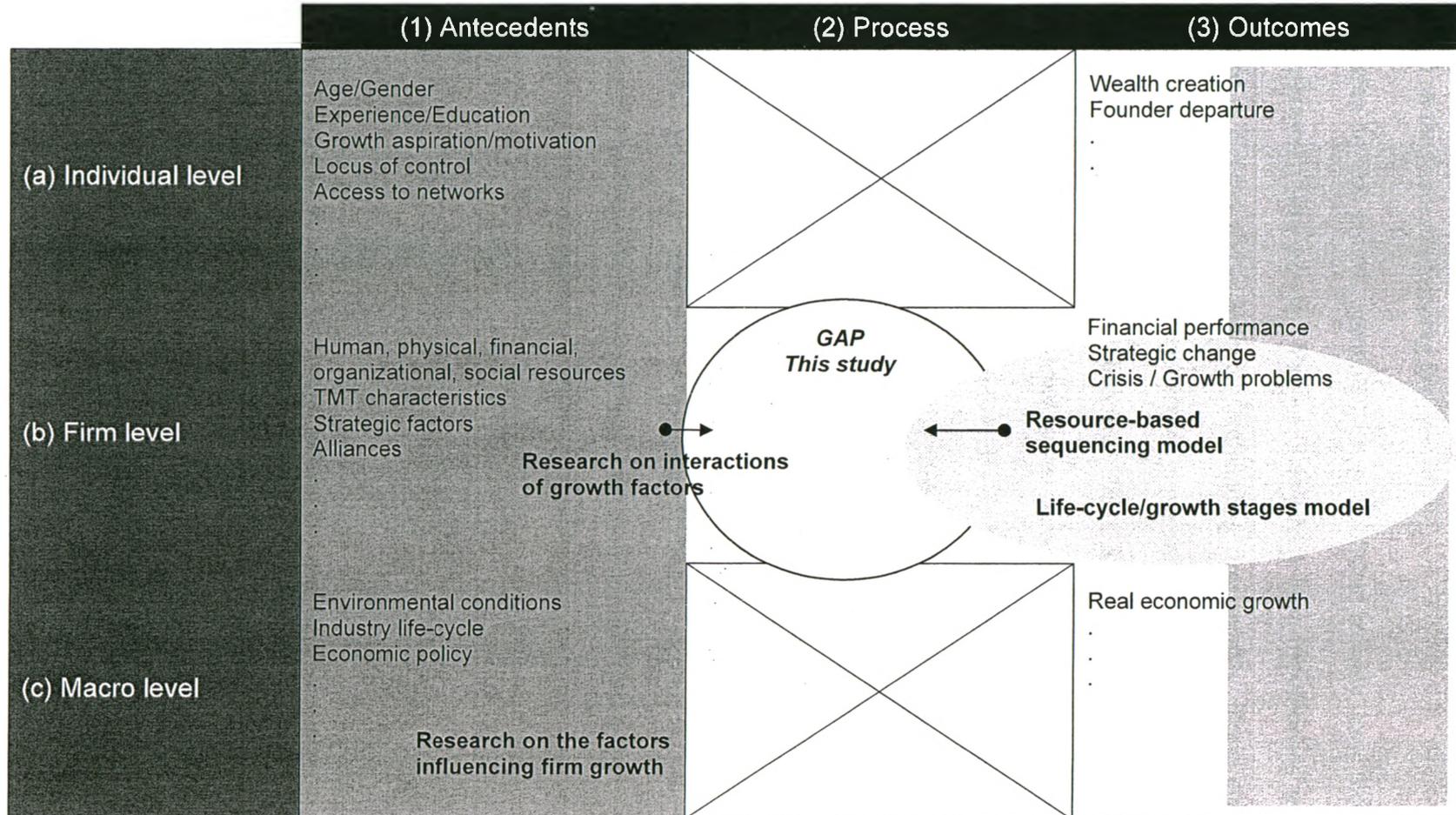
The theories and models that are potentially helpful for explaining firm growth include industrial organization (IO) economics, evolutionary theories, and business strategy models (cf. Bhidé, 2000: 238-259). An extensive review of the literature<sup>5</sup> revealed two broad streams of research on firm growth: (1) research on the factors (antecedents) influencing firm growth; and (2) life cycle/growth stages models, which be discussed in detail in the subsequent sections. A map of the literature on firm growth is illustrated in Figure 2-1.

---

<sup>4</sup> The literature review in this study included research dealing with firm growth in general, but excluded studies that focused on large firm growth (e.g., Nobeoka & Cusumano, 1997; Cho & Pucik, 2005).

<sup>5</sup> See Appendix 2-1 for a detailed description of the literature review approach used in this study.

**FIGURE 2-1**  
**Literature Map**



### *2.1.1. Research on the factors influencing firm growth*

Most studies on firm growth, particularly those published recently, have focused on the factors influencing firm growth. Various factors have been hypothesized and/or empirically tested as directly and/or indirectly influencing firm growth. These include individual-level factors such as founder's education, experience (e.g., Sapienza & Grimm, 1997; Lee & Tsang, 2001; Wiklund & Shepherd, 2003), and growth aspiration (e.g., Wiklund & Shepherd, 2003); organization-level factors such as firm-level resources (e.g., Cooper, Gimeno-Gascon, & Woo, 1994; Bamford, Dean, & McDougall, 2000; Bruton & Rubanik, 2002; Watson, Stewart, & BarNir, 2003; Mishina, Pollock, & Porac, 2004) and strategies (e.g., McDougall, Robinson, & DeNisi, 1992; Baum, Locke, & Smith, 2001; Thornhill, 2006); and macro-level factors such as market/environment conditions (e.g., Eisenhardt & Schoonhoven, 1990; Brush & Chaganti, 1999; Robinson & McDougall, 2001; Park & Bae, 2004) and economic policy (e.g., Riding & Haines, 2001). The growth factors studied and measured in this literature are summarized in Table 2-1.

**TABLE 2-1**  
**Research on the Factors Influencing Firm Growth**

Research	Antecedents to firm growth			Growth Measure
	Individual level	Firm Level	Macro Level	
Eisenhardt & Schoonhoven (1990)		Founding team characteristics Technical innovation	Industry life cycle stage Competitive concentration	1988 Sales (Sales growth)
McDougall, Robinson, & DeNisi (1992)		Competitive strategies Venture origin	Industry structure	Sales growth
Willard, Krueger, & Freeser (1992)		Founder-manager status		Sampled high-growth firms
Siegel, Siegel, & MacMillan (1993)		TMT experiences Strategic profile		High-growth vs low-growth firms
Chandler & Hanks (1994)		Resource-based capabilities Fit of resource-based capabilities and strategies (Firm age)	Perceived market attractiveness	Perceived growth in market share Perceived change in cash flow Sales growth
Cooper, Gimeno-Gascon, & Woo (1994)		Human resources Financial resources		Employment growth (categorical measure: failure/survival/growth)
McDougall et al (1994)		Strategic breadth	Industry growth	Changes in sales (sales growth)
Denison & Mishra (1995)		Culture (involvement, consistency, adaptability, sense of mission)		Sales growth (subjective comparative measure, objective 3-year average)
Hansen (1995)		Networks (pre-founding entrepreneurial action set)		1 <sup>st</sup> year employment growth
Kotha & Nair (1995)		Competitive strategy: cost efficiency/asset parsimony/differentiation)	Environmental munificence Industry concentration Technological change	Absolute change in sales (sales growth)
Snell & Youndt (1995)		HRM practices (behavior/output/input control)		Sales growth (average of annual sales growth rates in 3-year period)
Zhao & Aram (1995)		External networks		Case studies (high-growth vs low-growth firms)
Boone, de Brabander, van Witteloostuijn (1996)	CEO locus of control	Strategic choice		Sales growth

Chaganti & Parasuraman (1996)	Gender			3-year employment growth
Mullins (1996)		Firm-level competence Prior performance	Market conditions	Growth decision (scenario-based self-response)
Peng & Heath (1996)		Network-based growth strategies	Transition economies	Conceptual work
Shane (1996)		Hybrid org forms		Growth in the number of outlets (log)
Dess, Lumpkin, & Covin (1997)		Entrepreneurial strategy making Competitive strategy	Environmental conditions (dynamic vs. stable)	Self-reported 5-year sales growth (1-7)
Greene & Brown (1997)		Resource needs (human, social, organizational, physical, financial)	Dynamic capitalism typology	Conceptual work (resource needs in dynamic capitalism typology)
Sapienza & Grimm (1997)	Education Experience ENT parents ENT orientation	Amount of planning Outside help	Economic environment	4-year employment growth
Slevin & Covin (1997)		Strategy formation patterns (planned vs. emergent) Organization structure	Hostile vs. benign environments	Sales growth (latest 3-year average rate of growth)
Wiklund (1998)	Attitudes	Entrepreneurial orientation Resources/capabilities	Perceived environment (dynamism, hostility, heterogeneity)	1-year sales and employment growth(%)
Brush & Chaganti (1999)		Human resources Organizational resources Strategy	(Benignness) (Industry growth rate)	3-year employment growth (log)
Lorenzoni & Lipparini (1999)		Network-related capabilities		Case study (growth not measured)
Pissarides (1999)			EBRD SME financing policy	Case studies (growth not measured)
Bamford, Dean & McDougall (2000)		Initial founding conditions (financial resources)		6-year sales and market share growth
Brush, Bromiley, & Hendrikx (2000)		Total cash flow Governance mechanisms		1-year compound sales growth rate
Chrisman & McMullan (2000)		Outsider assistance		3-year compound sales and employment growth
Covin, Slevin, & Heeley (2000)		Market pioneering Competitive tactics	Environment (benign vs. hostile)	3-year average rate of sales growth (industry adjusted)



Heneman, Tnasky, & Camp (2000)		Product breadth Market breadth HRM practices		Annual sales and employment growth
Nicholls-Nixon, Cooper, & Woo (2000)		Strategic experimentation	Environmental hostility	3-year sales growth
Stuart (2000)		Technology alliances		Sales growth rate
Zahra & Bogner (2000)		Technology strategy (Venture age, size) (Business scope) (Venture origin)	Dynamism Hostility Heterogeneity	Market share growth
Amit et al (2001)	Wealth attainment			Growth oriented venture creation
Baum, Locke, & Smith (2001)	Motivation Competences (Traits)	Competitive strategies (Size)	(Dynamism, munificence, concentration)	3-year sales/employment/profit growth (%)
Durand & Coeurderoy (2001)		Strategic orientation Order of entry Firm age		Sales growth
Gundry & Welsch (2001)	Strategic intentions Entrepreneurial intensity			High-growth vs. low-growth (sales growth)
Lee & Tsang (2001)	Education Experience Locus of control Networking activities			Self-reported 3-year cumulative Sales growth Profit growth
Riding & Haines (2001)			Economic policy (use of loan guarantee program)	Employment growth Sales growth
Robinson & McDougall (2001)		Product differentiation Venture strategy (Venture age) (Venture assets)	Entry barriers Industry life cycle stage	Sales growth (average annual sales growth in 3-year period)
West & DeCastro (2001)		Resource weaknesses and distinctive inadequacies		Conceptual work
Batt (2002)		HRM practices Quit rates		2-year sales growth rate
Bruton & Rubanik (2002)		Founding team size		Annual employment growth rate

Ensley, Pearson, & Amason (2002)		Innovativeness Market entry TMT cohesion Conflict -affective/cognitive		Sales growth (5-year cumulative growth)
Reuber & Fischer (2002)		Foreign sales TMT integration (Firm age)		2-year sales growth (%)
Zimmerman & Zeitz (2002)		Legitimacy		Conceptual work
Baum & Wally (2003)		Strategic decision speed Centralization Formalization (Firm size) (Past growth)	Dynamism Munificence	5-year sales growth (%) 5-year employment growth (%)
Collins & Clark (2003)		TMT social networks HRM practices (Firm size)		1-year lagged self-reported measure of sales growth
Davila, Foster, & Gupta (2003)		VC financing (Firm size, age)		Monthly employment growth
Florin, Lubatkin, & Schulze (2003)		Human resources Social resources Financial resources (IPO)		Sales growth (2-year change in sales after IPO)
Garg, Walters, Priem (2003)	CEO scanning emphasis		Environmental dynamism	Self-reported comparative sales growth (1-5)
Janney & Foltz (2003)		Private equity placements		Growth not measured
Kor (2003)		TMT experiences: Firm/industry specific and shared team-specific experiences (TMT size) (Firm age)		Annual rate of sales growth
Lee, Lee, & Lee (2003)		Exploration/exploitation of new technology		Simulation study (capital growth)
Watson, Stewart, & BarNir (2003)		Human capital Organizational demography Interpersonal processes (Firm size) (Firm age)		Subjective evaluation of growth
Wiklund, Davidsson, & Delmar (2003)	Motivation Expectations			Attitude toward growth (positive/negative)

Wiklund & Shepherd (2003)	Education Experience Growth aspiration	Knowledge-based resources Entrepreneurial orientation (Past performance) (Firm size) (Firm age)	Munificence Heterogeneity	Perceptual 3-year measure of growth in sales and employment relative to competitors
Bamford, Dean, & Douglass (2004)	(Initial financial capital)	TMT completeness Product breadth Risk position External BOD member	(Munificence, dynamism, competitive intensity)	Year 5 sales (sales growth)
Chang (2004)		VC financing Strategic alliances		Time to IPO
He & Wong (2004)		Balance between exploration & exploitation		Self-reported 3-year compound average sales growth rate
Mishina, Pollock, & Porac (2004)		Managerial growth logics – market/product expansion Resource slack Resource stickiness (Firm age)	(Munificence) (Dynamism)	2-year cumulative percentage sales growth
Park & Bae (2004)	Competences	TMT experiences Technology strategy	Domestic market size	3-year average sales growth (case studies)
Barringer, Jones, & Neubaum, 2005)	Education Experience Access to networks	Innovation, R&D Commitment to growth Growth-oriented mission HRM practices		3-year compound annual growth rate
Chrisman, McMullan, & Hall (2005)	(Prior experience)	Guided preparation		Age-controlled sales and employment at time T (sales and employment growth)
Cassar (2006)	Opportunity costs (current income, education, and experience)			Intended future growth
Lechner, Dowling, & Welpe (2006)		External networks (relational mix)		Time-to-break-even (growth speed)
Thornhill (2006)		Innovation, R&D Firm knowledge	Industry dynamism	Revenue growth
Walter, Auer, & Ritter (2006)		Network-related capabilities Entrepreneurial orientation		Sales growth

This stream of research has made important contributions to theory development and management practice. However, the antecedents considered in these studies are so diverse that there is little agreement on the finite and definitive set of factors affecting firm growth (Delmar, 1997; Weinzimmer, Nystrom, & Freeman, 1998). For example, some researchers find that certain factors are critical to firm growth; others find that these factors alone are not directly related to growth (e.g., Chandler & Hanks, 1994; Brush & Chaganti, 1999). For this reason, this research stream is often criticized for being fragmented (e.g., Wiklund, 1998).

This problem is partly because of the way firm growth has been conceptualized and operationalized. Firm growth has been conceptualized and measured in varying ways, for example, as relative/absolute growth or sales/employment/asset/profit growth; and over varying time spans (e.g., one, three, or five years) (Delmar, Davidsson, & Gartner, 2003; Shepherd & Wiklund, 2005). Researchers have found limited concurrent validity among different growth measures (Shepherd & Wiklund, 2005) and discovered that using different growth measures yields differing conclusions (Weinzimmer, Nystrom, & Freeman, 1998). Consequently, it is not always easy to compare and integrate findings from different studies (Wiklund, 1998; Shepherd & Wiklund, 2005).

Issues associated with conceptualizing and measuring growth are not likely to be resolved in the near future. However, researchers have made some progress toward resolving the fragmentation problem by developing and testing more inclusive and integrative conceptual models. Recently, an increasing number of scholars have incorporated multi-level factors in their studies of firm growth (e.g., Wiklund, 1998; Baum, Locke, & Smith, 2001; Wiklund & Shepherd, 2003; Bamford, Dean, & Douglas,

2004), either as focal constructs with direct and/or indirect effects on firm growth or as control variables. In addition, researchers have begun to shift their focus to the interrelationships among these factors. For example, Florin, Lubatkin, and Schulze (2003) studied 275 US ventures that went public during 1996. They found that human and social capital affect a venture's ability to raise financial capital during growth stages. Similarly, Stuart, Hoang, and Hybels (1999) found that interorganizational networks of young companies affect the ability of member firms to acquire the resources necessary to survive and grow. Studying the interactions among these factors in the *context* of firm growth, instead of focusing on their *direct effects* on firm growth, enables researchers to avoid the pitfalls of inconsistent growth measures. At the same time, this approach moves this stream of research closer to a more process-oriented study of growth dynamics, departing from the traditional view of firm growth as a dependent variable.

#### 2.1.2. *Life cycle/stage models of growth*

Conventional wisdom about the growth of small firms tends to focus on a stage model of growth (Slatter, 1992). A number of multi-stage models have been proposed, including some with three stages (e.g., Cooper, 1979), four stages (e.g., Quinn & Cameron, 1983; Hanks et al., 1993), and even five or more stages (e.g., Greiner, 1972; Adizes, 1979; cf. Kazanjian, 1988). The most commonly cited stage models of growth include those of Greiner (1972), Churchill and Lewis (1983), Quinn and Cameron (1983), and Kazanjian (1998), and these are summarized in Table 2-2. Although these models differ in detail, they share several common properties: (1) the stages are sequential in nature, (2) the stages occur as a hierarchical progression, and (3) the stages involve a broad range of organizational activities and structures (Quinn & Cameron, 1983).

**TABLE 2-2**  
**Life-Cycle/Stage Models of Growth**

Model	Start-up stage	Expansion stage	Maturity stage	Diversification stage	Decline stage
Greiner (1972)	1. Creativity – Leadership crisis	2. Direction – Autonomy crisis	3. Delegation – Control crisis	4. Coordination – Red tape crisis 5. Collaboration	
Churchill & Lewis (1983)	1. Existence 2. Survival 3(D). Success-Disengagement	3(G). Success-Growth 4. Take-Off	5. Resource maturity		
Quinn & Cameron (1983)	1. Entrepreneurial	2. Collectivity	3. Formalization	4. Elaboration of structure	
Miller & Friesen (1984)	1. Birth	2. Growth	3. Maturity	4. Revival	5. Decline
Smith, Mitchell, & Summer (1985)	1. Inception	2. High growth	3. Maturity		
Flamholtz (1987)	1. New Venture	2. Expansion	3. Professionalization 4. Consolidation	5. Diversification 6. Integration	7. Decline
Scott & Bruce (1987)	1. Inception 2. Survival	3. Growth 4. Expansion	5. Maturity		
Kazanjian (1988)	1. Conception & Development 2. Commercialization	3. Growth	4. Stability		
Adizes (1989)	1. Courtship 2. Infancy	3. Go-Go 4. Adolescence	5. Prime 6. Stable		7. Aristocracy 8. Early bureaucracy 9. Bureaucracy 10. Death

\* Adopted from Hanks *et al.* (1994) and Morse (1998)

Several important trends and issues in this stream of research are observed. First, life cycle/stage models of growth have not recently received much direct scholarly attention in terms of theoretical development and empirical research<sup>6</sup>. This despite the fact that these models are frequently referred to in the general growth literature (discussed in the previous section) as well as in other streams of research, such as organizational change literature. In short, these models have been understudied despite their rich managerial implications.

Second, most of these models are conceptual rather than empirical, with a few exceptions such as Miller and Friesen, 1984; Kajanzian and Drzain, 1989; Hanks et al., 1993; and Morse, 1998. The anecdotal reports and the models described are rich and suggestive, but they are not based upon strong empirical evidence gathered from longitudinal studies (Miller & Friesen, 1984). Scholars have focused on identifying different types of existing organizations or on identifying the static characteristics of organizations during different growth stages, rather than relying on longitudinal research designs (Quinn & Cameron, 1983).<sup>7</sup> Some scholars have recognized the dearth of theory (O'Farrell & Hitchens, 1988) in this field. They note that studies have not been built on conceptual common ground nor have we found a unifying discourse that can integrate our approach with mainstream theories of the firm and industry (Montgomery, 1995; Bhidé, 2000).

Other scholars suggest that these models are overly deterministic (Davidsson, 1991; Wiklund 1998). Entrepreneurs have differing attitude, motivation, or intention for growth (e.g., Storey, 1994; Cliff, 1998; Amit et al, 2001), and not all firms pass through

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<sup>6</sup> The most recent work identified in the initial search was Hanks et al (1993).

<sup>7</sup> Only exception in this literature review was Morse (1998). He examined Churchill and Lewis's (1993) model based on a longitudinal analysis of ethnographic data.

all the stages of the life cycle. The specific growth path varies for each firm and ventures evolve in unpredictable, idiosyncratic ways (Bhidé, 2002: 245). Equally successful firms can have different configurations at each stage (cf. Doty, Glick, & Huber, 1993). To this end, we need to take into account different developmental patterns and end-states of growth when we incorporate these models in any study of entrepreneurial firm growth (Wiklund, 1998).

Nonetheless, the life cycle/stage models of growth have been derived from observing the experiences of individual firms and, as such, they are useful as empirical generalizations that provide evidence on the early life of firms (Garnsey, 1998).

#### *2.1.3. Consequences of firm growth*

There is a third, albeit small and sporadic, stream of research that addresses the consequences of firm growth. This stream is represented by domains 3-a, 3-b, and 3-c in Figure 2-1. Some researchers have found that firm growth has significant implications for individual-level outcomes such as founder departure (Boeker & Karichalil, 2002); firm-level outcomes such as financial performance (e.g., Brush, Brommiley, & Hendrickx, 2000; Markman & Gartner, 2002) and strategic change (Boeker, 1997; Boeker & Wiltbank, 2005); and macro-level outcomes such as job creation (Kirchhoff & Phillips, 1988) and real economic growth (Shane, 1995). In addition, some researchers have used growth rate to distinguish entrepreneurs from small business managers (Begley, 1995).

#### *2.1.4. Discussion*

The literature review revealed significant trends in the study of entrepreneurial firm growth, as well as some important gaps (see Figure 2-1). First, as reviewed in



Section 2.1.1, most contemporary research has concentrated on the antecedents of firm growth (domains 1-a, 1-b, and 1-c in Figure 2-1), although recently the focus has shifted slightly to interactions among different factors. Second, growth stage models, by nature, deal with the general process of growth, but as discussed in Section 2.1.2, they do not particularly address the internal dynamics of firm growth. Rather, the central tenet of these models is that growth itself (or more accurately, the size that a growing firm achieves) is the contingency that unbalances the firm's configuration and triggers transformation into a new shape (Wiklund, 1998). In this sense, the life cycle/stage models research stream has been concentrated more on growth outcomes (domain 3-b in Figure 2-1) than growth processes (domain 2-b in Figure 2-1).

As such, the main gap in the literature is the lack of research on growth processes (domain 2-b in Figure 2-1), although there are a few studies that actually account for growth as a process that reveals itself over time (e.g., Morse, 1998). Researchers working in the field of entrepreneurship have noted that the most fruitful area of research might be the process of entrepreneurship itself (Low & MacMillan, 1988; Bygrave & Hofer, 1991; Stewart, 1991; Van de Ven, 1992; Bull & Willard, 1993). Firm growth is a process (Penrose, 1959) and should be understood as such. It is critical that we make sense of the growth process: the what, when, why, and how certain factors move the firm through different stages of growth (Morse, 1998).

This study addresses this important gap by developing a process-oriented theory of entrepreneurial firm growth, focusing on the internal dynamics of firm growth. In so doing, this study attempts to incorporate and integrate the findings from the extant literature, while addressing the criticisms and problems discussed in foregoing sections.

First, this study concentrates on the various firm-level factors influencing firm growth, which have been identified in the extant literature (Section 2.1.1; Section 2.2.2). These include strategic, financial, human, and organizational factors. In particular, this study looks at feedback/feed-forward relationships among these factors during the growth process. Moreover, this study conceptualizes the growth process as interactions among various growth dimensions, instead of conceptualizing firm growth in any particular way (e.g., as employment growth). By doing so, this study tries to resolve the issue of inconsistent growth measures at the conceptual level, rather than at the empirical level (cf. Shepherd & Wiklund, 2005).

Second, this study complements growth stage models by investigating the growth dynamics within each stage, as well as in the transition between stages. The development of the growth model in this study is greatly informed by earlier models, although my intention is not to explain the complete longitudinal sequence of the growth process. Rather, the stages in this model represent typified patterns of early firm growth observed along the growth process; they do not preclude different developmental patterns and end-states of growth.

In sum, this study aims to develop a finer-grained, empirically grounded process model of entrepreneurial growth that accommodates existing growth models, and which will consequently have greater explanatory power and wider applicability. In so doing, this study focuses on the internal dynamics of the resource system during the growth process; taking as given factors exogenous to firm growth, such as environmental conditions, and entrepreneurial motivations and intentions for growth.

## 2.2. Theoretical Foundation

As previously noted, this study aims to extend Penrose's (1959) theory of firm growth by looking into the growth process, and by indentifying key mechanisms of entrepreneurial firm growth. In so doing, it is important to acknowledge Penrose's original theoretical positions, i.e., resource-based view of the firm (in particular, the firm as a resource system) and focus on entrepreneur's cognition, and reflect upon the progress made in those research streams. Accordingly, the conceptual model of this study draws from four research streams, in addition to the extant literature on firm growth. These are the resource-based view, system dynamics perspective, configuration/fit approach and cognition-based research.

### 2.2.1. Resource-based view

The resource-based view defines resources broadly and inclusively:

*Firm resources are all assets, capabilities, competencies, organizational processes, firm attributes, information, knowledge, and so forth that are controlled by a firm and that enable the firm to conceive of and implement strategies designed to improve its efficiency and effectiveness (Barney, 2002).*

The firm's resources comprise everything from patents and brand names to creative talents and coordination skills (Black & Boal, 1994). These resources include management skills, organizational processes and routines, and information and knowledge (Barney, Wright, & Ketchen, 2001). Management scholars have identified four to six broad categories of resources that firms use to conceive of and implement their strategies. These are: financial, physical, human, and organizational capital (Barney, 2002; Barney & Arkan, 2002); technological capabilities (Hofer & Schendel, 1978;

Lichtenstein & Brush, 2001); and, more recently, social capital resources (Brush, Greene, & Hart, 2001; Ireland, Hitt, & Sirmon, 2003; Ireland, Webb, & Coombs, 2005).

Modern resource-based view research has focused on the competitive advantage conferred by resources that are valuable, rare, inimitable, and organizational (i.e., VRIO; see Barney, 2002). This contemporary research owes much to Penrose's (1959) seminal work. She concentrated on firm growth and used resources as the basic unit to conceptualize firm growth. Penrose (1959) defined the firm as a bundle of resources; a bundle of human and non-human resources under an administrative structure that provides the cohesive character of the firm. A firm's growth is a function of the unique bundle of resources that it possesses and deploys (Penrose, 1959). Unused productive resources create unique opportunities for growth, when coupled with changing managerial knowledge (Penrose, 1959; Castanias & Helfat, 1991; Henderson & Cockburn, 1994; Teece, Pisano, & Shuen, 1997). Configuring and reconfiguring types and combinations of resources are typical of the growth process (Penrose, 1959).

In line with the Penrosean (1959) perspective, researchers have found that firm-level human, physical, financial, organizational, and social resources greatly influence firm growth (e.g., Cooper, Gimeno-Gascon, & Woo, 1994; Greene & Brown, 1997; Bamford, Dean, & McDougall, 2000; Bruton & Rubanik, 2002; Watson, Stewart, & BarNir, 2003; Wiklund & Shepherd, 2003; Mishina, Pollock, & Porac, 2004). Resource weaknesses and distinctive inadequacies limit firm growth (West & DeCastro, 2001) and even threaten the survival of a firm (Thornhill & Amit, 2003). The founding team and/or the top management team (TMT) are an integral component of the entrepreneurial firm's human resources. Various founding team characteristics (Eisenhardt & Schoonhoven,

1990) and TMT attributes are conducive to firm growth, such as industry and firm-specific experiences (Siegel, Siegel, & MacMillan, 1993; Kor, 2003; Park & Bae, 2004) and social networks (Collins & Clark, 2003). TMT completeness (Bamford, Dean, & Douglas, 2004), cohesion, and integration (Ensley, Pearson, & Amason, 2002; Reuber & Fischer, 2002) are critical for firm growth. So are various human resource management practices, such as emphasizing high skills, allowing employees to participate in decision making, providing incentives, developing interpersonal processes, and matching people to the organizational culture (Snell & Youndt, 1995; Heneman, Tnasky, & Camp, 2000; Batt, 2002; Collins & Clark, 2003; Watson, Stewart, & BarNir, 2003).

In terms of financial resources, researchers have found that venture capital financing (Davila, Foster, & Gupta, 2003; Chang, 2004) and private equity placements (Janney & Folta, 2003) are associated with high growth. Total cash flow is one of the most critical factors in entrepreneurial firm growth (Brush, Bromiley, & Hendrikx, 2000), and, in general, more financial resources beget greater firm growth (e.g., Cooper, Gimeno-Gascon, & Woo, 1994; Bamford, Dean, & McDougall, 2000).

Researchers have recently begun to shift from a traditional Ricardian (Ricardo, 1817) perspective toward a more dynamic perspective, studying the interrelationships among various resource bundles in the growth process (e.g., Stuart, Hoang, and Hybels, 1999; Florin, Lubatkin, & Schulze, 2003). A new research stream has also emerged and it is closely related to life cycle/stage models of growth. This stream embraces the resource-based view, focusing on resource-based sequencing models (e.g., Brush, Greene, & Hart, 2001; Lichtenstein & Brush, 2001; Pettus, 2001). For example, Brush, Greene, and Hart (2001) explained the growth of entrepreneurial ventures with a resource

development pathway and the resource hierarchy model. The fundamental process of the resource development pathway is to (a) identify key resource needs and sources, (b) assemble (founder's) resources, and (c) attract (through social resources) and combine resources. Brush and colleagues argued that the entrepreneur (or entrepreneurial team) must transfer personal resources to the firm and transform these individual resources into organizational resources to create a firm-level unique advantage. A venture that fails to evolve from relying on the founder's individual resources to developing organizational resources will have limited growth (Brush, Greene, & Hart, 2001).

Also based on resource-based reasoning, Garnsey's (1998; 2002) model is one of the most comprehensive frameworks. She saw the entrepreneurial growth as a sequential process of (a) accessing resources, (b) mobilizing resources, and (c) generating resources. Garnsey's (2002) growth path model is built upon this sequential process perspective, with steady growth, early failure, stability with oscillation, and a phase of growth reversal. In this sense, this model is less deterministic, since firms can progress to (1) further growth, (2) plateau, and (3) growth reversal, at any point in the life cycle.

Grounded in Penrose's (1959) original arguments, the growth path models developed in this research stream (e.g., Garnsey, 2002) provide theoretical explanations for the resource-based developmental process, adding significantly to the configuration-oriented growth stage models mentioned in Section 2.1.2. This study adopts Penrose's (1959) definition of the firm as a bundle of resources, and conceptualize firm growth as a dynamic resource-based sequencing (e.g., Brush, Greene, & Hart, 2001; Pettus, 2001; Garnsey, 1998; 2002). Thus, the resource-based view provides building blocks for the conceptual model.

### *2.2.2. System dynamics perspective*

Systems theory in general (e.g., von Bertalanffy, 1968), and the system dynamics perspective in particular (e.g., Forrester, 1961; Sterman, 2000), are particularly illuminating for this study. The system dynamics perspective defines a system as a collection of interacting elements. It considers the level or status of elements in the system (stocks), their dynamic increase and decrease through inputs and outputs (flows), the boundaries of the system, the interactions and interdependency among systems elements, and feedback loops. Together, these concepts provide a holistic, systemic approach for understanding the dynamic nature of organization growth (Morecroft, Sanchez, & Heene, 2002).

A systems view of the firm, that is, that the firm is some sort of a system, is prevalent in the management literature (e.g., Thompson, 1967). Recently, researchers have incorporated dynamic perspectives into the model and conceptualized the firm as a dynamic system of resources (e.g., Garnsey, 1995; Morecroft, 2002; Warren, 2002). This view "shifts attention from static comparisons of resource endowments to dynamic analyses of resource accumulation and the dominant logic of policies and feedback processes that control accumulation processes and drive the evolution of resource stocks over time" (Morecroft, 2002: 20).

The system dynamics perspective has been mainly used as a modeling tool in mainstream strategy research (e.g., Crossland & Smith, 2002; Romme, 2004). However, this study adopts the system dynamics perspective at the conceptual level; the concepts provide mortar for developing a resource-based model of firm growth. This study considers that the firm is a system (i.e., a bundle) of resources. In line with the Penrosean

perspective (Penrose, 1959), in this study 'growth' means expanding the resource system—what I call the dynamic resource pyramid (see Chapter 3, Section 3.3).

### *2.2.3. Configuration/fit approach*

The concept of configuration has been used to analyze relationships between environment, structure, strategy, and leadership (e.g., Burns & Stalker, 1961; Mintzberg, 1979; Miller & Friesen, 1984; Miller, 1990). These four elements are aligned with each other and give rise to a limited set of configurations (Miller, 1990). The life cycle/stage models of growth can be thought of as a specific application of the configuration approach. In these models, the configuration refers to relationships between size, age, strategy, organization structure, and environment (Wiklund, 1998). For example, Miller and Friesen (1984) studied 161 historical periods of 36 firms. They found that complementarities among configurational variables were common within each stage and that the predicted inter-stage differences existed, although organizations did not go through stages in the same sequence. Later, Hanks et al. (1993) proposed that each life cycle stage consists of a unique configuration of variables of organizational context and structure. They derived a configuration-based model of four growth stages based on a cluster analysis of 126 high-tech firms.

As the firm grows within a particular growth stage, its current configuration becomes obsolete and the firm needs to transform into the next growth stage (Wiklund, 1998). According to Miller (1990), the dimensions of the configuration affect each other in a restrictive and cyclical manner, creating inertia and resistance to change. Revolutionary or quantum changes in multiple dimensions of the configuration are needed to give the firm a new direction. These changes tend to be very disruptive and



expensive (Miller & Friesen, 1984; Miller, 1990), and if the firm cannot successfully manage this transformation, it will perish.

The systems approach (Drazin & Van de Ven, 1985; Van de Ven & Drazin, 1985) conceptualizes the fit as the consistency across relevant dimensions. In other words, this approach models fit as the lack of deviation from the ideal profile (Doty, Glick, & Huber, 1993). Theoretically, firms can sustain for as long as they can maintain an ideal resource profile.<sup>8</sup>

#### 2.2.4. *Cognition-based research*

Cognitions are defined as all processes by which sensory input is transformed, reduced, elaborated, stored, recovered, and used (Neisser, 1967). Entrepreneurial cognitions are “the knowledge structures<sup>9</sup> that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth (Mitchell, Busenitz, Lant, McDougall, Morse, & Smith, 2002a: 97).” Entrepreneurial cognitions researchers have used constructs and theoretical frameworks from various fields, including social psychology, to address the research questions such as: “Why do some persons but not others choose to become entrepreneurs?” “Why do some persons but not others recognize opportunities for new products or services that can be profitably exploited?” “Why are some entrepreneurs so much more successful than others?” (Baron, 2004).

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<sup>8</sup> However, firms cannot grow by adhering to the status quo. They have to deviate from the ideal fit in order to accumulate new assets and grow (Itami, 1987). This point will be further elaborated in Chapter 3.

<sup>9</sup> Scholars have used various labels such as knowledge structure, attention structure, schemas, heuristics, scripts, frames of reference, mental models, and dominant logics (Walsh, 1995).

During the last decade, there have been substantial developments in theory and empirical testing in this stream of research. For example, researchers have found that entrepreneurs are different from non-entrepreneurs in their cognitive characteristics such as cognitive schema, expert scripts, and the use of heuristics, and that these differences influence the venture creation decision (Krueger, 1993; Busenitz & Barney, 1997; Baron, 2000; Mitchell, Smith, Seawright, & Morse, 2000; Keh, Foo, & Lim, 2002; Markman, Balkin, & Baron, 2002; Mitchell, Smith, Morse, Seawright, Peredo, & McKenzie, 2002b) and venturing outcome (Gatewood, Shaver, & Gartner, 1995). Various factors such as cultural values, social contexts, personal variables, former experience, and gender have been hypothesized as antecedents for entrepreneurial cognitions (Busenitz & Lau, 1996; Mitchell et al, 2000; 2002b; Gatewood, Shaver, Powers, & Gartner, 2002) and subsequently tested empirically (e.g., Mitchell et al, 2000; 2002b; Gatewood et al, 2002). However, the extant literature on entrepreneurial cognitions did not address the questions related to firm growth, for example, the role of entrepreneurs' cognitive schema or knowledge structure during the growth process.

The attention-based view (cf. Ocasio, 1997) is the most informing of the various cognition-based perspectives, in terms of the Penrosean (Penrose, 1959) model of firm growth. Attention has traditionally been defined as a condition of selective awareness that determines what individuals do or do not perceive and remember (James, 1890). Organizations influence individual decision processes by allocating and distributing the stimuli that channel administrators' attention. Therefore, organizational decision-making is a function of the limited attentional capacity of humans, plus the structural influence of organizations on individual attention (Simon, 1947). In this vein, organizations have

been described as systems of distributed attention in which the cognitions and actions of individuals are derived from the specific organizational context and situations (Ocasio, 1997: 189). Organizational attention refers to the time and effort a firm devotes to a particular set of issues, problems, opportunities, and threats (Ocasio, 1997: 188).

Penrose's (1959) theory of firm growth is essentially a cognitive model. At the center of her model is the "subjective" productive opportunity: subjective, because the opportunity depends on how the entrepreneur perceives it (Penrose, 1959: 42). Entrepreneurs make decisions and take actions depending on what draws their attention, and attention, images, and cognitive schema are shaped by the firm's resources (Ocasio, 1997). In turn, the schemas used by entrepreneurs to characterize and describe existing resources are part of the repertoire of action alternatives considered (Ocasio, 1997). In sum, the resource model for entrepreneurial firm growth should reflect entrepreneurial cognition and managerial attention structures, and in turn, should provide entrepreneurs with a cognitive map of the resources they need to attend to.

## CHAPTER 3: CONCEPTUAL MODEL

This chapter presents an *a priori* theoretical model that guides the theory building process. This chapter proceeds as follows: Section 3.1 defines the firm and resources based on the resource-based view. Section 3.2 categorizes firm-level resource bundles and discusses the salience and relevance of these resource bundles to the early growth of entrepreneurial firms. Section 3.3 presents the dynamic resource pyramid model, which will serve as the core framework for theory development. Section 3.4 demonstrates the descriptive power of the proposed framework, and based on the theoretical deduction, Section 3.5 develops and presents a tentative theory of the sustainable growth of entrepreneurial firms. Section 3.7 concludes the chapter by discussing the role of the *a priori* conceptual model in the light of my theory building methodology and listing the inventory of propositions developed through this chapter in light of the research questions.

### 3.1. Definition of the Firm and Resources

In line with the resource-based view (e.g., Barney, 1991), this study defines the firm as a bundle of resources; a bundle of human and non-human resources under an administrative structure that provides the cohesive character of the firm (Penrose, 1959). I adopt the broad definition and define resources as tangible and intangible assets that are semi-permanently tied to the firm (Wernerfelt, 1984). This study focuses on the resources that are the backbone of firm growth, but not necessarily a condition for sustained competitive advantage or superior performance. Competitive advantage or superior performance can drive growth, but firms still need a solid foundation of essential resources if they are to grow sustainably over a prolonged period of time. Thus, the concept of resource idiosyncrasy and Barney's (2002) VRIO framework (value, rarity,

imitability, and organization) are less of focus in this study. Instead, I focus on resource commonalities, that is, the resource bundles that are the common foundations of sustainable growth.

These bundles include both the high-level strategic resources required for capitalizing on opportunities and the low-level resources necessary for maintaining basic business processes (Brumagim, 1994). These resources are like the 'essential nutrients' of the firm, and I am interested in identifying them and figuring out the equivalent of 'recommended daily intake'. This study is mainly concerned with the internal developmental process of the firm: what kinds of resources are relevant to, and required for, the growth of entrepreneurial firms.

### **3.2. Categorization of Resources**

In this section, I categorize the various resources of entrepreneurial firms and describe their relevance to early firm growth. In this study, I derive a categorization scheme that reflects the cognitive schema through which entrepreneurs distribute their managerial attention, while still accommodating the commonly identified resource bundles such as financial, physical, human, technological capabilities, organizational and social capital resources (e.g., Hofer & Schendel, 1978; Lichtenstein & Brush, 2001; Barney & Arkan, 2002; Ireland, Webb, & Coombs, 2005). Based on the attention-based approach (cf. Ocasio, 1997), I reorganize firm-level resources into four categories: strategic resources, human resources, financial resources, and organizational resources, which will be discussed in detail in the remainder of this section (see Table 3-1):

**TABLE 3-1**  
**Resource Bundles Relevant to the Early Growth of Entrepreneurial Firms**

		Resource Bundles	Components
Internal orientation	Tangible	<b>Strategic resources:</b> <i>Resources that are directly related to the firm's product-market</i>	Company vision Business portfolio Market opportunities Customer base and reputation in the market Market position (e.g., market leader, first mover, etc.)
		<b>Financial resources:</b> <i>Monetary assets the firm controls</i>	Cash flow Debt capacity New equity availability
	Intangible	<b>Human resources:</b> <i>Resources that are tied to individuals associated with the firm</i>	Entrepreneur and/or entrepreneurial team Expertise and skills (management skills and entrepreneurial skills) Leadership Board of directors and advisory boards
		<b>Organizational resources:</b> <i>Resources that are attributes of collections of individuals associated with a firm (Barney &amp; Arian, 2002)</i>	Internal systems, structures, and routines Organizational culture Communication links and informal systems
External Orientation			

As a starting point, the salience factor delineates which resources I include in the model. To be comprehensive, the model should include all resources that demand entrepreneurs' attention; but to be parsimonious and manageable, the model should only include resources that require continuous attention. Thus, in this study I do not consider physical resources, such as machines and offices. This is not because they are irrelevant to early firm growth, but because they are relatively less slippery. In other words, physical resources are more obvious and less likely to be overlooked. Indeed, Lichtenstein and Brush (2001) found that physical resources are not a major concern for managers in early stage firms. Additionally, physical resources are generally tradable and least subject to time compression diseconomies (Dierickx & Cool, 1989). The 'stocks' of physical resources can be adjusted instantaneously, but firms manipulate the 'flows', not stocks, of other resource bundles (Dierickx & Cool, 1989). In this study, I assume that entrepreneurial firms possess at least a minimum level of physical assets which are immediately purchasable with financial resources.

### 3.2.1. *Strategic resources*

The entrepreneurial attention schema can be clearly divided into external and internal orientation. I believe that product market-oriented strategic resources, which are critical to the firm's growth process, warrant separate managerial attention.<sup>10</sup> In this model, *strategic resources* refer to the resources that are related to the way in which the organization develops its capabilities to exploit an opportunity in the marketplace (Wickham, 2001). These resources are directly related to the "productive opportunity", which is comprised of the productive possibilities that entrepreneurs see and take

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<sup>10</sup> This study defines the firm as an open system of resources. Other resource bundles are also related to the firm's external environments, but through strategic factor markets, not product markets. These resource bundles are relatively internally-oriented.

advantage of (Penrose, 1959: 31), and therefore are most likely to contribute to the creation and protection of economic rents (Amit & Schoemaker, 1993). The essence of the Penrosean enterprise is the ability to detect and connect internal resources and external opportunities (Garnsey, 2002).

Strategic resources include market opportunities, the firm's customer base (Amit & Shoemaker, 1993), and its business model (Wickham, 2001). External social capital resources, such as strategic alliances (Ireland, Hitt, & Sirmon, 2003), control or superior access to distribution channels, and buyer-seller relationships (Amit & Shoemaker, 1993), are included in this category. Reputational resources (Grant, 1991), such as customer trust and brand image (Itami, 1987), are also strategic resources. These resources cannot be sourced from the strategic factor market (Barney, 1986), so they are most subject to time compression diseconomies (Dierickx & Cool, 1989).

### 3.2.2. *Financial resources*

Tangible resources are easily distinguishable and entrepreneurs can pay attention to them accordingly. The only tangible assets in this model, that are internal to entrepreneurial firms and not directly related to the product market, are financial resources. *Financial resources* refer to the monetary assets the firm controls. Financial resources can include many things, from equity capital, debt capital, and retained earnings (Barney & Arkan, 2002), to cash flow, debt capacity, and new equity availability (Hofer & Schendel, 1978). Cash flow is effectively operating capital. It takes into account other financial factors including funding, revenue, and profit and is particularly critical to the firm's early growth (Brush, Bromiley, & Hendrikx, 2000; Churchill & Mullins, 2001).



### 3.2.3. *Human resources*

The remaining intangible resources can be categorized according to their source; that is, whether they are attributable to individuals or collections of individuals. *Human resources* refer to the resources tied to individuals associated with the firm. In this model, the human resource bundle includes technological resources because human and technological resources are not easily separable in early stage entrepreneurial firms. In most cases, the technological resources in entrepreneurial firms are attached to, or controlled by, the entrepreneur and/or the entrepreneurial team in the forms of patents, expertise, know-how, and so forth. The human resource bundle also includes the entrepreneurial skills and management skills defined by Penrose (1959: 34). In many cases, the board of directors and advisors are also relevant.

Managerial resources and skills have been identified as the source of competitive advantage and rents (Castanias & Helfat, 1991). Human resources are critical to firm growth because people are both accumulators and producers of many other assets (Itami, 1987). Indeed, the scarcity of firm-specific managerial capability is often the binding constraint that limits firm growth, also known as the "Penrose effect" (Penrose, 1960: 2; cf. Kor & Mahoney, 2000).

### 3.2.4. *Organizational resources*

On the other hand, *organizational resources* refer to the resources that are attributes of the organization itself, that is, the *collections* of individuals associated with a firm (Barney & Arkan, 2002). Organizational resources are the firm's internal systems, structures, and routines. They include planning, controlling, and coordinating systems (Barney, 1991); reporting structures; and operating routines (Nelson & Winter, 1982).

The organizational resource bundle also includes internal social capital resources (Ireland, Hitt, & Sirmon, 2003), such as organizational culture (Hansen & Wernerfelt, 1989). Organizational resources are mainly internal information-based resources (Itami, 1987). They rarely drive firm growth, but they are important because they are the coordinating mechanisms crucial for maintaining growth. In this sense, organizational resources are critical if they help rapid growth firms overcome the Penrose effect.

These four resource bundles are the building blocks of the model; they comprehensively include the resources that have been identified in the literature as relevant to early firm growth (e.g., Lichtenstein & Brush, 2001). Table 3-1 shows a list of these resource bundles and their subcomponents. This section yields the first research proposition:

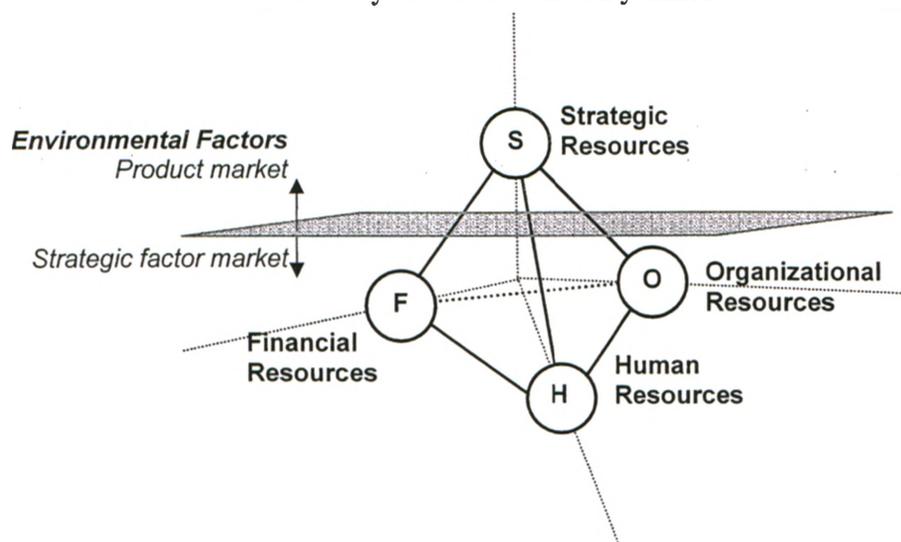
*Proposition 1. There are four resource bundles (strategic resources, financial resources, human resources, and organizational resources) that are most salient at the early stages of growth.*

### **3.3. The Resource Pyramid – a Dynamic Four Forces Model**

The next step is to conceptually organize these resource bundles so that the model reflects real world phenomena and facilitates theory development. The system dynamics perspective (e.g., Forrester, 1961; Sterman, 2000) defines a system as a collection of interacting elements, and considers the boundaries of the system, stocks and flows of the elements, interactions and interdependency among systems elements, and feedback loops. These concepts, when considered together, provide a holistic, systemic approach for understanding the dynamic nature of organization growth (Morecroft, Sanchez, & Heene, 2002), and provide the mortar for the building blocks of my growth model.

This study proposes a three-dimensional dynamic resource pyramid (a system) comprised of four vertices that represent each resource bundle (system elements). I call these vertices 'forces'. All four forces are interconnected and interdependent because they constantly interact throughout the growth process. The edges connecting the four forces represent the direct and indirect, feedback and feed-forward loops that connect different resource bundles. The model illustrates the boundary of the resource system and incorporates two kinds of environmental factors: the strategic factor market (Barney, 1986) and the product market. The dynamic resource pyramid model is shown in Figure 3-1.

**FIGURE 3-1**  
**The Dynamic Resource Pyramid**



I believe this model provides a solid foundation for theory development, for several reasons. First, the dynamic resource pyramid model reflects the multi-faceted nature of firm growth. Venture growth is a complex process, influenced by variety of interrelated micro and macro domains (Baum, Locke, & Smith, 2001). Wickham (2001) argues that the growth of entrepreneurial ventures should be considered from financial,

strategic, structural, and organizational perspectives. The Timmons model of entrepreneurial process has three driving forces: opportunity, resource, and the entrepreneurial team (Timmons & Spinelli, 2003). The four forces of the resource pyramid accommodate all these aspects.

Second, the dynamic resource pyramid model is particularly suitable for explaining process. Growth, like entrepreneurship itself, is not static, but an ongoing dynamic process (Acs & Audretsch, 2003: 35; Penrose, 1959: 5). Managers influence the development and deployment of strategic assets (resources) by adopting a process perspective, which recognizes distinct phases of development, the importance of feedback, and the need for vision (Amit & Schoemaker, 1993). The dynamic resource pyramid model provides a basis for conceptualizing the growth process as continuous interactions among four different forces of growth. This point will be further elaborated in subsequent sections of this paper.

Third, an entrepreneurial firm is an open system (Thompson, 1967), not a stand alone entity. To survive and succeed, it has to acquire financial capital and human resources from strategic factor markets. It must also develop institutional resource endowments, such as scientific and technological research, financing arrangements, and a substantial human competence pool (Van de Ven, 1993). The dynamic resource pyramid model primarily focuses on the entrepreneurial firm's internal resource development process, but it also takes into account the firm's ongoing interaction with both product market and strategic factor markets (Barney, 1986), as illustrated in Figure 3-1.

In summary, the dynamic resource pyramid model is a theoretical framework suitable for conceptualizing the Penrosean perspective of firm growth: the pursuit of

productive opportunities that are created, and at the same time limited, by the human and non-human, tangible and intangible resources under the firm's administrative framework (Penrose, 1959).

### **3.4. Firm Growth as a Dynamic Resource Pyramid Model**

The essence of the Penrosean perspective of firm growth is that unused productive resources, when coupled with changing managerial knowledge, create unique opportunities for growth (Penrose, 1959; Castanias & Helfat, 1991; Henderson & Cockburn, 1994; Teece, Pisano, & Shuen, 1997). Thus, firm growth is a function of the unique bundle of firm-specific resources (Penrose, 1959) and the growth potential of any firm depends upon the resource base it develops in a path-dependent process (Arthur, 1994). For entrepreneurial firms especially, every resource has significant implications for growth. Entrepreneurial firms have no previous path to guide subsequent path-dependent developmental processes. They have no history or established customer base. Entrepreneurs and their stakeholders (e.g., customers, investors, etc.) only have access to current information. For new ventures to create wealth in the long run, their early strategies must be founded on unique capabilities rooted in innovative combinations of resources (Brush, Greene, & Hart, 2001).

In this section, I conceptualize a resource-based sequencing model of growth (cf. Lichtenstein & Brush, 2001; Pettus, 2001; Garnsey, 1998; 2002), based on the proposed dynamic resource pyramid model. The 'initial growth cycle' is the process which occurs from conceiving a venture to creating a firm. At that point, the firm can either enter iterative 'further growth' cycles or suffer growth pains and enter the 'growth reversal' phase. Wherever possible, I have illustrated the model with case examples. One such

example comes from NeoG, a business-to-business (B2B) e-business start-up located in a fast developing Asian country. I followed NeoG from inception in 1999, through a period of high growth, to its ultimate decline in 2005.<sup>11</sup> Other examples, such as Netscape and People Express, are adopted from published case studies and related articles. These case studies facilitate the development of the theoretical model by allowing me to check for the face validity of the model throughout the process. My intention is to demonstrate the descriptive power of the dynamic resource pyramid model by representing typified patterns of early firm growth, rather than to depict the complete longitudinal sequence of a growth process that is generalizable to the population of entrepreneurial firms.

#### *3.4.1. Initial growth cycle*

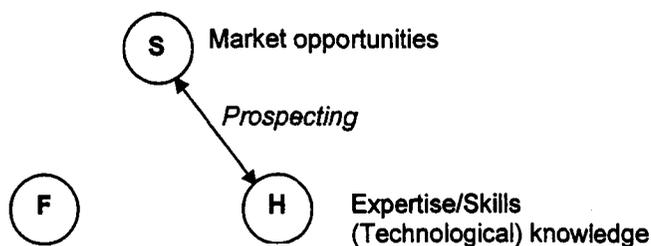
The entrepreneurial process is likely to be initiated at the axis of human resources and strategic resources (H-S), as shown in Figure 3-2(a). This is the "prospecting" stage (Garnsey, 2002) and the length of this stage may vary depending on each firm's situation. Some scholars (e.g., Timmons & Spinelli, 2003) argue that entrepreneurial process are opportunity driven and originate from strategic resources (S), but in fact many entrepreneurial processes also originate from human resources (H). Entrepreneurs (or an entrepreneurial team) are often motivated to engage in the entrepreneurial process because they possess proprietary knowledge, technology, skills, or relationships. They do not necessarily have a pre-identified business opportunity in mind. NeoG's founding team knew each other from collaborating on several IBM corporate information systems consulting projects. They liked the chemistry and teamwork, and the six founders agreed, in a local pub, to start a new business of their own. The main driver behind NeoG's

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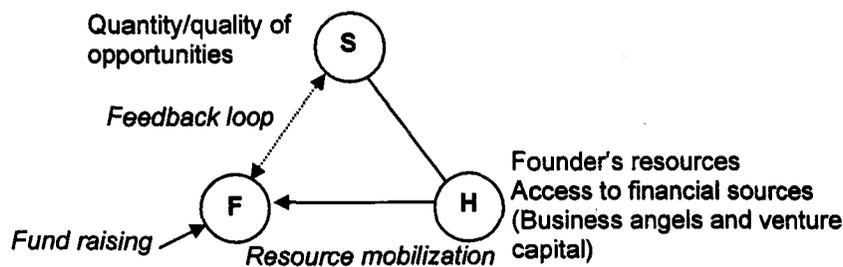
<sup>11</sup> A synopsis of the case is included in Appendix 3-1. The company name was disguised.

incorporation in February 2000 was a team of people (H) with experience, technological expertise, and human networks, rather than a particular business opportunity or innovative idea. It actually took the team five more months of searching to decide to pursue emerging opportunities in the embryonic B2B e-business market (S).

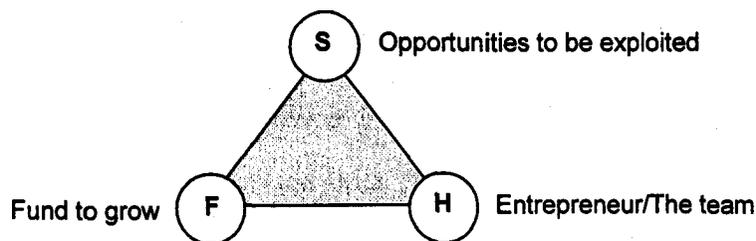
**FIGURE 3-2**  
**Initial Cycle of the Entrepreneurial Firm Growth**  
 (a) Prospecting



(b) Resource mobilization and resource acquisition



(c) Completion of the initial growth cycle



In the next stage, the entrepreneur (or entrepreneurial team) mobilizes initial resources (Garnsey, 2002) around the human resources and financial resources (H-F) axis, as shown in Figure 3-2(b). Often, entrepreneurs (or the team) bring their personal resources to the firm and transform these individual resources into organizational resources (Brush, Greene, & Hart, 2001). If the entrepreneur does not possess enough personal financial resources, they are responsible for raising initial capital to fund early product development and build the firm's equity in the product (or service) market through business angels or venture capitals. It is also well known that investors are attracted to the track records of entrepreneurs and the management team (Timmons & Spinelli, 2003). At NeoG, the founders bootstrapped the seed funding through their retirement benefits. By August 2000, the founders secured first round funding from business angels and several institutional investors, most of whom were their acquaintances (H-F). Again, the length of this stage varies significantly. For example, firms that spin out of another company with an experienced team in place may appear to skip the prospecting and resource mobilization periods (Garnsey, 2002).

Meanwhile, this process is informed by, and also informs, the strategic resources dimension. Resources may only be recognized in light of the opportunities they offer, and opportunities may only be recognized because the entrepreneur is able to see the potential in some attainable resource (Garnsey, 2002). In case of NeoG, the founders had to convince investors by demonstrating the fit between their expertise and the business plan (S-H), even though investors were initially attracted to the founding team itself (H-F). In other words, the founders' expertise and skills (H) were deemed valuable only in light of the market opportunities they were pursuing (S). The strategic dimension takes



center stage because other perspectives are simply different facets of the same underlying process, the heart of which is external markets awarding valuable resources to the venture (Wickham, 2001). Thus, the initial cycle of firm growth, and one face of the pyramid (S-H-F), is complete, as shown in Figure 3-2(c).

By this time, it is likely that the venture has developed a certain amount of organizational resources (O). Organizational creation is also about building organizational processes (Thompson, 1967). However, it is common for entrepreneurial ventures to minimize their organizational structures and systems and maintain a lean operation during the early stages of growth. For example, NeoG deployed a flat and flexible organization structure to maximize operational efficiency and personal motivation. Thus, the "O" vertex is not part of the initial growth cycle. The S-H-F model is also similar to the entrepreneurial process suggested by Timmons (Timmons & Spinelli, 1999), although the specific sequence can vary significantly.

#### *3.4.2. Further growth: firm growth as a virtuous spiral*

Once a product (or service) is launched, the cash flow generated provides additional financial resources (S-F) which enable the firm to further exploit market opportunities and expand its customer base (F-S). This reinforcing feedback/feed-forward loop (Garnsey, 2002) accelerates the further growth process which, in most cases, is driven by the strategic-human-financial resources (S-H-F) dimension. For example, Netscape attracted a large and highly talented group of managers and professionals, using venture capital funds, to fully exploit a market opportunity (F-H). With a superb management team, Netscape was able to complete an initial public stock offering (IPO) to create even greater financial strength (H-F). The management team also brought with

them broad customer networks and skills for developing well-rounded strategies (H-S). These helped Netscape expand its strategic resources and cash flows (S-F), at least until Microsoft became serious about this market (Timmons & Spinelli, 2003). NeoG's virtuous growth spiral was not as spectacular as Netscape's, but it shows a similar pattern. With the financial capital raised through first round funding, NeoG recruited additional talented programmers (F-H) and made its first acquisition in December 2000. The acquisition provided NeoG with more programmers (F-H) and several marketable solution suites (F-S). Meanwhile, NeoG's won most of its high profile projects through its strong connections with IBM (S-S), and this solid partnership helped the founders attract more alliance partners (S-S). Winning high profile projects put NeoG in a favorable position for second round funding. In May 2001, a U.S. venture capital firm proposed a major cash investment in NeoG (S-F).

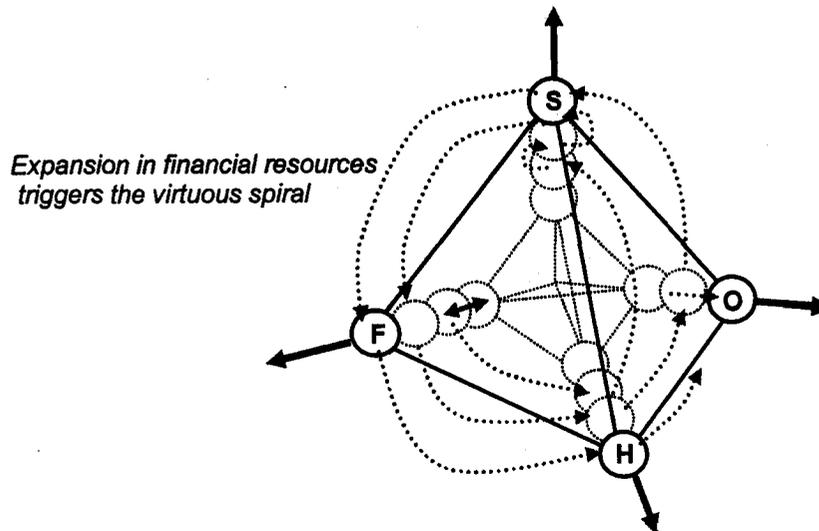
As they grow, entrepreneurial firms also develop and deploy routines (Nelson & Winter, 1982), formal organizational structures, and internal communication links. These routines and structures enhance efficiency and often also become distinctive capabilities and unique competitive advantages. Nevertheless, the organizational resources (O) dimension is more of a necessary back-end for maintaining growth in the S-H-F dimension, than a driver of growth. During NeoG's growth cycle, the founding team put a few structures and routines in place to support further growth. For example, they implemented an intranet to facilitate internal communication and knowledge sharing, which helped them to better coordinate sales and project activities (O-S). In addition, they gradually developed a functional organizational structure and introduced an accounting system.

In many cases, however, entrepreneurial firms try to minimize the organizational resources dimension (O) and sometimes fight hard to keep it that way. For example, Donn Burr, People Express's visionary founder, refused to add systems and bureaucratic procedures; he did not want to undermine the founding spirit of his innovative, open organization. As a result, People Express was overwhelmed by the extra business generated by its very qualities of openness and customer responsiveness; the organization became more and more chaotic and ultimately failed (Schlesinger & Whitestone, 1983; cf. Quinn & Cameron, 1988).

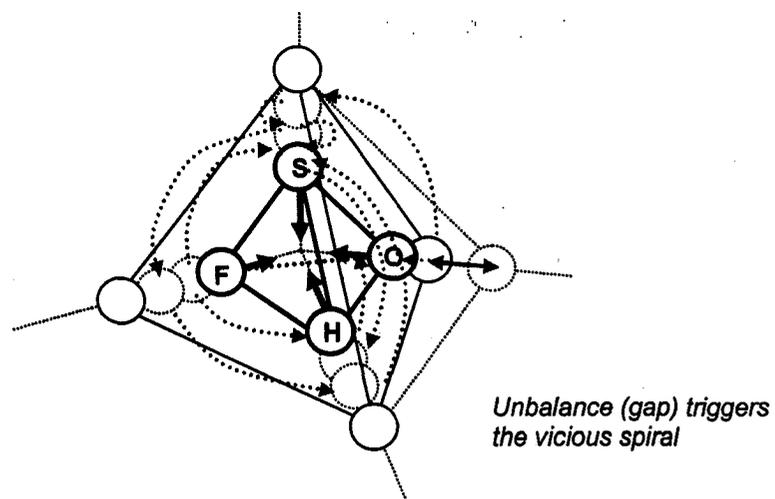
Thus, firm growth can be only achieved and sustained when each and every dimension of the resource pyramid is adequately addressed and expanded. The whole process can be conceptualized as a virtuous spiral, as shown in Figure 3-3(a). When the entrepreneurial venture is engaged in a virtuous growth spiral, expanding one resource bundle provides momentum for expanding the others. Famous examples of the firms propelled by an early spiral of self-reinforcing, profitable growth include Hewlett Packard, Microsoft, Sun Microsystems, Cisco Systems, and Dell (Garnsey, 2002).

**FIGURE 3-3**  
**Firm Growth (Virtuous Spiral) and Growth Reversal (Vicious Spiral)**

(a) Firm growth as a virtuous spiral



(b) Growth setback as a vicious spiral



### 3.4.3. *Growth pains: growth reversal as a vicious spiral*

Many high-growth firms experience major setbacks (Garnsey, 2002). Growth pains often occur when growth outstrips a firm's organizational and administrative resources (Slatter, 1992). Although problems build up steadily and visibly, feedback may go undetected and growth reversals can occur unexpectedly when an essential resource is exhausted (Garnsey, 2002). The early symptoms of growth pains are role confusion and poor coordination between different parts of the organization. These symptoms lead to frustration and stress, poor decision-making, declining morale, and, inevitably, further problems (Slatter, 1992). Structural deficiencies can exacerbate all these problems (Child, 1984).

NeoG is a good example of the vicious spiral. NeoG had all the right ingredients for success—market opportunity, a technologically skilled entrepreneurial team, and initial angel funding. But, like many entrepreneurial firms, NeoG did not have enough resources to fill key managerial functions (H undergrowth). As a result they began to react to circumstances and focus on emergent strategies, rather than pursue their original, carefully thought-out business objectives. Leaping at every opportunity diluted the firm's business portfolio (S-S). Consequently, market opportunities were lost (S-S) and the firm could not generate enough cash to maintain its forward-looking operation (S-F). Poor performance, in turn, further confused the company's business strategy (F-S). The overstretched leadership team could not develop a turnaround strategy in a timely manner. As a result, key people became disillusioned and left (S-H), further accelerating the vicious spiral. The firm inevitably became more and more focused on day-to-day problem-solving.

People Express is another classic example. As passenger growth (S) outstripped staff expansion (H) and internal systems development (O), the extra business overwhelmed the organization and problems began to emerge (S overgrowth). Customer satisfaction with service levels declined and the customer base collapsed (S). As a result, employees became demoralized and de-motivated (S-H), which in turn further damaged service levels and customer satisfaction (H-S). As profits eroded (S-F), a sense of crisis built up within the organization. Caught in a vicious spiral, People Express could not find a viable route to recovery (Schlesinger & Whitestone, 1983; cf. Quinn & Cameron, 1988; Morecroft, 2002). As such, the growth reversal process can be conceptualized as a vicious spiral, as shown in Figure 3-3(b).<sup>12</sup>

Entrepreneurial firms caught in a vicious spiral often suffer a hard landing: closure or buy-out, like in the case of People Express. But, if the firm has appropriate structural mechanisms in place to stop the vicious spiral, such as active internal communication links, the landing can be soft: a "plateau" firm (Garnsey, 1998). For example, by early 2003 NeoG had managed to slow its abrupt growth reversal to a gradual decline. When the study ended in 2005, NeoG was still operating, but with only one of the six co-founders and a handful of programmers. In some cases, entrepreneurial firms intentionally enter a plateau without suffering a major growth setback. Many entrepreneurs in small firms are motivated by lifestyle rather than pecuniary factors (e.g., Storey, 1994; Cliff, 1998; Amit et al, 2001). In any case, plateau firms may revive their

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<sup>12</sup> There are other scholars who have visualized entrepreneurial processes as virtuous/vicious spirals, albeit in the slightly different context. For fuller visual illustrations, see Ropo and Hunt (1995), for example. Similarly, Hambrick and D'Aveni (1988) discussed large corporate failures as downward spirals. My model complements Hambrick and D'Aveni's idea by focusing on the internal process involving a firm's resource system in the context of entrepreneurial firm growth.

growth with a deliberate turnaround strategy in response to changing circumstances, or they may gradually decline in size.

The specific sequence of growth will differ among firms and there is a myriad of interactions among the resource bundles. In some cases, firms do appear to grow through recurring, non-identical processes punctuated by alternating periods of stability and instability (Katz, 1993). They appear to achieve growth in each dimension almost simultaneously: the degree of expansion in each dimension can sometimes be dramatic and when it is coupled with explosive expansion in the other three dimensions over a short period of time, it could be interpreted as a punctuated growth process. However, I argue that there is a great tendency for expansion in one resource bundle to *sequentially* trigger expansion in other resource bundles during early growth stages, mainly because of resource constraints. This yields the next research proposition:

*Proposition 2. The growth of the firm is a sequential and incremental process through which strategic, financial, human, and organizational resource bundles are interactively developed and deployed (see Figure 3).*

And therefore:

*Proposition 3. The growth of the firm depends on the interactions (i.e., feedback/feed-forward relationships) among strategic, financial, human, and organizational resource bundles.*

### **3.5. A Tentative Theory of the Sustainable Growth of Entrepreneurial Firms**

This section presents a tentative theory of the sustainable growth of entrepreneurial firms, based on the dynamic resource pyramid framework. The central tenet of this theory is balance and fit. Balance and fit has been an extremely popular

instruction in the field of management, and supporting arguments are abundant. For example, Garnsey (2002) posited that synchronized growth, paced to prevent major bottlenecks and resource crises, entails less risk. Itami (1987) also emphasized the fit of a firm's assets, for example customer fit, competitive fit, technological fit, resource fit, and organizational fit. The core of the Timmons model of entrepreneurial process is the fit and balance among opportunity, resources, and team (Timmons & Spinelli, 2003).

From the financial perspective, Churchill and Mullins (2001) pointed out that a key financial challenge for managers is to strike a proper cash flow balance. For entrepreneurial firms, having too much money too early is equally disastrous as having too little money too late (Timmons & Spinelli, 2003). From an organizational perspective, too little structure is a chaos trap, and too much structure is a bureaucratic trap (Brown & Eisenhardt, 1998). If organizational structure is not adapted to its context, then opportunities are lost, costs rise, and organization's existence is threatened (Child, 1972).

This study envisions a configurational approach that incorporates constant, dynamic adjustments and balancing acts, rather than disruptive quantum changes. Entrepreneurs can minimize the need for revolutionary changes by fully anticipating and proactively creating configurational changes. This is a better approach than procrastinating, and magnifying the adjustment eventually needed (cf. Miller, 1990). To this end, the configurational approach in this study focuses on the holistic, yet confined, system of resources. In other words, I concentrate on the fit among factors internal to the firm (resources), rather than the fit between the environment and the firm's strategy and organization structure.



Theoretically, firms can sustain for as long as they can maintain an ideal resource profile. However, firms cannot grow by adhering to the status quo. They have to deviate from the ideal fit in order to accumulate new assets and grow (Itami, 1987). In this sense, the current model of sustainable growth is as paradoxical (Quinn & Cameron, 1988; Lewis, 2000) as the traditional configuration approach is ironical (e.g., Miller 1990).<sup>13</sup> The concept of balance and fit is the core of the theory, however, firms must deliberately create imbalance to initiate the virtuous growth spiral as shown in Figure 3-3(a).

Excess resources motivate further growth as firms attempt to balance resource use; Penrose (1959: 70) called this challenge the "continually receding goal." This imbalance must be temporal (i.e., it should be addressed in a timely manner) and marginal (i.e., it should be manageable), and entrepreneurs must carefully plan for the consequences of imbalance. Oftentimes, the imbalance can also occur as a result of unforeseen events or market conditions. To minimize the possibility that this will initiate the vicious spiral as shown in Figure 3-3(b), entrepreneurs should act quickly to adjust the resource profile and regain the balance. In this sense, it is *dynamic* balance and fit that is at the core of the theory.

To sustain growth, entrepreneurial firms need to constantly upset, and then reconstitute, balance and fit. In other words, they have to dynamically maintain the fit and balance among the four forces of the resource pyramid model (See Figure 3-4(a)). If, at any point in time, one or more of the forces significantly outgrows or undergrows the others, and if these unbalanced situations are not dynamically matched, the virtuous

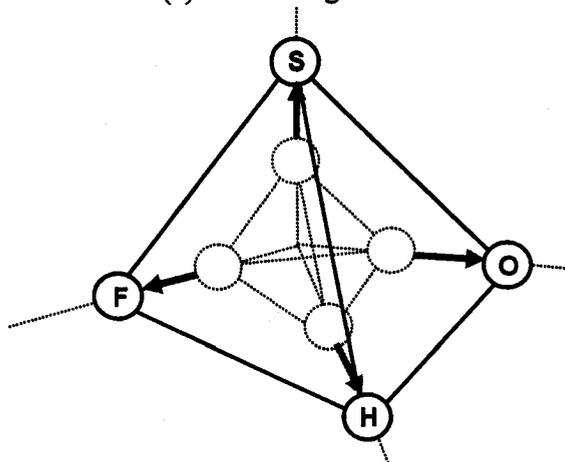
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<sup>13</sup> "The irony of (the traditional configuration model) is that major changes are very disruptive and expensive. Thus, for reasons of economy and morale, these revolutions are best deferred until absolutely necessary. And these delays, of course, allow problems to worsen or the firm to become increasingly out of steps with its environment. This then boosts the required magnitude of changes." (Miller, 1990: 784)

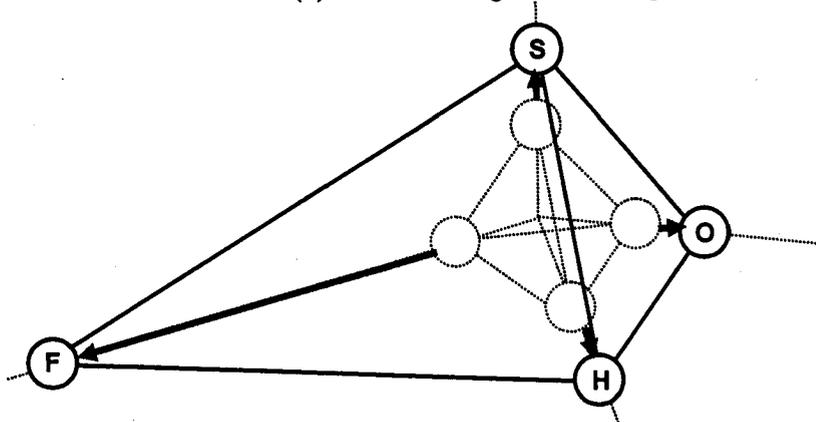
growth spiral breaks down. Consequently, further growth is hindered and the firm finds itself in the middle of crisis, which provokes the vicious spiral. This leads to a research proposition:

*Proposition 4. If, at any point in time, one or more forces significantly outgrows or undergrows other forces, and if this condition is not addressed in a timely manner, growth pains are likely to arise and the growth is unlikely to be sustained (See Figure 3-4(b) and 3-4(c)).*

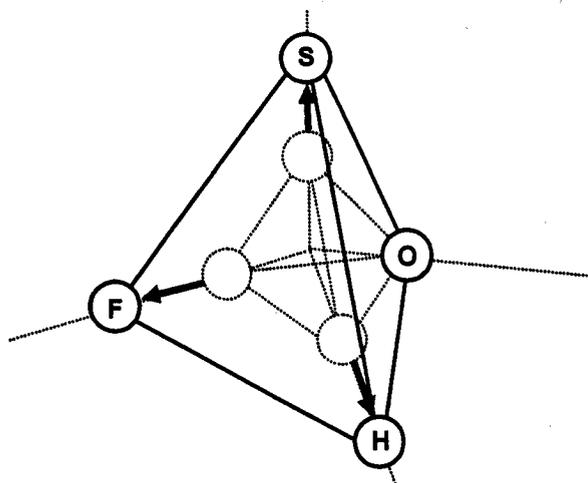
**FIGURE 3-4**  
**Balanced Growth and Unbalanced Growth**  
(a) Balanced growth



(b) Unbalanced growth – outgrowth



(c) Unbalanced growth – undergrowth



### 3.6. The Role of the *A Priori* Conceptual Model

Some researchers argue that a researcher whose objective is to build a theory grounded in data should begin with a pure mind, that is, without any preconceived theory or hypotheses (Glaser & Strauss, 1967; Glaser, 1968). Beginning with a list of pre-identified categories may constrain and bias our findings, because we may consciously or unconsciously try to force the data into a previously developed theory that may or may not apply to the area under investigation (Strauss & Corbin, 1990). On the other hand, some scholars suggest that we should begin with theory-deducted simple models, then construct more realistic theories through an inductive process by adding new variables and complications a few at a time (Blalock, 1969: 3-4). Yet other scholars propose a combined approach: start with pre-conceived notions, refine them, then check the literature for support, and make modifications where necessary (Bourgeois, 1979: 446).

It is essential to include theory development in the design phase of a study, even if the purpose of the research is to develop theory; this is especially true for case studies (Yin, 2003: 28). The literature can be used to simulate theoretical sensitivity and derive a list of questions (Strauss & Corbin, 1990: 52), thus focusing effort (Eisenhardt, 1989: 533). Specifying constructs *a priori* can also help to shape the research design for theory building, and better ground the construct measures (Eisenhardt, 1989). A well-articulated research design based on theory clearly guides the choice of data collection and analytic strategies (Yin, 2003: 29). An *a priori* theoretical model can be used as supplementary validation at a later stage of theory development, and becomes the level at which the case study results will be generalized (Strauss & Corbin, 1990: 52; Yin, 2003: 31).

This study used the *a priori* theoretical model developed in this chapter as a starting point for the research design. This theoretical model shaped the research questions, theoretical sampling logic (see Section 4.2), data collection strategies (e.g., what kind of questions to ask: see Section 4.3), and analytical strategies (see Section 4.4). At the same time, the *a priori* theoretical model remained only tentative and provisional (Eisenhardt, 1989: 536; Strauss & Corbin, 1990: 45) for the duration of the study as demonstrated in the following chapters.

In sum, an *a priori* theoretical model was used as the foundation for theory building. At the same time, an attitude of open mindedness, flexibility, skepticism, and theoretical sensitivity was maintained throughout this study (Glaser & Strauss, 1967; Glaser, 1978; Strauss & Corbin, 1990; Eisenhardt, 1989). The propositions developed in this chapter will facilitate the theory development, and in turn, will be further developed and refined, or in some cases, modified and altered through the theory building process. No construct is guaranteed a place in the resultant theory, and it is possible that I may find different dynamics among resource bundles during the growth process. In this sense, these propositions, and the theoretical model itself, are tentative and provisional.

Table 3-2 lists the propositions in the context of the specific research questions outlined in Section 1.4.

**TABLE 3-2**  
**Inventory of Propositions**

Research Questions	Propositions
<p>RQ 1. What are the most salient resource bundles in the early growth of firms?</p> <p>RQ2. Are there commonalities among the resource bundles that entrepreneurs identify as the most salient at the early stages of firm growth?</p>	<p>P1. There are four resource bundles (strategic resources, financial resources, human resources, and organizational resources) that are most salient at the early stages of growth.</p>
<p>RQ3. How do these resource bundles interact through the growth of entrepreneurial firms?</p>	<p>P2. The growth of the firm is a sequential and incremental process through which strategic, financial, human, and organizational resource bundles are interactively developed and deployed.</p> <p>P3. The growth of the firm depends on the interactions (i.e., feedback/feed-forward relationships) among strategic, financial, human, and organizational resource bundles.</p>
<p>RQ4. What determines the sustainability of entrepreneurial firm growth?</p> <p>RQ4-1. Are there systematic relationships among the resource bundles that enable or hinder sustainable growth?</p>	<p>P4. If, at any point in time, one or more forces significantly outgrows or undergrows other forces, and if this condition is not addressed in a timely manner, growth pains are likely to arise and the growth is unlikely to be sustained.</p>

## CHAPTER 4. METHODOLOGY

This chapter describes the methodology that guided the dissertation. Section 4.1 explains how I build the theory; Section 4.2 discusses the theoretical sampling logic and case pool. Section 4.3 and Section 4.4 detail the data collection methods and analytical strategies, respectively. Section 4.5 concludes the chapter by explaining the mechanisms employed to assure the validity of findings. This section also discusses relevant ethical issues.

### 4.1. Theory Building Methodology

The nature of the research problem demands a qualitative approach: qualitative methods can be used to uncover and understand what lies behind any phenomenon about which little is known (Strauss & Corbin, 1998: 19). The integrative research design is built upon inductive theory building methodologies. The main research strategy is a process-focused case study approach (Yin, 1984; 2003; Eisenhardt, 1989); the overarching data collection strategy is a multi-case method involving cross-sectional, retrospective longitudinal, and comparative case studies (Barley, 1990); and the primary analytical strategy is grounded theory building (Glaser & Strauss, 1967; Strauss & Corbin, 1990). This research design allows me to build on the past literature and provide contextually grounded insights that can generate theory amenable to subsequent testing (Reuber & Fischer, 2005). This approach is particularly appropriate given that, although we can extract meaningful categories (constructs) from the extant literature, our theoretical understanding of the phenomenon (the relationships among constructs) is underdeveloped. Table 4-1 gives an overview of the research strategy.

**TABLE 4-1**  
**Overview of the Research Strategy**<sup>14</sup>

Purpose	Theory building		
Ontology/epistemology	Objectivism/positivism		
Research strategy	Case study research (Yin, 1984; 2003; Eisenhardt, 1989)		
Research design (Key design reference: Barley, 1990)	Cross-sectional		Longitudinal (retrospective)
			Comparative
Data collection strategies	<ul style="list-style-type: none"> <li>• In-depth qualitative interviews (entrepreneur/entrepreneurial team)</li> <li>• Company documents</li> <li>• Archival data</li> </ul>	<ul style="list-style-type: none"> <li>• In-depth qualitative interviews (entrepreneurs/entrepreneurial team and key employees)</li> <li>• Company documents</li> <li>• Archival data</li> </ul>	
Analytic strategies	<ul style="list-style-type: none"> <li>• Grounded theory building procedure (open coding/axial coding)</li> </ul>	<ul style="list-style-type: none"> <li>• Pattern matching</li> <li>• Grounded theory building procedure (axial/selective coding)</li> </ul>	

<sup>14</sup> As stated in [Section 1.2](#), the theory building process involves multiple iterations of theory-driven deduction and data-grounded induction. The methodology described in this section covers a single iteration of a data-grounded induction process, shown in [Figure 1.1](#). This represents just one part of the whole theory building process, but it is the most critical step in building grounded theory. Note also that the case studies mentioned in this chapter were selected from a different pool than the cases used to develop the theoretical model, thus avoiding any potential issues of tautology.



The main research strategy in this study is to use a case study methodology (Yin, 1984; 2003; Eisenhardt, 1989). Building theory from case study research is most appropriate in the early stages of research on a topic (Eisenhardt, 1989: 548), particularly when the research asks 'how' and 'why' questions about a set of contemporary events (entrepreneurial firm growth in this case) within a real-life context over which the researcher has little or no control (Yin, 2003: 5, 13). A case study strategy is all-encompassing—it covers the logic of design, data collection techniques, and specific approaches to data analysis (Yin, 2003: 14).

The main data collection strategy is the comparative multi-case method. This method typically generates empirically grounded theories that are considered to be robust, convincing, and generalizable (Herriott & Firestone, 1983; Yin, 1984; 2003; Eisenhardt, 1989). The overarching comparative design was adopted from Barley (1990: 224); incorporating cross-sectional (synchronic), retrospective longitudinal (diachronic), and parallel (comparative) case studies, relevant to each research question. These three approaches represent three distinct axes of comparison. Combining them enables more explicit examination of the spatial and temporal boundaries of the findings (Barley, 1990).

The first set of research questions (Research Questions 1 and 2) requires cross-sectional/synchronic analysis of entrepreneurs' cognitive schema. Qualitative data were collected through a series of in-depth interviews and analyzed using procedures based on the grounded theory methodology (Glaser & Strauss, 1967; Strauss, 1987; Strauss & Corbin, 1990). This approach is particularly useful for making statements generalizable across members of a class, such as firms (Barley, 1990: 224).

The next set of research questions (Research Questions 3 and 4) warrants longitudinal analysis of multiple case studies. Growth is a process (Penrose, 1959: 88), and we need longitudinal research design to develop a process theory of firm growth (Monge, 1990). This dissertation incorporated longitudinal design by retrospectively studying multiple growth histories. Retrospective studies are an opportunity to explore dynamics as historical patterns of evolving events in context (Leonard-Barton, 1990: 263), and using multiple cases enhances construct validity (*ibid*: 255). This diachronic analysis is crucial for explaining the causal relationships (Barley, 1990: 224).

Finally, the research design needs to include parallel, comparative case studies in different organizational contexts so that the findings can be generalized across settings. This was incorporated into the research design through the theoretical sampling scheme (replication logic), by selecting retrospective cases from firms operating in differing industries. Using parallel studies allows the generalization of synchronic and diachronic findings across similar/different social settings (Barley, 1990: 225).

In sum, the qualitative data collection for this research involved cross-sectional/synchronic interview questions as well as longitudinal/diachronic and parallel/comparative case studies. At this point, two important research issues warrant mention: ontological/epistemological assumptions and the role of the theoretical model in this study.

## 4.2. Theoretical Sampling (Replication) Logic<sup>15</sup>

A critical aspect of building theory from case study research is selecting the cases. Researchers need to study theoretically useful cases, based on theoretical sampling/replication logic (Eisenhardt, 1989; Yin, 2003). Theoretical sampling is sampling on the basis of concepts that have proven theoretical relevance to the evolving theory (Strauss & Corbin, 1990: 177).

According to theoretical sampling/replication logic, cases are selected that either (a) predict similar results (i.e., a literal replication) or (b) predict contrasting results but for predictable reasons (i.e., a theoretical replication) (Yin, 2003: 47). That's why developing the theoretical framework is a crucial step; the framework specifies the conditions under which a particular phenomenon is likely to be found (a literal replication), and the conditions under which it is not likely to be found (a theoretical replication) (Yin, 2003: 47-48). This study will use the theoretical sampling/replication approach iteratively and concurrently throughout the data collection and analysis process, until theoretical saturation is reached (Glaser & Strauss, 1967: 61-62; Strauss & Corbin, 1990: 188).

### 4.2.1. *The sample (case pool)*

The main pool of case sites consisted of 162 entrepreneurial firms whose owners/entrepreneurs have participated in one of the *Quantum Shift* executive programs offered by the Richard Ivey School of Business (Ivey) at the University of Western Ontario. *Quantum Shift* participants are competitively selected from a pool of applicants,

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<sup>15</sup> Yin (2003: 37, 47) is critical of analogies of samples and populations in multi-case studies and suggests that researchers use the term "replication" instead of "sampling". On the other hand, Eisenhardt (1989: 533, 536) explicitly uses the terms "theoretical sampling" and "population". The two approaches are the same in practice and this study uses these terms interchangeably.

and most lead highly successful entrepreneurial firms. These firms operate in all regions of Canada and have revenues above CAD 5 million. Their average number of employees is 330; they range in age from one year to over 100 years; and they have grown more than 20 percent per annum over the past three years. Typical *Quantum Shift* firms are privately owned, although several are public. The case pool also included 25 other high profile entrepreneurial firms whose owners/entrepreneurs are members of the Council or Honorary Council for the Institute for Entrepreneurship at Ivey.

I selected total eleven (11) case sites from the pool so that they represent multiple organizational contexts (e.g., age, size, industry, public vs. private, and geographic location) and demonstrate distinctive growth patterns/trajectories (e.g., growth rates, growth paths, and growth pains). For example, I sampled case sites from diverse industries such as information technology, manufacturing, and finance, while at the same time, trying to include two or three case sites from each industry wherever possible to enhance the validity and generalizability of my findings. Two other case sites in Korea were recruited for the purpose of cross-cultural, cross business systems comparison of the theoretical model.

Some of these firms have suffered from more than one major growth crisis; others have sailed through their growth trajectories without major setbacks. Even though all of the firms studied in this dissertation are currently successful, have managed to survive through growth crises, and have regained their previous growth momentum, their diverse growth patterns/trajectories provide the basis for analytical generalization. These individuals and organizations are not representative of the population of entrepreneurial firms, and are therefore subject to the sample selection bias (cf. Heckman, 1979; Berk,

1983). However, this is of less concern in case research, where the aim is “analytical generalization,” not statistical generalization (Yin, 2003: 32). The more important issue is theoretical relevance (Strauss & Corbin, 1990: 177) and unconstrained access to theoretically rich data.

#### 4.2.2. *Sampling procedure*

A web-based survey was administered to screen potential interviewees for the study. The survey questionnaire included demographic questions about entrepreneurs and firms, and multiple questions related to firm growth patterns, growth trajectories, and firm-level resources (see Appendix 4-3).<sup>16</sup> The web survey instrument was pre-tested on a sample of 7 expert researchers who are not affiliated with the research project, and after a series of revisions, was pilot-tested in October 2006 on a sample of 10 entrepreneurs/entrepreneurial managers.<sup>17</sup> An email invitation for participation was sent to 189 entrepreneurs/entrepreneurial managers including two (2) Korean entrepreneurs during the period between December 2006 and June 2007. The initial email invitation was followed by a reminder by postal mail after two weeks, then an email reminder two weeks after the letter reminder. We received 87 usable responses, resulting in the response rate of 43.9%.

In total, our final sample (case pool) consisted of 94 entrepreneurs/entrepreneurial managers. Among them, 59 respondents were the founder/co-founder of the firm (63%, N = 93). Forty four (44) respondents owned the majority shares of the company (46.8%, N = 93), while six (6) reported no equity ownership (6.4%). The majority of the

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<sup>16</sup> The objective/subjective information collected through the screening surveys will also be used to triangulate data in later phases.

<sup>17</sup> We received 7 usable responses and all of them were included in our analysis.

respondents (54) were the first-time entrepreneurs (57.4%, N = 92), but the sample also included a number of serial entrepreneurs who founded/co-founded more than 3 firms (11 respondents: 11.7%) and had more than 10 years of entrepreneurial experience (11 respondents: 11.7%). Most of the respondents were male (77 respondents: 81.9%, N = 94) and received at least college-level education (64 respondents: 68.1%).

The companies employed average 315 employees, ranging from a single employee to 2,500 employees. The 15 percent of our sample companies reported the annual growth rate greater than 50% (14 respondents, N = 94), while another 30 percent reported the annual growth between 25 and 50% (19 respondents). The sample also included 7 firms with the annual growth rate less than 10% (7.4%). The sample firms' growth represented diverse patterns. While 31 of the respondents indicated that their firm's growth was steady and smooth (33%, N = 91), 21 reported that the growth was bumpy, i.e., ups and downs (22%). The remaining 39 reported that their growth included some steady and smooth periods and some bumpy periods (42%). Some 59% of the respondents (55) indicated that their firms pursued growth even if that was not the most profitable choice, i.e., aggressive pursuit of top-line growth. On the other hand, 39% of the firms (37) tried to maintain the profit level even if that slowed down the growth, i.e., conservative bottom-line focus.

Most of the firms experienced various growth pains/problems in one way or another. The responses indicate that many firms experienced difficulties in adjusting to the growing organization, e.g., "jobs outgrow the people (67%)," "communication difficulties as the number of intra-company relationships increase (53%)," "role confusion among top management (41%)." Other common symptoms of growth pains

included “resource shortages leading to stress and burnout (52%)” and “focus on short-term operational problems (41%).”

As briefly discussed in the foregoing section, I selected 13 interviewees (i.e., case sites) for qualitative data collection from the pool of survey respondents. The interviewees who are entrepreneurs or entrepreneurial managers represent their own firms, i.e., sites for retrospective case studies. The selection was based on the combination of open sampling approach that focuses on ‘incidents’; that is, on various patterns of entrepreneurial firm growth, and replication logic that is closely related to relational and variational sampling based on axial coding, and discriminate sampling based on selective coding (Strauss & Corbin, 1990: 185-188). While the aim of open sampling was to discover as many potentially relevant categories (constructs) as possible, along with their properties and dimensions (Strauss & Corbin, 1990: 181), the replication logic was applied so that the case sites represent multiple industries and both sustained and unsustained growth patterns. A list of the case sites and their demographic information is provided in Table 4-2. More detailed information about these case sites will be discussed Chapter 5.

**TABLE 4-2**  
**Profiles of Case Study Sites**

Company	Location	Interview Date	Title (owns)	Found	Industry	Revenue (# Empl)	G-Rate	G-Path	G-Focus	G-Pains	Remarks
IT-1	Burnaby BC	Sep 4	F/P (>50%)	1988	Other services (IT)	12m (130)	10-25	Mix	G	2,D	
IT-2	London ON	Aug 3	F/CPS (25%)	1998	IT	12.5m (65)	35-50	Bumpy	G		
IT-3	Seoul Korea	Jun 25	F/P	1997	IT	4.5m (50)	10-25	Steady	P	2,4,7,A	
Bio-1	Burnaby BC	Sep 3	F/P (<25%)	1992	Health Care and Social Assistance	4.5m (95)	10-25	Bumpy	G	2,3,5,7,9,A,D	
Manu-1	Delta, BC	Aug 31	NF/P (20%)	1989	Manufacturing	30m (110)	25-50	Steady	P	2,3,A	
Manu-2	Mississauga ON	Jun 22	F/EC (<25%)	1995	Manufacturing (electrolysers, hydrogen fuel cell, etc.)	42m (260)	>50	Bumpy	G	1,2,7,8, A,B,C, D,E	Public Minus growth in 2006
Trade-1	Vancouver BC	Sep 4	F/P (66%)	1993	Wholesale Trade	20m (36)	10-25	Bumpy	G	2,3,4,5,6,7	Cash flow
Trade-2	Vancouver BC	Sep 4	F/EVP (25-49%)	1999	Wholesale Trade	45m (67)	>50	Bumpy	G	6,C,D	
Trade-3	Delta BC	Aug 31	F/P (50%)	1999	Retail trade	8m (12)	25-50	Steady	G	3,5,6	
Finance-1	Vancouver BC	Sep 4	F/P (<25%)	1993	Finance and Insurance	198m (loans) (48)	25-50	Mix	G	2,3,7,	
Finance-2	London ON	Jun 5	CoF/Pcp (<25%)	1998	Finance (Investment management)	17m (33)	>50	Mix	G	1,3,4,5,6,7,9,A,B,C,D	
Media-1	Oakville ON	Jun 19	F/C (>50%)	1989	Information (TV, Web)	45m (370)	10-25	Steady	G	None	
Eco-1	Seoul Korea	Jun 28	F/D (ND)	1995	Consulting (sustainability mgmt)	6m (60)	10-25	Steady	P		



**TABLE 4-2**  
**Profiles of Case Study Sites (cont.)**

**Glossary**

<p><b>Title/Ownership</b>  P: President  C: Chairman  D: Director  SVP: Senior Vice President  EVP: Executive Vice President  CoF: Co-founder  CPS: Chief Product Strategist  Pcp: Principal</p>	<p><b>Growth path</b>  Steady: Steady and smooth  Bumpy: Ups and downs  Mix: Mix of both</p>		
<p><b>Growth focus</b>  G: Pursued growth even if that was not the most profitable choice  P: Maintained the profit level even if that slowed down the growth</p>			
<p><b>Growth pains</b></p> <table border="0"> <tr> <td> <p>1: Inability of the CEO to change his/her role  2: Jobs outgrow the people  3: Communication difficulties as the number of intra-company relationships increase  4: Inability to maintain the team spirit  5: Breakdown of decision making as demand increases  6: Role confusion among top management  7: Resource shortages leading to stress and burnout</p> </td> <td> <p>8. Key people leaving  9: Interdepartmental conflict  A: Focus on short-term operational problems  B: Low morale  C: Declining productivity  D: Poor financial performance  E: Other</p> </td> </tr> </table>		<p>1: Inability of the CEO to change his/her role  2: Jobs outgrow the people  3: Communication difficulties as the number of intra-company relationships increase  4: Inability to maintain the team spirit  5: Breakdown of decision making as demand increases  6: Role confusion among top management  7: Resource shortages leading to stress and burnout</p>	<p>8. Key people leaving  9: Interdepartmental conflict  A: Focus on short-term operational problems  B: Low morale  C: Declining productivity  D: Poor financial performance  E: Other</p>
<p>1: Inability of the CEO to change his/her role  2: Jobs outgrow the people  3: Communication difficulties as the number of intra-company relationships increase  4: Inability to maintain the team spirit  5: Breakdown of decision making as demand increases  6: Role confusion among top management  7: Resource shortages leading to stress and burnout</p>	<p>8. Key people leaving  9: Interdepartmental conflict  A: Focus on short-term operational problems  B: Low morale  C: Declining productivity  D: Poor financial performance  E: Other</p>		

### **4.3.Data Collection Strategies**

#### *4.3.1. Case study protocol and pilot case study*

The protocol is an important tool for increasing the reliability of case study research, and it is essential in multi-case research (Yin, 2003: 67). In general, a case study protocol should include the following items (Yin, 2003: 69): (1) an overview of the case study project, including research questions (Section 1.4), propositions (Section 3.6), and the theoretical framework for the case study (Chapter 3); (2) field procedures including data sources (Section 4.3.3); (3) case study questions (Section 4.3.3); and (4) a guide for the case study report (Section 4.3.3). As a whole, the original research proposal served as the protocol for this study. The synopsis of the case study protocol was reproduced in Appendix 4-1.

Another critical step in preparing for data collection is to conduct a pilot case study (Yin, 2003: 78). This study took a phased approach; each preceding step was a pilot study for the next stage of the research. First, the screening survey questionnaire (Appendix 4-3) and interview guide (Appendix 4-4) were pre-tested and refined. Pilot tests were conducted on a convenience sample of ten entrepreneurs/entrepreneurial managers in case of the screening survey. The qualitative data collection device, i.e., the interview script, was pilot tested on a local entrepreneur.

#### *4.3.2. Data sources and procedures*

The primary data source was semi-structured, in-depth interviews with entrepreneurs or entrepreneurial teams. The interview device was designed to (1) identify the most salient resource bundles in early firm growth based on entrepreneurs' cognitive schema, i.e., to address the first set of research questions (Research Questions 1

and 2); and (2) probe the major growth milestones and the changes in the firm's resource system for retrospective case studies, i.e., to address Research Question 3 and 4.

The interview guide included several general 'grand tour' questions followed by 'prompts' under each general heading (cf. McCracken, 1988). Initially, entrepreneurs were asked to express their understandings in their own language, in order to produce rich narratives. As the interviews progress, more directive questions were asked to ensure that participants cover the concepts included in the *a priori* model. The interview guide is shown in Appendix 4-5.

All the interviews were conducted by the author during a four-month period between June 2007 and September 2007. The author was accompanied by another researcher in three of the interviews. Each interview lasted average one and a half hours. All interviews, except one<sup>18</sup>, were digitally recorded and subsequently transcribed for use in the data analysis. The qualitative data collected through interviews were complemented by quantitative information collected in the screening survey, such as growth patterns and trajectory, and financial performance. Other company documents (e.g., financial reports) and archival data (e.g., media coverage) were also collected where applicable and reviewed to investigate growth dynamics and resource development patterns. This information was also used to triangulate the data collected through interviews. A list of these primary and supplementary data sources are summarized in Table 4-3.

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<sup>18</sup> The interviewee refused the recording due to highly sensitive and confidential nature of the conversation.

**TABLE 4-3**  
**List of Data Sources**

Case	Interviews		Number	Archival Documents
	Founder	Non-founder		Examples
IT-1	President		1	Company website (1)
IT-2	Chief Product Strategist		29	Company website (1), media coverage (28)
IT-3	President/CEO		16	CEO presentation (1), company website (1), media coverage (14)
Bio-1	President		42	Company website (1), media coverage (40), other internet source (1)
Manu-1		President	20	Company website (1), media coverage (18), other internet sources (1)
Manu-2	Executive Chairman			Company website (1), company documents (3), media coverage (1)
Trade-1	President		1	Company website (1)
Trade-2	President		27	Company website (1), media coverage (25), other internet source (1)
Trade-3	President		2	Company website (1), media coverage (1)
Finance-1	President/CEO		1	Company website (1)
Finance-2	Principal		4	Company website (1), company document—sales presentation (1), media coverage (2)
Media-1	President/CEO		32	Company website (1), company documents (3), media coverage (28)
Eco-1	Director		5	Company website (1), media coverage (4)

### *4.3.3. Principles*

Throughout the data collection, I adhered to the three principles recommended by Yin (2003: 97): (1) use multiple sources of data; (2) create a case study database; and (3) maintain a chain of evidence. As to the first principle, Section 4.3.2 documents how multiple sources were used to triangulate the data; this will help minimize potential problems of construct validity (Yin, 2003: 99). Second, the data were organized and documented by creating a database of all the materials created through the data collection process, including interview records, transcriptions, field notes (chronologies), and other related documents. The data collected from screening surveys and other sources were stored in the database, and used for selecting sites and triangulating data throughout the study. Research has found that these databases increase the reliability of the case study (Yin, 2003: 102). Finally, a chain of evidence was maintained among the case study questions, case study protocol, case study database, and the case study report, in the forms of cross-referral and citation (Yin, 2003: 105). These efforts further increase the reliability of the study.

### **4.4. Analytic Strategies**

One of the most significant aspects of the analytic strategy deployed in this study is that data collection, data coding, and data analysis overlap. The data was collected and analyzed concurrently and iteratively. This not only speeded the analyses, but also allowed me to take advantage of flexible data collection by revealing helpful adjustments (Eisenhardt, 1989: 539). The theoretical model guided theory building by facilitating the data analysis process. The tentative propositions helped to focus attention on certain data, organize the entire case study, and uncover alternative explanations (Yin, 2003: 112).

The first part of data analysis was focused on developing categories to address Research Questions 1 and 2, following the open coding procedures of grounded theory building methodology (Glaser & Strauss, 1967; Strauss & Corbin, 1990). Open coding is a process of breaking down, examining, comparing, conceptualizing, and categorizing data (Strauss & Corbin, 1990: 61). The categories (i.e., resource dimensions) were developed by identifying their properties (i.e., attributes or characteristics) and dimensions, (i.e., the location of properties along a continuum) (Strauss & Corbin, 1990: 69). The qualitative data collected through interviews were coded by sentence or paragraph. This process was facilitated by QSR NVivo 8, a computer-based qualitative data analysis package.

*Within-case analysis.* This study is process research and seeks to understand how things evolve and why they evolve in a specific way (Van de Ven & Huber, 1990). Process data consist of events ordered over time, and analyzing and understanding patterns in events is critical to developing a process theory (Langley, 1999). The interpretation was enriched by reading and content analyzing the relevant sequence of incidents in the qualitative data file (Van de Ven & Poole, 1990: 333). In addition, the grounded theory methodology was incorporated through axial and selective coding procedures (Strauss & Corbin, 1990). The grounded theory strategy tends to stay close to the original data and thus provides a basis for high accuracy (Langley, 1999: 700).

*Cross-case analysis.* Cross-case analysis is an important step in the case study. Cross-case comparisons force investigators to look beyond initial impressions and see evidence through multiple lenses, consequently improving the likelihood of accurate and reliable theory (Eisenhardt, 1989: 541). At this stage, I selected categories or dimensions

based on the data analysis, and then looked for within-group similarities as well as inter-group differences. I also sampled pairs of cases from the database based on theoretical considerations in search for similarities and differences between each pair. In this sense, cross-case analysis was in essence a pattern matching between evidences from different cases. The data coded on grounded theory procedures (Strauss & Corbin, 1990) were instrumental at this stage, since they provided several distinct processes that can be compared in depth (e.g., Burgelman, 1983; cf. Langley, 1999).

In summary, the ultimate objective throughout the second part of data analysis was to identify the 'generating mechanism' that drives the process (Pentland, 1999), thereby answering Research Questions 3 and 4.

#### **4.5. Discussion**

There are potential biases originating from the researcher's subjectivity and reflexivity that may interfere in qualitative studies from case selection, data collection, and analysis. I took following steps to maintain my positivist/objectivist stance throughout the research and to ensure unbiased findings.

##### *4.5.1. Measures for validity and reliability of findings*

This study employed extensive measures that assure the quality of the research design: (1) construct validity, (2) internal validity, (3) external validity, and (4) reliability (Yin, 2003: 33). First, construct validity is related to the operationalization (measurement) of the construct (Cook & Campbell, 1977). In this study, construct validity was maximized by combining the evidence from multiple sources, including interviews, company documents, and archival records, i.e., by triangulating the data (Patton, 1987). Construct measures were also grounded by theoretically derived *a priori*

constructs (see Section 3.2) (Eisenhardt, 1989). The chain of evidence was established by including case study chronologies (McPhee, 1990: 402) and case study reports, following Yin's (2003: 35) recommendations. In selected sites, a team of researchers conducted the data collection interviews; this is the investigator triangulation recommended by Patton (1987).

Second, internal validity relates to the level of confidence one has in the conclusions drawn in the given sample; in other words, the robustness of the study. In this study, internal validity were achieved by adhering to the case study protocol (see Section 4.3.1), and by integrating various analytical techniques and strategies (see Section 4.4). The data collection strategy also added to internal validity, because multiple data collection methods provide a solid basis for substantiating constructs and propositions (Eisenhardt, 1989). Divergent perspectives from multiple investigators during the design phase increased the richness of the data, and at the same time, converging observations enhanced confidence in the findings (Eisenhardt, 1989: 538).

Third, external validity refers to the domain to which we can generalize the relationships found in the study (Yin, 2003: 34). In this study, I pursued analytical generalization through a synergistic multi-case design based on theory-based replication logic (see Section 4.2). In addition, the propositions developed in this study provide a basis for statistical generalization through future empirical studies.

Finally, reliability refers to the way a study is conducted—minimizing errors and biases so that, ultimately, the study can be replicated (Yin, 2003: 37). In essence, all the tactics discussed above contributed to the reliability of the research; for example, using a multi-case, multi-source, multi-investigator, and multi-method research design. Using a



clearly defined case study protocol and developing a case study database also enhanced the reproducibility of the study (Yin, 2003: 38). These tactics are closely related to the diagnostic methods for integrating longitudinal case studies in a multi-case setting (McPhee, 1990). Cross-case searching tactics also improved the likelihood that the theory will be accurate and reliable (Eisenhardt, 1989: 541).

#### *4.5.2. Trustworthiness of the research*

To further assure the trustworthiness of the research, I took several steps following Lincoln and Guba's (1985) recommendations on top of the measures explained in the foregoing section (e.g., data triangulation and investor triangulation). First, I carefully maintained the chain of evidences by managing our data, including contact details, interview transcripts, research notes, and other related documents using a computer-based qualitative data management program. Second, member checks (cf. Spradley, 1980) on the initial interview data were conducted by inviting feedback from a number of interviewees on the case description and the model developed based on the qualitative data, through which the essence of the findings was affirmed.

Finally, the inquiry audit was conducted by an independent qualitative researcher who was not involved in the study. The auditor examined the process of inquiry and reviewed the records including interview transcripts, company documents, case descriptions, and Nvivo coding to insure that no critical errors in interpretation were made. Through this audit, I solicited critical questions about the data collection and analytical procedures and discussed emerging patterns in the data. The auditor concluded that the interpretations were reasonable and reflected the data, confirming the dependability of the data and the plausibility of the conclusions.

#### 4.5.3. *Ethical considerations*

This research process had ethical requirements because it involved the collection of contextually deep and longitudinally rich qualitative data (Pettigrew, 1990: 286). The research design was approved by the University of Western Ontario's institutional research ethics review board. The ethics approval notices (025/06 BREB: web-based survey; 020/07 BREB: interview device) are attached as Appendix 4-6. This study also conformed to the code of ethics suggested by many previous qualitative researchers (e.g., Pettigrew, 1990; Christians, 2000) as follows.

First, I made efforts to pursue value-free science throughout this study. I tried to remain objective and avoid judging or deliberately interpreting any event, decision, individual, or organization. All the research participants were clearly informed of the nature and consequences of the study. Their point of view, and their freedom to participate or not were fully respected. Respondents were advised that they had the right to choose not to cooperate with investigators, even after they had agreed to participate. The respondents' clear consent was sought before recording the interviews.

This study also conformed to Canada's Personal Information Protection and Electronic Documents Act (PIPEDA) and Privacy Act. Confidentiality was assured and all data were secured or concealed, and was written in this dissertation behind a shield of anonymity (Christians, 2000: 139). Any mention of future intentions was not included in this dissertation to protect respondents' business and career interests. This dissertation will be forwarded to research participants before publication to ensure that it does not contain factual errors or divulge information of commercial value to competitors (Pettigrew, 1990: 286).

## CHAPTER 5. DATA

This chapter describes the data collected through qualitative interviews. Section 5.1 describes the case sites, including firm growth patterns and interviewee demographics. Section 5.2 briefly outlines the 13 case studies.

### 5.1. Profile of Case Study Sites

The case study sites were deliberately chosen to represent various regions and industries. The study sample comprises eleven Canadian entrepreneurial firms and two Korean entrepreneurial firms. Korea and Canada have distinctly different cultures (c.f., Hofstede, 1980; 1983; 1991) and business systems (c.f., Whitley, 1999; 2002), therefore they provide a good setting for theoretical comparison. The Korea–Canada context offers replication logic, even though the two cases may not warrant theoretical generalization. Seven of the Canadian firms are located in the Greater Vancouver Area in British Columbia (BC) and four are located in Ontario (ON): two in London and two in the Greater Toronto Area. Both the Korean firms are located in Seoul. The Korean entrepreneurs were interviewed in June 2007 and the British Columbia entrepreneurs were interviewed in late August 2007. The Ontario entrepreneurs were interviewed throughout June and August 2007.

These 13 firms represent various industries: information technology (3), biotechnology and healthcare (1), manufacturing (2), wholesale and retail trade (3), finance (2), media (1), and environmental management consulting (1). In the remainder of the dissertation, I use industry pseudonyms to assure the confidentiality and anonymity of these 13 case study sites. The firms will be referred to as IT-1, IT-2, IT-3, Bio-1, Manu-1,

Manu-2, Trade-1, Trade-2, Trade-3, Finance-1, Finance-2, Media-1, and Eco-1. The profiles of the case study sites can be found in Table 4-3.

### *5.1.1. Characteristics of the Case Sites*

The case study sites, except for IT-2 and Eco-1 that were recruited through personal connections, were chosen from a pool of 94 survey respondents based on theoretical sampling logic, so that these firms represent various patterns of entrepreneurial firm growth. In 2007, the firms ranged in age from 8 years to 19 years; the average age was 12 years. The 2006 revenue distribution of the sample was wide, from a low of 4.5 million dollars to a high of 45 million dollars.<sup>19</sup> Finance-1 used loans under management as a performance measure, rather than revenue; in 2006 their loans under management totaled 198 million dollars. The 2006 profits (EBITDA) of these firms ranged from -2 million to 9 million dollars, and the 2006 total assets ranged from 1 million to 7.3 million dollars. In 2006, the smallest case study firm employed 12 employees and the largest had 370 employees. As of 2007, when the data were collected, only two firms (Bio-1 and Manu-2) were publicly traded companies. Bio-1 was listed on the Toronto Stock Exchange and Manu-2 was listed on both Toronto Stock Exchange and NASDAQ. Table 5-1 shows selected descriptive statistics for the case study sites.

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<sup>19</sup> Unless otherwise indicated, all the currencies in this study are Canadian dollars (CAD). To simplify comparisons, the exchange rates used in this study were: 1 Canadian dollar (CAD) = 1 US dollar (USD), and 1 Canadian dollar (CAD) = 1,000 Korean won (KRW). Actual exchange rates during the study period might have been different.

**TABLE 5-1**  
**Descriptive Statistics of Case Sites**

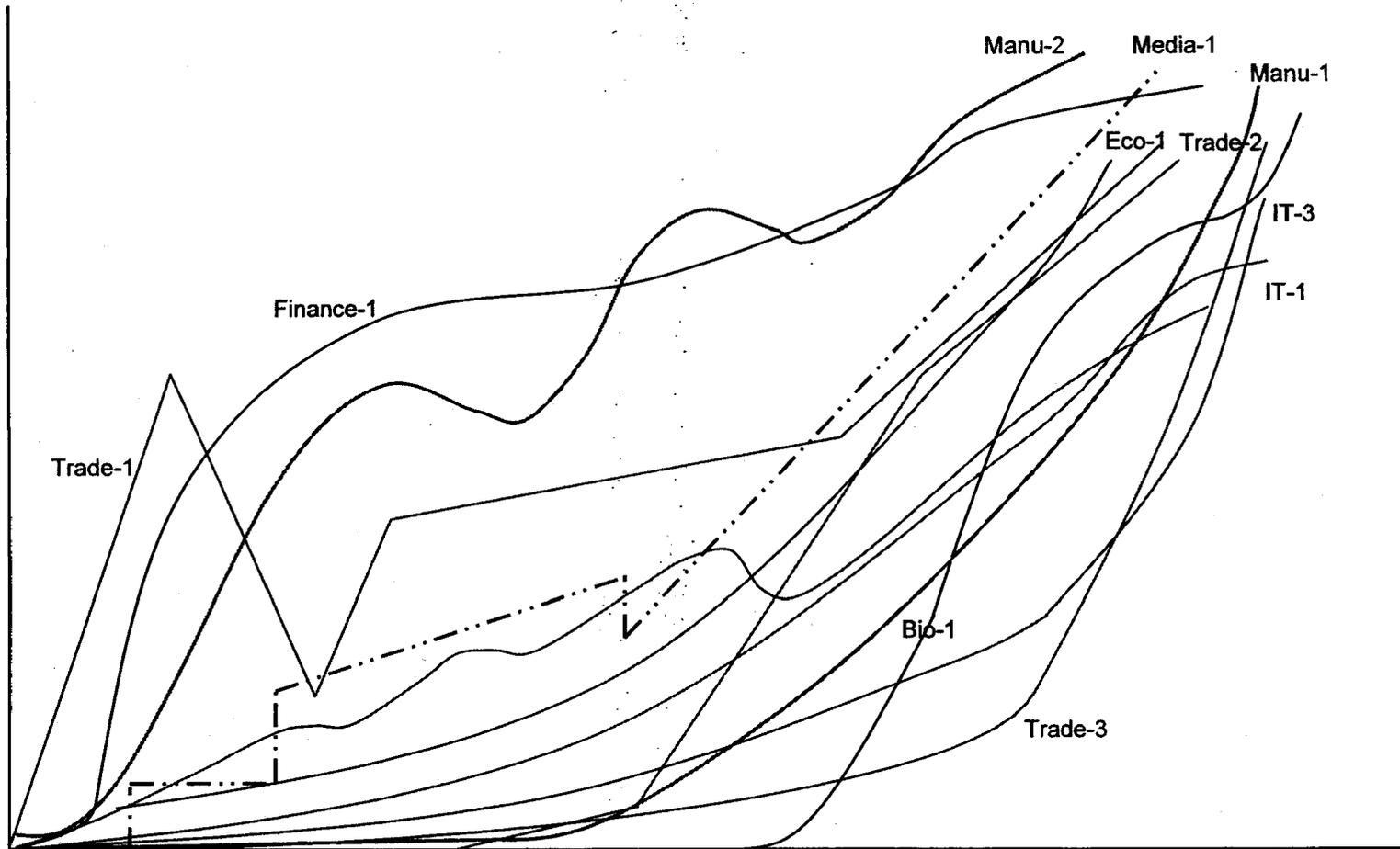
2006	Minimum	Maximum	Remarks
Revenue (\$)	4,500,000	45,000,000	Not including Finance-2
Profit (EBITDA: \$)	-2,000,000	9,000,000	
Total Asset (\$)	1,000,000	7,300,000	
Number of Employees	12	370	

### 5.1.2. Growth Patterns

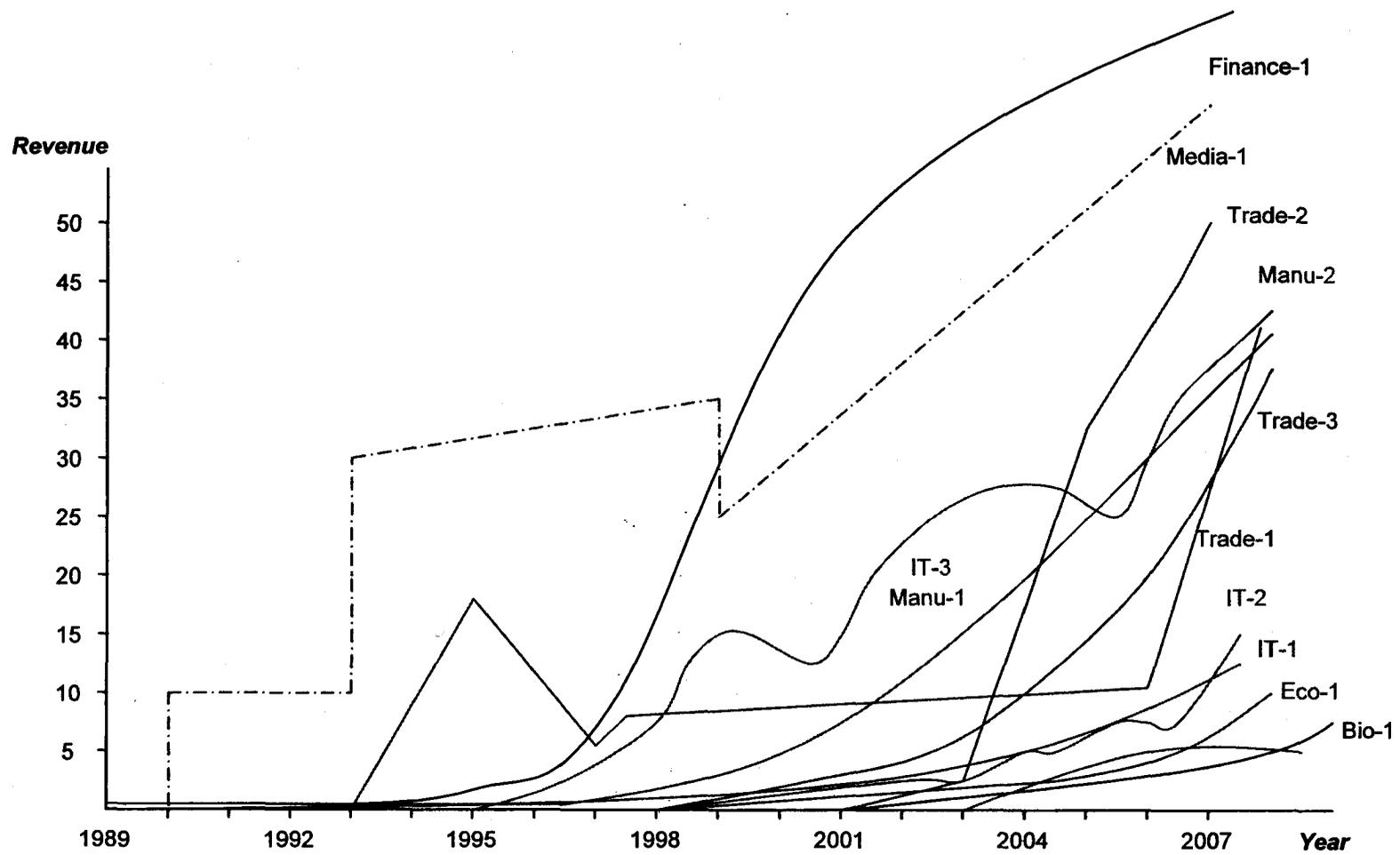
Three firms (Manu-2, Trade-2, and Finance-2) reported an average annual growth rate of over 50%, four firms (IT-2, Manu-1, Trade-1, Finance-1) reported an average annual growth rate of between 25% and 50%. The average annual growth rates of the six other firms (IT-1, IT-3, Bio-1, Trade-3, Media-1, and Eco-1) were between 10% and 25%. The growth patterns also varied: five firms reported that their growth had always been steady and smooth, five reported that they had experienced bumpy growth, and three reported that their growth paths were a mix of smooth and bumpy. Figure 5-1 reproduces the interviewees' illustrations of the growth paths of their firms.

This figure is not scaled so it should not be used for direct comparisons, but it does provide a good starting point for the research since it represents the entrepreneurs' perceptions of their firms' growth histories and their expectations about future growth. These growth charts also reveal that the interviewees (except for Finance-1 and Finance 2) used revenue as the single most important indicator when they drew their growth paths. For comparison purposes, I re-scaled the growth paths based on timeframe (X-axis) and revenue (Y-axis) and reproduced the diagram in Figure 5-2. Figure 5-2 shows that the 13 case sites have varying rates and patterns of growth.

**FIGURE 5-1**  
**Growth Patterns (direct reproduction – not scaled)**



**FIGURE 5-2**  
**Growth Patterns (scaled)**



The firms also have different growth orientations: 10 firms reported that they pursued growth, even at the expense of profits (i.e., focusing on the top line). The other three firms reported that they tried to maintain profits, even if that course of action slowed growth (i.e., focusing on the bottom line). In sum, the firms varied significantly along the most important theoretical dimension of this study; namely, growth. Hence, the case sites are a good basis for theoretical sampling and replication logic (cf. Eisenhardt, 1989; Yin, 2003).

### *5.1.3. Growth Pains*

Eleven case study participants completed the growth pain-related questions in the web survey. They indicated that their firms had experienced the growth pains and problems commonly identified in the literature (cf. Slatter, 1992). In order of frequency, the most commonly cited growth pains were: jobs outgrow people (64%: 7 firms); communication difficulties as the number of intra-company relationships increase (55%: 6 firms); resource shortages leading to stress and burnout (55%: 6 firms); breakdown of decision-making as demand increases (36%: 4 firms); and role confusion among top management (36%: 4 firms). Researchers (e.g., Slatter, 1992) have argued that growth pains lead to frustration and stress, causing poor decision-making, declining morale, and conflict. The respondents to this study described the negative effects of their growth pains and their experiences mirror those suggested by the relevant literature. For instance, the study respondents indicated that growth pains had forced them to focus on short-term operational problems (39%: 5 firms), lowered morale (15%: 2 firms), created inter-departmental conflict (15%: 2 firms), and led to the loss of key people (8%: 1 firm).



These effects typically undermine firm performance, manifesting in declining productivity (23%: 3 firms) and poor financial performance (40%: 5 firms).

Table 5-2 shows the growth pains and problems experienced by the 11 case sites.

This pattern is consistent with that of the remaining 83 firms in the case pool.

**TABLE 5-2**  
**Growth Pains and Problems Experienced**

Cases	Growth Pains/Problems														
	1	2	3	4	5	6	7	8	9	A	B	C	D	E	
IT-1		■											■		
IT-2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
IT-3		■		■			■			■					
Bio-1		■			■				■				■		
Manu-1										■					
Manu-2	■							■		■			■	■	
Trade-1			■												
Trade-2					■							■	■		
Trade-3		■	■	■	■	■	■							■	
Finance-1				■	■	■	■								
Finance-2	■	■	■	■	■	■	■		■	■	■	■	■	■	
Media-1															
Eco-1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
% (N=11)	18	64	55	27	36	36	55	09	18	45	18	27	45	18	

\* Black cells denote the growth problems/pains (see below for the list) experienced by case firms. For example, IT-1 reported that the company experienced problems/pains 1 (“jobs outgrow the people”) and D (“poor financial performance”). Entrepreneurs from IT-2 and Eco-1 did not respond to this question.

- |   |   |
|---|---|
| 1. Inability of the CEO to change his/her role                                      | A. Focus on short-term operational problems |
| 2. Jobs outgrow the people  | B. Low morale                               |
| 3. Communication difficulties as the number of intra-company relationships increase | C. Declining productivity                   |
| 4. Inability to maintain the “team spirit”  | D. Poor financial performance               |
| 5. Breakdown of decision making as demand increases                                 | E. Other                                    |
| 6. Role confusion among top management  |   |
| 7. Resource shortages leading to stress and burnout                                 |   |
| 8. Key people leaving   |   |
| 9. Interdepartmental conflict   |   |

#### *5.1.4. Interviewee Characteristics*

All the interviewees, bar one, had founded their firms. The Manu-1 interviewee joined the firm as CEO in 2003, but he had previously been a member of the board of directors for over 10 years and was very knowledgeable about the firm's early development and growth. All the interviewees were male and aged between 35 and 60 years. Most of the interviewees were highly educated, while two interviewees had spent relatively little time in formal education before making their way into entrepreneurship.

For five founder/co-founder interviewees, the current venture was their first start-up experience. Seven others had previous entrepreneurial experience, having founded/co-founded from one to more than three other firms. The 'experienced entrepreneurs' had different lengths of experience ranging from one year to 10 years. Seven interviewees had previously worked in an industry related to their current venture. Many of the interviewees had worked in large corporations and others had spent time in small and medium-sized enterprises. The years of full time work experience ranged from none (1 respondent) to over 10 years (5 respondents).

Three interviewees reported that they owned majority shares in the company, three owned between 25% and 49% of shares, and five owned between 1% and 24% of shares. Two Korean interviewees were reluctant to share ownership information. See Table 5-3 for the demographic characteristics of the interviewees.

**TABLE 5-3**  
**Interviewee Characteristics**

2006	Minimum	Maximum	Remarks
Age	35	60	
Education	High school	Post graduate	
Entrepreneurial experience	0	>3	Number of previously founded firms
Industry experience	0	>10	Years of business experience
Ownership	1-24%	>50%	

Most interviewees reported that they had been motivated to set up the venture because they wanted to run their own business (60%: 6 respondents) or implement a new idea, invention, or concept (50%: 5 respondents). Three respondents had set up their venture out of necessity because they had been, or expected to be, dismissed from their previous organization. One venture was a spin-off from a university research project. Only one interviewee said that he founded the venture to pursue his wealth ambitions.

Ten interviewees completed the planning-related questions in the web survey. Six said that they had a written business plan when they started the company and three said that they had at least an informal plan or a roadmap in their mind. One interviewee said he did not have any business plan when he started the company. However, all these interviewees reported that they had an ongoing long-term plan for their businesses, either quarterly (30%: 3 respondents), annually (60%: 6 respondents), or bi-annually (10%: 1 respondents). Table 5-4 summarizes the founding motivations and planning activities of the case study firms.

**TABLE 5-4**  
**Founding Motivations**

Cases	Founding Motivations								Planning
	1	2	3	4	5	6	7	8	
IT-1					■				
IT-2									
IT-3				■					
Bio-1						■			
Manu-1	Non founder								
Manu-2		■			■	■			
Trade-1									
Trade-2								■	
Trade-3	■					■			
Finance-1	■				■			■	
Finance-2	■	■					■		
Media-1					■				
Eco-1									
% (N=11)	30	20	0	10	60	50	10	20	

\* Black cells denote the founding motivations (see below for the list) for case firms. For example, IT-1's founding motivation was the founder's "desire to run his/her own company." Entrepreneurs from IT-2 and Eco-1 did not respond to this question.

1. Actual or expected dismissal from your previous organization
2. Reached a critical point in your life
3. Opportunity for an attractive deal
4. Spin-off from a university research project
5. Desire to run your own company
6. Desire to implement a new idea, invention, or concept
7. Wealth ambitions
8. Other

The web survey results indicate that entrepreneurs/entrepreneurial managers generally spend most of their time on issues related to general management (mean = 2.36), sales (mean = 2.27), and human resources (mean = 1.64). The less time-consuming issues are marketing (mean = 1.36), operations (mean = 1.00), research and development (mean = 1.00), government relationships (mean = 1.00), finance and accounting (mean = 0.91) and information technology (0.89). This result is likely because respondents delegate these matters to others.

## 5.2. Case Studies

### 5.2.1. *IT-1*

IT-1 is based in Vancouver, BC. It provides sales and marketing database services in the automotive sector and its clients are mainly auto dealerships and some car manufacturers. IT-1 has a database of over 500,000 repair shops, built on a proprietary contact management system that the firm began developing in 1994. With this database, IT-1 provides marketing and sales services for 3000 car dealerships, for which it earns a monthly service fee. The firm's revenue in 2006 was \$12 million: 45% from Europe, 35% from the US, and 20% from Canada. In 2006, the company had about 120 employees and operations in Canada, the US, the UK, and Belgium.

The two co-founders met through a personal relationship and in 1988 they bootstrapped the startup with "10-15 credit cards maxed." The firm's growth has mostly been through geographic expansion; they initially expanded to Calgary (1990), Edmonton (1991), Toronto (1992), and Montreal. Then, in 1994, they set up operations in the UK and the US. Each time, one of the co-founders (interviewee) "would live there and open the markets" while the other "would be back in Vancouver running the operations, accounting." "It's almost like a brand new start-up. I would go there, validate that there was an opportunity ... then I would drive the new business. I'd be hiring the people, training them, signing up all our initial contracts. Making sure that our sales team was trained and motivated and that would typically take a year to two years ... building up critical mass that the company could continue to grow on its own." This proved to be a smart business strategy because "a key part of the success is the culture of the business."

In September 1999, the co-founders sold the business to a venture capital-backed dot.com in San Francisco which quickly grew the firm from 100 to 350 employees in six months. Things started to go badly when the market suddenly changed in March 2000. The new owners tried to shift the business model because they "realized that the IPO wasn't going to happen based on the current business mode." In April 2001, the original co-founders re-acquired the business. At that time, it had about 150 employees and a monthly burn rate of about \$250,000. The co-founders restructured the company to 80 employees and were breaking even within six months.

Since then, annual revenue has grown from \$4 million in 2001 to \$12 million in 2006, an average growth rate of 10% to 25% per annum. "Our growth strategy today is to self-fund ... based on our existing financial resources." "We're looking at expanding the business organically in our existing geographic areas (by) bringing more services into our customer base" and by expanding further in the US and Europe.

#### 5.2.2. *IT-2*

IT-2 was founded in 1998 in London, Ontario. It provides software applications and plant-wise solutions to high-volume manufacturers, mainly in the automotive industry. The company is increasingly expanding into the consumer goods and heavy equipment industries. Its client list includes Ford, Toyota, and Gillette. About 85% of the firm's revenue comes from software licenses and maintenance (20% of the initial sale), the rest from services. In 2006, the company had 65 employees and \$12.5 million in revenue.

IT-2 was founded by three partners as a spin-off from the lead entrepreneur's (interviewee) previous venture. Two co-founders, who were partners in the previous

venture, invested \$500,000 each in seed capital. The lead entrepreneur soon bought out the third partner, who had been responsible for the technology side of the business. The remaining two partners decided to financially separate into two companies in 2000, leaving one partner with the original company and the lead entrepreneur with a new one (IT-2). To achieve this, the lead entrepreneur brought in a venture capitalist raised about \$19 million dollars through multiple rounds until 2002. Since then, the business has been self-sustaining without any external funding.

The firm's first "real product" didn't hit the market until 2001. Until then, the company "sold the idea" and engaged in several custom system development projects to fund initial product development. Early customers included Magna Group and Ford. IT-2 managed to persuade Ford to invest in the initial venture capital round, providing them with an important endorsement. Since then, the firm's growth has been remarkable. In 2006, the company was named to Deloitte's Technology Fast 50, based on the eightfold revenue growth in five years.

In 2003, IT-2 experienced a crisis when it had major product stability issues. They almost lost two anchor customers, Toyota and Ford. "That came from trying to grow faster than we should have. That came from trying to over-promise and couldn't deliver because of the resources. We survived through it, but it stalled some revenue, it put us in crisis from a reputation point of view, too." "But it made us a better company. We are probably the most robust, most scalable, and most sound product out there now, because we got through that."

In 2006, IT-2 changed direction, shifting its business model from a technology platform business (configured to a specific problem) to a higher margin application

business (out-of-the-box solutions). This move was designed to boost growth and it demanded a fundamentally different organization. The new business model would need more business-oriented employees and fewer technicians and the firm consequently reduced its workforce from 80 to 65 employees. A new CEO arrived in March 2006, a disastrous appointment of someone who "didn't understand small business dynamics." The new CEO exited in October 2006. After 18 months of turnaround (6 months longer than planned), the lead entrepreneur now feels the company is finally back on track for fast growth. "If we'd tried to not change the business model, it would have been an OK business, but we went to make it a great business." In 2007, the company was once again named to Deloitte's Technology Fast 50, this time based on the 5-year revenue growth less than half of what it was in 2006.

### 5.2.3. *IT-3*

IT-3 is an Internet security software venture founded in 1997 and based in Seoul, Korea. IT-3 sells email and electronic message records management solutions and IT compliance solutions. Its private sector client list includes Samsung Electronics, Hyundai Motors, and LG Electronics. Its main public sector clients are Central Intelligence of Korea and the Blue House of Korea. About 95% of its revenue comes from selling and servicing software packages, the rest is generated through R&D projects for government agencies and telecommunications conglomerates. In 2006, IT-3's revenue was about \$4.5 million and it employed about 50 personnel, half in R&D.

The six co-founders were fresh out of the Department of Industrial Engineering at Seoul National University when they decided to start their own venture in 1996. They bootstrapped the seed funding of \$50,000. The lead entrepreneur (interviewed)



recollected the first two years as "full of ideas and no direction." Initially, they developed an enterprise resource planning (ERP) software package for small to medium-size enterprises. They quickly abandoned this idea when they realized that, although they had technical expertise, they lacked the business experience and consulting capability needed to turn technology into a viable business. Within a year, they found themselves with "three different software packages (and) one developer for each package."

In 1998, they shifted the business model to email security software based on network monitoring/analysis technology acquired through a government-funded R&D project. They launched their first product in May 1998. Even then, the six co-founders had different ideas about the company's direction. The lead entrepreneur finally decided to dissolve the partnership in 1999. This process consumed a significant portion of the company's limited cash reserve and it triggered the departure of many key employees. "They could not accept the fact that co-founders, whose contributions were limited, were paid handsome amount of money only because they were there at the day one." They demanded share positions and eventually left the company. At the end of this turbulent period, only six people remained.

Since then, IT-3 has been all about focus. First, the firm concentrated on winning anchor customers, such as LG Electronics and Samsung Electronics. It then used these relationships to leverage other customers within its Chaebol (Korean business group) networks. The company's software sales have grown from \$100 thousand in 1998, to \$500 thousand in 1999, to \$1 million in 2000. In May 2001, the company raised \$500 thousand from a venture capitalist at a valuation of \$5 million. Soon after, IT-3 merged with one of the major publicly-listed software houses in Korea through a stock-swapping

arrangement, to become a division of the larger company. IT-3's owners had hoped to take advantage of the larger firm's capital and sales network, but true integration never really happened. IT-3 remained an autonomous division for about five years, until it became independent in 2006.

Since then, revenue growth has been relatively slow, but nonetheless steady and completely self-funded. The lead entrepreneur feels that the company has laid a solid foundation of financial and human resources and is well-positioned for quantum growth now that its major products have reached the Version 5 maturity standard typically expected in the software industry. The company set up a subsidiary in Silicon Valley in 2006 and began to sell its flagship software package to major accounts in the public and private sectors in the US and Mexico.

#### 5.2.4. *Bio-1*

Founded in 1992, Bio-1 is a Vancouver-based public company that develops and manufactures diagnostic tests for the point-of-care testing marketplace. Its proprietary technology was originally based on an idea licensed from the University of British Columbia in the early 1990s. Since then, the technology has been developed through in-house R&D and now consists of two components: a phone-sized testing instrument and individual one-use tests. Each test takes about 15 minutes, is easily administered by any user, and gives exactly same results as more expensive laboratory tests. Bio-1 has received the US Food and Drug Administration (FDA) clearance for three tests: for heart attack, congestive heart failure, and flu. As of 2006, Bio-1 had about \$4.5 million in revenue and 95 employees, 25 of whom were researchers.

Bio-1's founding process was unique among the case study sites because the co-founders had previously been directors of a public mining company. In fact, the mining company was nothing more than a shell; it had no employees and just \$500,000 left over from previous mining ventures. The founders used this company as the vehicle to launch their new biomedical venture. "It enables you to have quick access to capital and a structure so that if you want to take advantage of an opportunity you have the cash, you have the structure there, so you can seize the opportunity and get control and move forward quickly." The two co-founders had no experience in the biomedical industry, but they saw certain similarities between it and the mining sector in terms of investor characteristics: "years of hard work with no return."

Initially, the co-founders invested \$30,000 in an R&D project at the University of British Columbia (UBC), however this project was shelved in 1996. Eventually, they were able to commercialize a back-up project that had been conducted by another UBC team. Until the firm earned its first revenues in 2003, the lead entrepreneur had to continually raise money, like a "treadmill," as the company's average cash reserve could only support its burn rate for three or four months. In the beginning of 2000, Bio-1 recruited an industry CEO and the lead entrepreneur stayed on the board of directors. Unfortunately, the new CEO didn't perform to expectations and six months later the company installed an interim CEO who also quickly resigned. By the end of 2000, the company was out of money and executives. Its stock price plummeted as some institutional shareholders decided to sell at a loss. Its R&D project was also a disaster.

In 2001, the lead entrepreneur stepped back into the CEO position and tried to salvage the situation by laying off half the workforce and concentrating on FDA approval.

However, it was very difficult to raise funds in the post-September 11 market. Bio-1 entered bankruptcy protection, but with "a pretty good plan to get it out." The company emerged from bankruptcy protection in six months and won its first FDA approval at the beginning of 2002. In 2003, Bio-1 began selling its products through distributors and sales took off quickly. The company has since secured a partnership with 3M for a wide variety of infectious disease tests. In March 2006, the company revamped its whole board of directors and recruited "world class" members. The new board members have invested in the company and this transaction was accompanied by \$12 million of institutional financing. With these arrangements complete, the lead entrepreneur has stepped down as CEO and is looking forward to rapid future growth.

#### 5.2.5. *Manu-1*

Manu-1 is based in Delta, BC and manufactures an electric radiant heating product that warms stone, tile, or engineered wood floors. The company's patented, low wattage, heat-resistant wire mat heats the surface evenly and is easier to install than alternative products. Manu-1 positions the product as an energy-efficient, luxury, comfort product or a secondary heat source. The company has three regional offices and more than 250 distributors across North America. About 75% of its sales come from the US. In 2006, the company had \$30 million in revenue and 110 employees, 35 of whom manufacture the product in-house.

The original electric radiant heating technology was developed by an inventor in the late 1980s as a heating mat "for secretaries at their desks to keep their feet warm." The company failed to market the product and "it wasn't going anywhere." Then, an entrepreneur in the tile business recognized that the system could warm cold hard

surfaces. The new technology was timely as there had been some high-profile lawsuits associated with failed hot water pipe heating systems. When the entrepreneur bought the company in 1991, Manu-1 had three employees, \$250,000 in revenue, and was losing money. He strengthened the sales and marketing expertise of the board to help solve the problem of "how to market the product." The board hired a new general manager and remained heavily involved in developing business plans.

The new general manager came from a large manufacturing company and he concentrated on streamlining the manufacturing process and managing costs. But sales still didn't take off. The problem was that tilers and electricians had to collaborate to install Manu-1's product, and these trades do not traditionally work together. In addition, the original connection box that linked the heating mats to a power source was expensive and hard to work with. It wasn't until late 1995 that the company's easy-to-install cold lead connection system was accepted by the Canadian Electrical Code and the US Electrical Code. The new system reduced manufacturing costs by 30%.

The interviewee came on board as CEO and investor/partner in 1997. At that time, the company's revenue was about 2 million dollars. "It wasn't growing the way it should have been growing at that point. (The owner) realized that a change had to be made and the Board agreed (that we need to have someone in sales and marketing)." Since then, the company has concentrated on marketing and on making the product easier to install and use. For example, it introduced custom mats in 1997, a regulated thermostat in 1999, and a seven-day programmable thermostat in 2001. In 1998, Manu-1 also introduced an "Authorized Distributor Program" and a "Certified Installer Program." Sales finally responded and the company achieved \$10 million in revenue in 2001.

Since 2002, the company has expanded into the US market by setting up offices and hiring sales people. By 2006, it had 22 sales representatives in the US; its US sales were over \$25 million and growing at about 30% each year. This success was partly due to a boom in the construction of new homes and high rise condominiums in urban centres. But the biggest factor by far, according to the CEO, was that, "we figured out how to sell our product." "The technology hasn't changed a lot in the 10 years. The marketing and some subtle changes to make it easier to install have been what we focused on."

#### 5.2.6. *Manu-2*

Manu-2 is a fuel cell technology company located in Mississauga, ON. Its two core areas of business are on-site hydrogen generation systems and power systems, including fuel cell power products. Its client list includes automobile and part manufacturers such as GM, Toyota, and Johnson Matthey. The company has subsidiaries/offices in Germany, Belgium, Russia, Japan, China, India, and the US. In 2006, the company had \$42 million in revenue and 260 employees.

The company was founded in 1995 by three partners with complementary skills in technology marketing, engineering, and finance/entrepreneurship. The idea for the venture originated in the oil shocks of the 1970s when the lead entrepreneur became interested in alternative power sources and energy security. He took his formal education in business and technology, then founded and sold a medical courier startup "for a test run", before launching his alternative power business. The lead entrepreneur met one partner through his Masters of Engineering program, the other partner was his next door neighbour. They each contributed \$10,000 to the seed capital of \$30,000. In 1997, their first round of venture capital funding brought in \$1.5 million, with an evaluation of \$7

million. In 1999, a follow-on equity round brought in \$7 million, with an evaluation of \$22 million.

The firm's early development was "organic, something that grows out of opportunities and market situation." In the early days, Manu-2 could not sell fuel cells because there was no supply chain for them, so they began by providing test equipment for fuel cell laboratories. In 1996 they signed their first contract: "we took a picture of it and put it on our website and we said we had a product." A Californian company saw the website and ordered the second machine. Then, GM came calling and purchased the first machine. GM were taking something of a risk "because there was very limited offering for that kind of thing" at the time. Manu-2 had to rebuild the machine three times before shipping and lost a lot of money, but nonetheless the machine was a huge success for GM. "GM came back for two more and then came back for sixteen more, and their facility was up and running and it was completely swamped with our trademark on their floor." Then, "other people kept visiting the GM facility and were impressed with the machines and what they could do." It wasn't long before Manu-2 had contracts with automobile manufacturers such as Toyota and suppliers such as Johnson Matthey.

The success of the laboratory test equipment gave Manu-2 the financial resources and credibility to return to their original idea of manufacturing fuel cells. They also added electrolyzers, a reverse chemistry technology, to their product offering. Each product was at a different stage of maturity, "so we always believed in a portfolio approach." The company went public in 2000. The initial public offering (IPO) raised \$76 million at a market capitalization of about \$500 million. In 2001, GM bought 27% of the company to become its largest shareholder. Manu-2's growth has been

extraordinary. In 2003, it was one of the top Profit 100 Canada's Fastest Growing Companies, based on a compounded annual growth rate of over 100% for the period 1997 to 2002. The company also appeared on the Deloitte Technology Fast 50 in 2003, based on a five year growth rate of over 2,000%, and remained on the list until 2006. In 2006, Manu-2 appointed a new CEO from Toyota. "We are in that stage – consolidate the growth we've got, making sure we've got positive margins, reducing fixed costs and then achieving break-even, and then resuming growth under a break-even situation."

#### 5.2.7. *Trade-1*

Trade-1 distributes board sports and lifestyle clothing and products throughout Canada from its base in Vancouver, BC. Recently, the company also entered the flooring business with a subsidiary spin-off. In the 2006 fiscal year, the firm's revenue was about \$20 million and it had 36 employees.

In 1993, the founder saw the "N" clothing brand on a college graduation trip to California. The brand was not available in Canada at the time and he brought a few items home, where they were an instant hit with his friends. He made another trip to California, bought more clothing, which he quickly sold to his friends, and wondered "how can I get this product into Canada?" He discussed the idea with a family friend who was a veteran in the apparel industry. Together they developed a business plan, pitched the plan to the "N" company, and became their exclusive distributor in Canada. The two became business partners and the senior partner brought in an investor, who became the third partner. Together they started the business with \$60,000. The founder has been the president from the beginning, while the other two partners have acted as part time



consultants. The partners did not take any salary for the first six months, until the company turned a profit.

The original business plan was to achieve \$400,000 in sales in their first year of operation, but in that year revenue topped \$2 million, then \$10 million in 1994, and then \$13 million in 1995. But "it was such a popular brand and over-distributed it just crashed after that." Sales declined to \$6 million in 1996 and \$2 million in 1997. The founder and president persisted, despite his poor sales figures—he was "emotionally attached to the products and kept saying it's coming back." By 1997, the company was losing \$30,000 a month and the founder decided to diversify his brands and distribute more products. He laid off 10 people to reduce his workforce to seven. Even though the company struggled, the founder believed he could put Trade-1 back on track because the company had a reputation for customer service and great communication.

Trade-1 managed to increase its sales to \$8 million by 2000. However, growth flattened and revenue stagnated at around \$10 million for the next six years. The management team responded by developing and implementing a five year plan. Based on the plan, the company built an infrastructure to support growth, created an organizational chart, and started to hire into that structure. It also implemented better operational systems. This new infrastructure, along with "better sales managers and better products," paid off immediately. Trade-1's revenue grew from \$12 million to \$20 million in one year. The founder looked forward to a \$30 million revenue figure in 2007, but he noted the challenge of finding business-minded managers who could fit into the relaxed and sports-oriented company culture.

### 5.2.8. *Trade-2*

Based in Vancouver, BC, Trade-2 is a wholesale distributor of building materials (e.g., flooring, roofing, and countertops) sourced from 35 different countries. Trade-2 sells into 60 countries, but its biggest market is the US, which accounts for about 75% of sales. Only 3% or 4% of sales come from Canada. About 35% of orders are completed online and the CEO says, "we are a dot.com the way Dell is a dot.com." The company has developed proprietary logistics algorithms and internal software. These functions have provided the company with a huge competitive advantage, so much so that it is considering diversifying into the logistics business. In 2006, the firm had \$45 million in revenue and 67 employees.

Trade-2 was created in October 1999 by two co-founders who had been friends for over 20 years. One of the co-founders (the CEO interviewed) was a financial consultant and the other was a property developer who owned a real estate company. The two friends felt that the volume buyer was not getting a fair deal on price because the building materials industry was extremely fragmented and the channels between manufacturers and buyers were inefficient. They saw an opportunity to develop a revolutionary business model based on technology. They left their jobs, bootstrapped seed capital of \$100,000, and traveled extensively to meet manufacturers and "prove their concept." The company raised \$7 million during its first two and a half years, via a series of private offer memorandum led by the financial expertise of the CEO.

Trade-2's technology did not develop as quickly as originally planned and by late 2001 the company was pre-revenue, burning \$150,000 a month. At that time, it had 34 employees; most were in IT, and a few others focused on developing business and

signing-up manufacturers to the product. The market was severely hit by the events of September 11 and Trade-2 had to do its first down round. It raised \$500,000 from existing investors and concluded that it was time to concentrate on revenue. The company had to lay off more than half its employees to get to a workforce of 15. "So whether we were ready or not we started selling. The next growth of staff was adding on sales people as opposed to IT."

Trade-2's new business model was warmly accepted by manufacturers and buyers, as illustrated by its rapid growth in the years immediately after 2001. In 2002, it had \$2 million in revenue and 15 employees; in 2003, it had \$15.9 million in revenue and 24 employees; in 2004 it had \$31 million in revenue and 42 employees; and in 2005, it had \$40 million in revenue and 42 employees. In 2006, the company added 25 employees in the hope that it would double its revenue. In the end, it achieved 20%, not 100% growth in 2006. But the firm was reasonably happy with this result, considering that the US building materials industry was by then in a difficult period with most sellers down by 30%.

Nevertheless, in 2007 there was considerable pressure on the firm to grow substantially to meet its increased expenses. Besides, Trade-had 2 raised over \$15 million since inception and management felt it was time to give investors an acceptable rate of return. The CEO was positive about the firm's future. The business model was well-positioned to take advantage of troubled times and they had only captured about 5% of the market so far. To this end, the company strengthened its board of directors and executive team in 2006. "Our motivation is to build a legacy company in the long term," the CEO remarked.

### 5.2.9. Trade-3

Based in Delta, BC, Trade-3 is a marketing and joint venture arm of a parent company that manufactures flavoured wood bisquettes for barbeque smokers. Trade-3 imports the smoker units from its Chinese partners, buys locally manufactured bisquettes from the parent company, and then sells the units and bisquettes in Canada, the US, Europe, Australia, New Zealand, and Hong Kong. The company sells via a distributor network and through major retailers such as Amazon, Sears, and Canadian Tire. In 2006, the company had \$8 million in revenue and 12 employees, mostly engaged in sales and customer service.

The entrepreneur (interviewee) started both Trade-3 and the parent company in 1999, with his father. They are serial entrepreneurs who have launched many ventures together, both successful and unsuccessful, in various industries, from computer software to plastics. The entrepreneur's family first had the idea for the smoker business in the early 1980s, but that attempt had failed because of high manufacturing costs. Only restaurants and hotels could afford to buy the original product and "it was going in the grave real fast." In early 1990s, the founders met some Chinese entrepreneurs through their software company. The founders realized that they could reduce their costs and prices significantly if they manufactured in China. Conversations and ideas finally became reality in 1999 when the founders acquired significant ready capital from the sale of their plastics company. The seed capital of 500,000 USD was contributed equally by the founders and the Chinese partners. The company made a profit in the third year and has been self-sustaining since then, with no external funding or debt financing.

In the beginning, the growth strategy was to get the product in as many stores as possible, by offering good margins and solid product support. In 2003, the company struck a deal with a major wholesale store chain that "if successful it would have saw overnight huge growth." The chain wanted to market test the product by putting 9,000 units in its Florida stores. This was more than double the average number of units the company sold annually. "But it turned into an overnight nightmare" when the chain failed to sell the units and returned all of them. Looking back, the entrepreneur remarked, "I don't think that product had any chance of doing well. It was a fairly good sized ticket item costing \$450 but the problem is the consumers were not aware of our product or our company. We hadn't done the branding (in Florida)."

Since then, the company has worked aggressively to attract smaller retailers and reposition the products into the growing home barbeque market. It has concentrated on branding through trade shows, targeted print advertising in magazines, and TV advertising. The company also expanded into Europe. "It turned out to be a good thing because we needed the inventory for the following year and we sold all that inventories in about four months." Trade-3's revenue reached \$5 million in 2005 and \$6 million in 2006. Recently, the company has come back to the major retail channels, but now with a stronger brand and better reputation. The entrepreneur felt the company "really started to shooting up" in 2006 and expected that revenue would reach \$10 million in 2007.

#### *5.2.10. Finance-1*

Finance-1 is a Vancouver, BC firm that offers financing to credit exporters of Canadian goods and services from small and medium sized companies. The company borrows money from Canadian banks and lends it to offshore borrowers who import

goods and services from Canada, thereby helping small and mid-sized Canadian exporters. It is a private-public partnership and several major Canadian banks and provincial governments are shareholders. In 2006, Finance-1 signed 198 million USD of new loan assets on top of its \$190 million net assets. The company had offices in Toronto, Montreal, and Calgary, and employed 48 staff.

The founder was a long time financier and trade expert in the private and public sectors and "this was (his) Frankenstein in the basement." He saw an opportunity in trade financing because major banks didn't generally assume non bank-to-bank foreign risk exposure. He designed the business plan, the concepts, and how the product would work: "a few times that I could relax, I would work on this model." Then "it suddenly got up and started walking in the room and it was real." The founder quit his lucrative consulting practice to run the venture. In 1993, Finance-1 was incorporated as a partnership of the founder, and several banks and provincial governments. The founder bootstrapped the seed funding by taking on a second mortgage and then selling his house. The company invested around \$1 million in operations the first year "with nothing to show for it," then made \$2,000 profit in the second year. Since then, growth has been between 25% and 50% per annum based on loan assets.

The business model works; not just because of the company's foreign credit expertise, but also because of its relationship with the banks and its low cost human resources. Finance-1 can borrow money cheaply from shareholding banks and take advantage of the bank's procurement purchasing power. In terms of human resources, the company employs recent graduates who often go on to join major banks after two or three years of training at the company. It also relies on a part time workforce of "second

debut bankers” — recent retirees from major banks who do not need benefits. Recently, Finance-1 has established an alliance with Export Development Canada (EDC), which will bring additional business development advantages and opportunities. Finance-1’s loans are, in effect, guaranteed by governments when the firm underwrites them through their export credit agency.

Finance-1 has not experienced any major growth crisis, but it has faced a number of challenges. It survived the Asian economic crisis and the Latin American market meltdown by working hard to reschedule loans. The firm’s shareholder profile means that its stakeholder relationships are dynamic and sometimes political. And the firm always seems to have someone new on its board of directors (usually representing a bank shareholder) who does not really understand the business.

Nonetheless, the founder believes that Finance-1 has a bright future. The company aims to be the world leader in small and mid-sized transactions for export finance, based on its unique multi-level business platform that has been successful in Canada. Finance-1 is aggressively expanding into international markets and has established similar arrangements with government agencies in the US, the UK, Australia, Germany, and Luxemburg. More recently, the company has hired a Chief Strategic Officer, a departure from its one-person strategic decision-making.

#### *5.2.11. Finance-2*

Finance-2 is based in London, ON. It provides money management services for private individuals, foundations and endowments, corporate pension plans, and other financial institutions, using a proprietary quantitative investment approach. Its earnings are a percentage fee based on the size of assets on a decrementing scale rather than

performance fees. The company concentrates on the Canadian equity market. In 2006, Finance-2 employed 33 staff and managed investment assets worth over \$5 billion.

Finance-2 was founded in 1998 by three partners who had worked together at X Life, a major insurance company. At the time, there was speculation that X Life would be taken over by a major bank with its own insurance and investment operations and the co-founders were concerned about their job security. Meanwhile, they were confident that they would do well in the institutional or pension money management business, based on their sophisticated investment process and track record of managing \$15 billion. They decided to launch their own venture soon after X Life was acquired by another bidder. Seed funding of \$2 million came from the previous owners of X Life, in exchange for 35% of non-voting shares. The three co-founders were joined by three employees also from X Life. The first pool funds of \$1 million were invested by former X Life executives who had done well out of the take-over of their old firm.

The co-founders quickly realized that the pension investment community was not readily accessible to a new venture. Instead, they had to first tap into the private client market, which meant a lot more clients with much smaller accounts than originally planned. This translated into employing more accountants, customer service representatives, and sales people. Nonetheless, business took off, and by the end of the first year Finance-2 had \$50 million under management, which doubled, and then quadrupled in the next two years. In 2001, the company launched a product traded on the Toronto Stock Exchange and raised \$350 million. This eventually proved to be a painful venture that had to be dissolved in 2005, but it generated a lot of cash flow in the meantime and helped the company grow from 10 to 20 employees. In 2002, Finance-2



won the first sub-advisory deal from a large bank. The company's assets grew to \$700 million by the end of 2003. Around this time, Finance-2 hired an experienced institutional sales person to target the pension community and "start shaking hands and kissing babies."

It took five years for Finance-2 to win its first pension mandate in 2004. The gatekeepers of the pension community now considered the company a worthy contender, based on its five year track record of above-market returns and its \$1 billion investment base. "It really started to take off in 2005 and we won a lot of other (pension) mandates." This time, the co-founders found they were competing for \$500 million mandates instead of \$50 million mandates as they originally targeted. "If you win a lot of those, your assets really start to grow." The company ended 2005 with about \$2.4 billion in assets and this had grown to over \$5 billion by the end of 2006.

2006 was also a stressful year. "We never expected to grow in one year from \$2.5 billion to \$5 billion." While the past growth had a huge impact on expectations, the sale of company in late 2006 to a publicly listed investment management company had a huge impact on the growth as well. The pension community became cautious, even though Finance-2 remained autonomous and there were no changes in the top management team, except for a new member of the board. "You sell your company, you throw enough scare into the gatekeeper community, and they go 'we'd better watch these guys for a little bit'." Growth slowed down in 2007, but "we can digest everything we've done ... and plan for (the future)," remarked the co-founder. The company was building its US and international equity capabilities so it would be able to diversify its business model. And it still expected its assets to grow to \$8 to 10 billion within five years.

### 5.2.12. *Media-1*

Media-1 is based in Oakville, Ontario. It is a media company that offers a full range of specialty information products, services, and multimedia applications to consumer and commercial clients through its specialty TV channels and website. The company has a patented technology, and a unique engine that can localize specialty information. Its revenue comes from advertising (37%) and subscription (63%). In 2006, the company had \$45 million in revenue and employed 370 staff.

The founder was a banker turned broadcasting industry executive with over 20 years business experience. In 1989 he decided to launch his own business after the satellite broadcast company he led was acquired by another firm. "My business was really to acquire things and then ultimately transform them towards (my original concept of becoming a distributor of interactive information)." Two factors were instrumental in the early development of Media-1: (i) the founder's ability to raise capital through merchant banks, and (ii) the blue-chip board of directors that he put together before hiring a single other person or even renting an office. The company's first acquisition was a group of 16 radio stations in Northern Ontario. "I thought there was an opportunity to consolidate radio, but ... it wasn't a long term business. It was a means to an end. Had I not had radio to launch, I wouldn't have had the base to see me through, till 1993 ... cover some of the overheads."

In 1991, Media-1 acquired a specialty TV channel, which was approved by the Canadian Radio-television and Telecommunications Commission in June 1993. These acquisitions were funded by investments from merchant banks that owned 85% of shares with 40% of votes. Merchant banks typically have an investment window of three to five

years, so the founder had to “focus on preparing for their exit.” Media-1 expanded into Europe by establishing specialty channels in the UK, France, and Italy. This proved to be a costly investment. In the meantime, the radio stations were losing money. In 1996, the company established a strategic partnership with a sister channel in the US, which helped Media-1 buy out half of the interest of the merchant banks.

In 1999, the founder managed to strike a deal with the merchant banks, which gave him absolute control of the company. Since then, Media-1 has concentrated solely on its specialty information services. The company sold its European operations and all the radio stations. Growth after 1999 was fast, smooth, and profitable despite several challenges from distributors and competitors. As of 2007, Media-1 was a dominant specialty information services provider in Canada, with exceptionally loyal advertisers and employees. The company’s TV channels reach 8.6 million households or 94% of Canadian cable and satellite subscribers. Its website is one of the most visited websites in Canada, with 10 million unique visitors per month. Media-1’s financial performance is far above the industry average.

The founder saw exponential growth potential in its high-margin online advertising; this revenue stream had been doubling every year since 2005. In 2006, Media-1 began to explore a growing market for specialized information services by acquiring a commercial provider of services to nuclear power plants, among others. The company was also planning to launch other specialty channels which the founder thought were natural extensions of the firm’s current services. Media-1 was expecting to achieve \$75 million in revenue by 2008.

### 5.2.13. *Eco-1*

Located in Seoul, Korea, Eco-1 is a sustainability solutions provider. It has expertise in corporate social responsibility and environmental issues and global partnerships with industry leaders. The company provides a full spectrum of knowledge-based sustainability solutions from research and environmental technology, to regulatory and financial advisory services. Its client list includes major industrial corporations and financial institutions in the private sector, a number of ministries and local governments in the public sector, and non-government organizations including the United Nations Environment Programme Financial Initiative (UNEP/FI) Korea Group and World Bank. In 2006, the company had \$6 million in revenue and 60 employees, most of whom were sustainability experts and consultants.

Eco-1 was founded in 1995 in a university-based incubator. The lead entrepreneur was completing his Ph.D. in management at the same university. The founding team also included two sustainability experts returning to Korea after graduate studies in the UK and the US. Several faculty members were also involved in advisory roles. They capitalized the company with \$50,000 from an angel investor and started taking on environmental management consulting projects from major Korean conglomerates.

The 1997 Asian economic crisis was the firm's first major challenge. Eco-1 lost all its consulting business as clients focused on restructuring to survive, rather than looking to the future. The company turned to government-funded research and policy projects, which helped keep it afloat in terms of cash flow. These projects also, and somewhat serendipitously, helped build the firm's knowledge base and gave it a set of

valuable references for the future. The company survived through to 2000 when it received its first venture capital funding. By this time, Eco-1 had about \$1 million in revenue and 25 employees.

Since the early 2000s, Eco-1 has gradually expanded its business portfolio to include services such as auditing and rating sustainability, developing CDM (Clean Development Mechanism), and trading Certified Emission Reductions (CERs or carbon credits). Growth really took off around 2003. As the public started to become aware of sustainable development and environmental management, Eco-1 was poised to exploit emerging opportunities with its accumulated knowledge base and excellent references. The firm's success was boosted by its relationships with global leaders from financial advisory and environmental regulatory services firms, and its involvement in NGO initiatives, such as UNEP/FI and the UN Global Compact.

Since 2005, the company has expanded into international markets and won a bid for a major CDM project in China. In the latter case it beat out several large multinational competitors. In 2007, Eco-1 hired more than 20 new consultants and was projecting revenues of 10 million USD.

## CHAPTER 6. ANALYSIS AND DISCUSSION

This chapter analyses and interprets the qualitative data. Section 6.1 discusses the constructs (categories) that emerged from the data analysis. Section 6.2 discusses the initial growth cycle, including the founding process. Section 6.3 describes further growth cycles, including virtuous and vicious spirals. Section 6.4 concludes the chapter by presenting a theoretical model and propositions for future research.

### 6.1. Constructs (Categories)

The initial phase of the qualitative data analysis involved open coding. This is the analytic process which identifies the properties and dimensions of concepts in a data set (Strauss & Corbin, 1998: 101). The objective of this phase was to identify categories (constructs). According to Strauss and Corbin (1998), categories are the building blocks of theory, derived from data, that stand for phenomena, with properties (general or specific characteristics or attributes) and dimensions (location of a property along a continuum or range). Axial coding was used to simultaneously relate the high-level constructs to their subcategories (Strauss & Corbin, 1998: 124). Consequently, I extracted the properties (1<sup>st</sup> order categories emerged from the data) from the data to identify the subcategories (2<sup>nd</sup> order constructs), which, in turn, form the dimensions of the high-level constructs (overarching constructs).

The coding process revealed five main categories that are related to the two focal phenomena of firm emergence and firm growth. These are: (1) strategic resources, (2) human resources, (3) financial resources, (4) organizational resources, and (5) physical resources. These categories, and their subcategories, are discussed in detail in the following sections.

### 6.1.1. Strategic resources (S)

Strategic resources are related to the focal firm's positioning in the product market. Analysing the 13 case studies revealed 10 subcategories of strategic resources, grouped as follows: input factors of opportunity, business model, business plan, legitimacy, and network; guiding factors of strategy and vision/core values; and output factors of competence/competitive advantage, clients/sales, and market position.

*Opportunity.* Entrepreneurial opportunity refers to the situations in which new goods, services, raw materials, markets, and organizing methods can be introduced by forming new means, ends, or means-ends relationships (Ekhardt & Shane, 2003: 336). In and of themselves, opportunities do not guarantee firm growth. But many interviewees indicated that the size of an opportunity set the boundaries for potential growth, thereby establishing growth capacity.

*Countertops and cabinets is a \$15 billion industry so these are big industries.*

*When I say we compete in those categories we may only compete in a very small slice in that category. ...There (are) a lot of growth opportunities on the supply side as well as on the sales side. (Trade-2)*

*It's going to keep doubling for quite a while ... But by that time, the seven hundred million, full capacity, theoretical potential will probably be in the billions. And we're not going to achieve that either. All I'm saying is that there's exponential growth potential. (Media-1)*

*Customer acquisition was high initially and then started to taper off because there's only so many customers that were willing to build a system from scratch.*

*We'd kind of saturated that, and realized they're hard to get, hard to get these clients, and hard to maintain these clients. (IT-2)*

The property of this subcategory is the nature of the opportunity and the dimension of this category is the size of the opportunity. Both are dynamic. Indeed, many interviewees reported that the nature and size of their business opportunities changed as their firms grew.

*Business model.* Entrepreneurs exploit opportunities by adopting a business model that creates “new means, ends, or means-ends relationship (cf., Ekhardt & Shane, 2003).” The data analysis revealed four components (1<sup>st</sup> order categories) of business model: product/technology/service, revenue generating, supply chain, and target market. Business models are dynamic, and some of our case firms changed their model over time; for example:

*...we transitioned a business model from the 'platform' sale to an 'application' sale. So that's this new product offering. It was a substantial change in the business model, but well worth it in the future because our pipeline is growing at a much faster rate so we should see the benefits of it this year, next year, and the year after. (IT-2)*

Again, the nature of the business model does not, in itself, guarantee prosperity. Firm growth depends on the fit between the business model and the entrepreneurial opportunity, and on how well the business model is implemented and executed. Only the eventual business results will tell us if the right business model is in place. However, we can examine how well a business model is defined at the outset of the firm's growth trajectory, which can be used as the dimension of the business model subcategory.



Meantime, the data revealed two more categories that are independent, nonetheless closely related to the business model: business planning and strategy. Business planning is the activity of defining opportunities and developing a business model to exploit them. One serial entrepreneur said that the business plan was the differentiating factor between his successful and unsuccessful ventures:

*Again, business plan... I bought some businesses that failed in the past and I didn't have a proper business plan there. I didn't understand the business well enough at the time when I bought it to realize that OK this is a riskier venture than I thought going in. ... (At this time,) we did everything before we decided to turn the light switches on. ... I did a very comprehensive business plan and that's what I sold to our partners in China to make it go and I had budgets and projections in there. We had an idea of how much capitalization we required to get this thing going. We didn't invest any more money in it. (Trade-3)*

Several other interviewees reported that they used business plans to boost growth or transition the business from one state to another:

*Two years ago we had been flat at about \$10 million in sales for three or four years in a row. ... We decided we wanted to grow as a company. ... If we are going to grow we planned for growth. ... We sat down and we built a five-year plan of the type of infrastructure we figured we would need in order to grow. (Trade-1)*

*It was nothing prior to having a board of directors. There was just an idea really. Then it was trying to put in a business plan that made sense. (Manu-1)*

One respondent cautioned that entrepreneurs had to be ready to adjust their business plans to take advantage of changed circumstances and new opportunities:

*... (E)very one of these financing rounds (we) had a business plan. We would adjust ... we didn't want to spend too much time writing up plans because in a dynamic field, it's not the best use of your time. You need to change it so quickly.*

*(Manu-2)*

Clearly, business planning is critical for firm growth. But we need to recognize that there are differences between activities and outcomes. This is similar to the concept of flows and stocks in system dynamics literature. Business planning (flows) yields well defined opportunities (stock) and well developed business models (stock). It would be redundant to include action-oriented constructs (such as business planning) in the theoretical model along with other constructs (such as opportunity and business model). Instead, the action-oriented constructs were reflected in other related constructs.

On the other hand, a firm's strategy defines the plan for achieving its goals and objectives. The data analysis revealed several different strategies; and in each case the interviewee reported that their strategy had been critical to firm growth. These were: (i) a flexible organic strategy, based on evolving market opportunities (IT-3, Manu-1, Manu-2, Finance-2, Media-1); (ii) a focus strategy, that ensures that the firm does not pursue opportunities that are not directly linked to the vision (IT-3, Media-1); (iii) a niche strategy, based on dominating a small niche and then expanding from that position (IT-1, IT-2, IT-3, Finance-1, Trade-2); and (iv) a portfolio strategy, to serve multiple markets with different adoption rates (Manu-2). Some case firms used these strategies in combination, others adopted different strategies at different stages of their growth cycle.

The data indicated that strategies are directly associated with the opportunity–business model nexus and the growth model. Therefore, strategies were not included as a separate construct in the modified growth model.

*Legitimacy—credibility/reputation/brand.* Entrepreneurial firms are vulnerable to the liabilities of newness and smallness because they lack organizational legitimacy (Stinchcombe, 1965). Many interviewees reported that it was initially difficult to deal with stakeholders such as investors and clients. In general, the data indicated that credibility is a threshold for organizational legitimacy, and credibility was a significant challenge for several entrepreneurs interviewed in this study, particularly those operating in certain industries (e.g., healthcare industry) or with certain business models (e.g., pension investment management):

*It's just always an issue from the start, especially with the idea – you don't have science credibility – to get to that next milestone can take so long. ... We've always had a problem with building a board of directors and getting real scientific credibility. (Bio-1)*

*(We) went to see the various gatekeepers of the pension plans of this country and they said, "We don't know who you are ... we love what we hear about your investment process ... come back in five years ... we'll keep an eye on you and we'll hire you five years from now." Which is not all that great when your business plan suggests that you would get clients within the first few months. (Finance-2)*

At startup, a certain level of credibility is conferred by the track record of the entrepreneur or entrepreneurial team or the profile of the board of directors:

*...brought to the table excellent people ... in advisory capacity, as board members, and this gave us a whole bunch of credibility and I've always run it as though it's a public company although we're very private and will always be private, which is a competitive advantage. (Media-1)*

In many cases, firms built credibility by winning major clients or obtaining regulatory approvals:

*And Ford was probably our anchor customer. That put us on the map. That said, "OK Ford Motor Company has now invested ..." (IT-2)*

*Obviously a major milestone is the first FDA clearance, it was huge validation and credibility. (Bio-1)*

*That was a huge win for us because it was a big endorsement and something that we could take out to the community and say, "The A Bank has picked us to be their manager." (Finance-2)*

*And selling the test equipment gave us the credibility, the know-how to go into fuel cells as a future step and gave us the growth and revenue stream initiative. And then we went from fuel cells to test equipment and back to fuel cells once we had established ourselves and debt financing in place. (Manu-2)*

Credibility and reputation are intertwined. Credibility is a legitimacy threshold and many entrepreneurs were very concerned about overcoming the negative effects of lacking credibility, especially early on. On the other hand, reputation was mainly discussed in terms of its positive effects on firm growth. For example:

*We developed a reputation in the industry as being one of the better distributors. We're one of the best suppliers to the retail chain. They recommend us. The*

*references are then good. Whenever a new product wants to come to Canada and it's in our market, they will research who's the best to use in Canada as a distributor. When they do their research they're finding us and they're starting to come to us now. (Trade-1)*

In particular, reputation can be helpful when a firm is in trouble.

*No, it was definitely easier to build it back up again because now I had staff there. I had a network in business. So much of it is who you know not what you know. I knew the right people. I knew the retailers. They knew me and through all that time we still maintained a great reputation, which is key. We still had a good reputation. Our retailers that buy from us felt confident buying something new – another product from us because through all those years when it was going bad for us it was going bad for the retailer. We never screwed anyone around. We always worked with people. We still kept the customer service and the business relationships very strong. (Trade-1)*

When reputation is firmly associated with the identity of a firm or its products, it is perceived by the market as a brand. Two interviewees suggested that branding was critical to their success and growth (Finance-2, Trade-3). Reputation is a subjective concept; ideally, its value is measured by a market of external stakeholders. Therefore, the dimension for this subcategory is the perceived strength of the firm's credibility, reputation, and brand.

*Network—partnership/distributors/suppliers.* External social capital resources, including strategic alliances (Ireland, Hitt, & Sirmon, 2003); access to distribution channels; and buyer–seller relationships (Amit & Schoemaker, 1993) have been widely

accepted as the sources of competitive advantage. The data analysis confirmed the importance of these factors to firm growth. In particular, strategic partnerships provide various benefits, including a stable cash flow from revenue, and access to extended networks:

*... (T)hey were giving us a revenue that was not guaranteed, but a lot less volatile than some of the other revenues we were getting. And most importantly they gave us introductions in that, when someone would come in and wanted to buy a GM fuel cell for their own particular market, ... (t)hey would instead deflect them to (us). ... We've been a great channel partner from that respect. We give credibility to the company when we get a recommendation from GM. (Manu-2)*

Strategic partners sometimes become equity investors who inject much-needed financial resources during a crisis (Manu-2, Media-1). High-profile partners also enhance a firm's reputation (Manu-2). Indeed, several interviewees suggested that a high-profile partnership was the turning point for their growth:

*(The driver of this exponential growth) is 3M. So right now we're getting a revenue inflection. ... Essentially now it's the partnerships again taking off and taking it to the next level. (Bio-1)*

*...so we needed to shore up the referrals from EDC (Export Development Canada) and that's happened. They're a very good partner and while they're not a shareholder, they're a part of our strategic partnership. Everything we do in Canada is insured by EDC. ...It took 11 to 12 years to get it all sorted out... (Finance-1)*

Interviewees also recognized the importance of distribution channel and buyer-seller relationships. In some cases, these networks were an integral part of the business model; for example:

*The thing that sold them to go with us was that we had figured out how to go to market. They didn't have to figure out. OK, we're bringing on this heating product. Now how do we sell it. We had already figured that out for them because we had a certified installer program that tied into our authorized distributor program. (Manu-1)*

In sum, networks link firms to strategic factor markets and product markets. Therefore, networks are critical for sourcing various resources (i.e., resource inflows) and achieving market positions (i.e., performance). The dimension of this category is the number and strength of network ties.

*Vision/Core Value.* also It has been suggested that vision/core value provides “the glue that holds an organization together as it grows, decentralizes, diversifies, expands globally, and develops workplace diversity (Collins & Porras, 1996: 66).” Many interviewees echoed this point.

*You know, when (marketing/sales and R&D) actually act – how they execute is different, but they have to have the same value system. Absolutely. If they didn't have the same core value system, there's no way they could communicate. (Bio-1)*

*They're so busy just trying to grow or get through and I just found that my strength has been getting people to share my vision of where we think the business is going and also add to the vision of where it's going. If they feel they're a part of it then they're going to really drive hard to make it happen. (Manu-1)*

The absence of a well articulated vision can also pose a serious problem for a growing firm. As one interviewee said:

*We hired lots of great people but there were a lot of good people trying to figure out what to do and just spending a lot of money and not being productive. There was an issue around growing the business and then communicating because I would hear people in the trenches always complaining that they didn't know what vision of the company was, they didn't know where they were going, what the direction was so I learned from that and when we were able to buy our company back I never wanted that to happen in our business where people are wondering what is the vision, what's the direction. What are we trying to accomplish? So we over-communicate that all the time. We really want people to understand what the direction of the company is, what we're trying to accomplish and everybody feels a part of the team. (Trade-1)*

A vision is also important for attracting high quality human resources and dealing with external stakeholders, such as investors. For example:

*But also to attract the investors, it's got to have a big vision. The BHAG has got to be pretty impressive. So it's got to be of a size and scale and also of an appeal for investors, in my perspective, it's got to be something I can translate and that's exciting to me that I would know would be exciting to investors. (Bio-1)*

The data indicated there are different ways to articulate a vision. In top-down approaches, the entrepreneur develops and communicates the vision or core principles. In bottom-up approaches, the firm develops a vision through a structured process that involves all employees. The timeline for developing a vision also varies: some

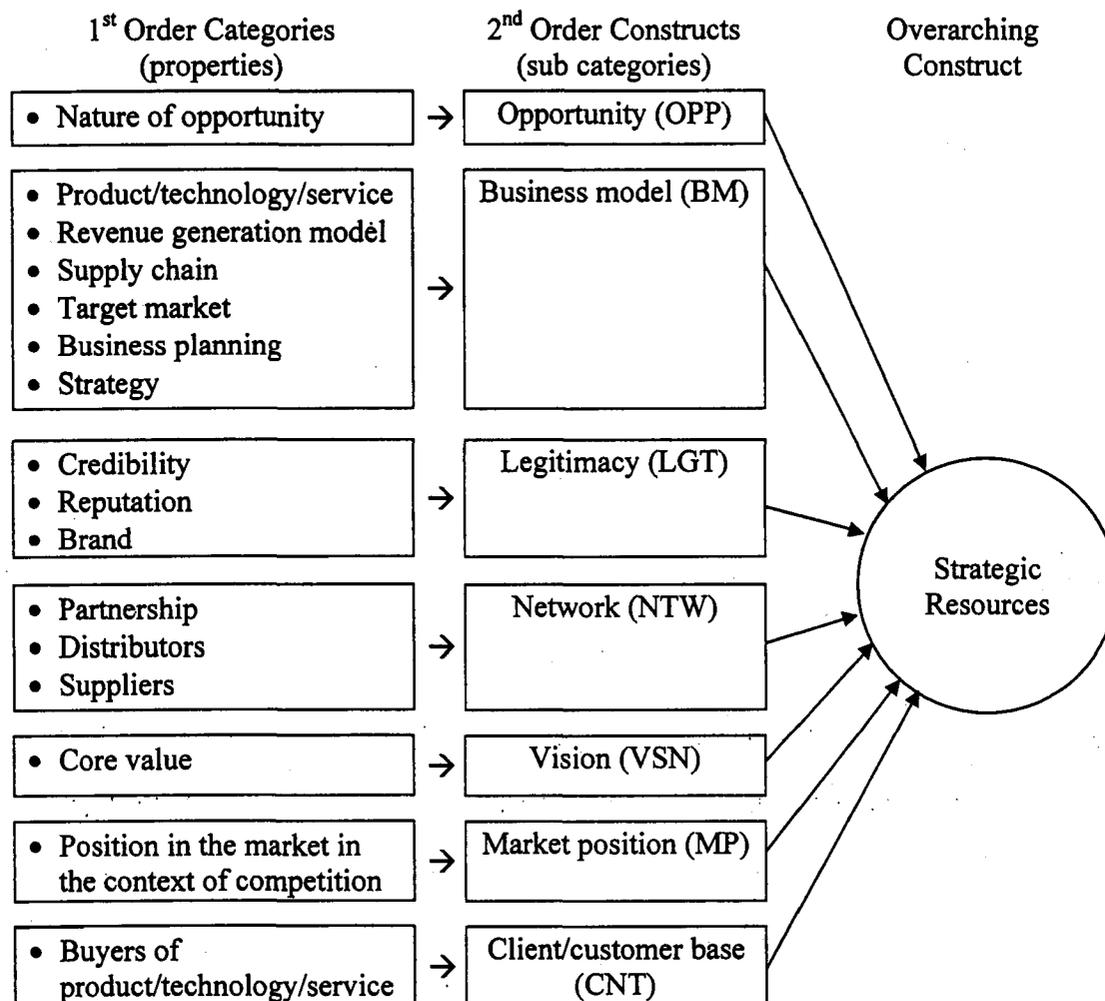


interviewees reported that they had a well defined vision from the beginning of their venture; others deliberately developed a vision as they went along. The dimension for this subcategory is the continuum that represents the degree to which a vision/core value is well articulated and shared throughout the organization.

*Market position and client/sales.* These strategic resources are directly tied to firm performance and they impact several of the strategic categories discussed in this chapter. First, a well developed business model can help a firm successfully exploit opportunities to become a dominant player or market leader. Market position mainly confers a strategic or symbolic value that contributes to categories such as reputation and brand. Second, effectively exploiting opportunities builds the firm's client/customer base and increases revenue. Third, the client/customer base directly ties into monetary value, thus it relates to the cash flow category of financial resources. In a sense, a favourable market position can only be achieved by winning clients or customers; that is, by selling products or services and generating revenues. In this vein, the client/customer base is the ultimate bottom line of strategic resources. Therefore, revenue is the dimension of this category.

Table 6-1 lists the properties and subcategories of the strategic resources construct.

**TABLE 6-1**  
**Data Structure: Strategic Resources**



### 6.1.2. Human resources (H)

Human resources are the resources tied to individuals associated with the firm. The subcategories (constructs) that emerged from the qualitative data analysis were: entrepreneurs/entrepreneurial team, top management team (CEO and executives), employees, board of directors, and advisors/consultants.

*Entrepreneur/entrepreneurial team.* Entrepreneurs/entrepreneurial teams are at the centre of the entrepreneurial process—from opportunity recognition and venture creation, to growth and eventual demise. Our interviewees identified the characteristics of the entrepreneur/entrepreneurial team that are most relevant to the founding and growth of firms. These were: education, entrepreneurial experience, industry/business experience, and networks. At the outset, these factors influence opportunity recognition and the venture creation decision. Many interviewees also suggested that these factors turn out to be beneficial throughout the entire growth process:

*The fact that I had B now as a partner who had been in the industry before he had brought in big brands ... to North America. The fact I had someone experienced involved helped a lot also. (Trade-1)*

*... my experience and my connections – on the finance were very good and without that it wouldn't have happened. (Finance-1)*

*I had a track record ... running that satellite communications company ... and I understood the regulatory process and I have excellent advisors on the regulatory side, the ability to surround ourselves here with absolutely top-notch best advisors. (Media-1)*

*... so I determined that I would pursue an entrepreneurial pursuit in hydrogen, without having it defined. But right from my third year of the first degree, like in 1976 I believe was when I first decided ... but then I said I needed to get the business education and the technology education. And then there would be limited credibility gap to raise the capital and also to lead a team, to build a team to achieve that goal. (Mamu-2)*

*And the (previous) business ... was meant to be a practice run to prove myself on the business-side and to prove I could work with a team and boot-strap something from zero and make it a success – to create jobs that would be sustainable. And it helped me raise capital in the next business because people could check these references and see that it was for real. (Manu-2)*

An entrepreneur's background also affects their growth decisions, including their choice of financing method:

*... from my background as a financial consultant, I raised money for limited partnerships in the past so I knew how to write a private offer memorandum. (Trade-2)*

The size of entrepreneurial teams among the case firms varied significantly. Only two firms (Finance-1, Media-1) among 13 case firms were led by a sole entrepreneur. The size of the entrepreneurial team ranged from two (IT-1, Bio-1, Manu-1, Trade-2), three (IT-2, Manu-2, Trade-1, Finance-2, Eco-1), four (Trade-3), to six (IT-3). The origin of these partnerships also varied from family (Trade-3), friends (Trade-2), personal introduction (IT-1, Trade-1, Eco-1), education (IT-3, Manu-2), previous work (IT-2, Bio-1, Finance-2), to associations (Manu-1), for example:

*I met him through my girlfriend at the time. His wife was best friends with my girlfriend. So just sort of a personal introduction. (IT-1)*

*I was involved in a group called "Café," which is The Canadian Association of Family Enterprises and so was my partner. (Manu-1)*

*Masters of Engineering ... and that's where I met my partner, and we met a third partner who was my next door neighbour ... we went out for a beer and we*

*decided to launch. (Manu-1)*

*... He was obviously a friend of my parents ... Then when I realized this could be a great opportunity and I needed an experienced partner involved... (Trade-1)*

*...we've been friends for many years – of over 20 years and ... (Trade-2)*

*Through my software company, one of their... a friend of a friend of a friend... some introductions happening... (Trade-3)*

Several interviewees believed that the entrepreneurial team was strengthened by complementary skill sets and expertise:

*...we had a lot of shared interests but we had complementary skills and we both were very successful in what we had already done. So we felt it was a good partnership. (Trade-2)*

*And the three founders were essentially complementary, in the sense that we had one person in charge of sales and marketing, who came from a sales and marketing background for technology; another person was a very adept engineer with practical hands-on skills that would essentially build anything and design anything and I came to the play with some financial expertise from the MBA and also some other formal courses I took during my own MBA years and also some entrepreneurial expertise or expertise through another business I started grew and sold in the 1980's. (Manu-2)*

Of the firms founded by entrepreneurial teams, only three (IT-1, Trade-2, Trade-3) were still led by the original partners. These interviewees emphasized that their strong partnerships had significantly contributed to the growth and success of their ventures.

*(We) are well aware that we have to be in the .0001 percentile that partners actually are truly aligned. ... But we made our own luck in that regard because we had those heart-to-hearts at the start of the process. ... I remember specifically going along driving on a... trying to go see some manufacturers before we ever had employees and we said we're going to be big and along the way people are going to try to do everything they can to split us apart. ... We made the decision at that point we've got each other's back and there's nothing going to happen there. ... And it's amazing the number of times it's actually happened. (Trade-2)*

Surprisingly, the Trade-2 interviewee thought that role confusion at the top was healthy and had contributed to a strong entrepreneurial partnership. This is unusual; role confusion is commonly thought to be a growth pain.

In most cases, the entrepreneurial teams we studied changed over time, for various reasons, including: the evolution of the firm, changes in the personal life of the entrepreneurs, and serious disagreements over issues such as salaries or strategic direction. Dissolving a business partnership can be an emotional event. And sometimes it is destructive enough to throw the firm into a growth crisis, as happened to IT-3 (see Section 5.2.3).

*It was a huge move for the company, yet, basically I had to sign my co-founder's and my buddy's death warrant at the job. (Bio-1)*

In general, the properties of the entrepreneur/entrepreneurial team subcategory comprise managerial competences and Penrose's "entrepreneurial services" (Penrose, 1959: 35-41). These properties can be defined and, therefore, measured by considering the characteristics described previously. These were: the education, entrepreneurial

experience, industry/business experience, and networks of individuals, and the strength/fit of entrepreneurial team partnerships.

*Top management team.* The next subcategory in the human resources bundle is the top management team (TMT), including the Chief Executive Officer (CEO) and other senior executives. During the initial growth stages of a venture, it is common for entrepreneurs to take on most of the executive roles themselves. For one thing, hiring senior executives and maintaining 'top heavy' organizations is very costly for entrepreneurial firms with limited cash reserves. However, as firms grow, it becomes more difficult for one or two individuals to manage day-to-day operations. Many interviewees commented that hiring and delegating to senior executives was a natural stage in the growth path:

*But really once you kind of pass the \$15.9 million mark we need a little bit more... we need the higher level person in IT. We need the higher level person in Finance. So those really are kind of the two areas that we started to bring some people in. (Trade-2)*

Some interviewees also indicated that hiring senior executives was a strategic move; for example, to drive growth in particular business areas:

*And then the particular growth strategy was in 2003. We hired an institutional sales person. Twenty-five years of work experience in that field, well-known and well-regarded across the country by the pension investment consultants, and took the approach that our five years aren't up and our hurdle of a billion dollars hasn't been crossed, but we'll hire this guy now to start shaking hands and kissing babies... We'll start doing that now. (Finance-2)*

Many interviewees said that hiring the right senior executive had a significant impact on the firm. In small entrepreneurial companies, one person can effectively change the course of growth.

*(The turning point) was the change in sales. We had been an R&D oriented organization and the sales were trailing behind. In recent years, it is the sales that have been pulling the growth. ... It was when our VP of Sales joined in 2002 and he made differences from the day one. ... In the end, it all comes down to human resources." (IT-3)*

*Like right now we hired a guy a year and a half ago to help manage the bio-defense sales... Since then, he took on clinical sales in Canada, he now took over the 3M partnership when we signed them last fall. So he's now partnership manager for 3M. He'll probably move – when we get our cardiac partner, which is more important – he'll probably take over management of that relationship. This is in 18 months." (Bio-1)*

*Our hardest position to fill in my time with the company has been head of marketing and we went through four before we came and have now S. We just couldn't get the right fit. Bright capable people but they didn't gel with the rest of us to the point where they had the passion, the intensity, the commitment to the organization and sales and marketing were constantly clashing. Now they love marketing. They believe in them. ...She understands what needs to be done. She's inclusive to the team and if she takes a risk they'll back her. (Manu-1)*

In several other cases, hiring the wrong person caused significant growth setbacks and even crises:



*... one of the biggest (setbacks) was when I opened up the company in Europe. Thought I hired the right guy to manage and run the business and then when I left... after living there for a year and a half, six months later I found out he wasn't running the business so we had to get back there and dedicate time to getting the right person in there. (IT-1)*

*(W)e brought in a CEO that is used to big business in process, and doesn't understand small business dynamics where you've got to turn on a dime, and you've got to sometimes make a decision with or without all the facts. ... Then he removed our head of sales to bring in his special head of sales, and pissed off half the sales team and they quit. It started a cascading effect. ... The crises came from having the wrong leader. The plan, we didn't execute to the plan because of that. So it wasn't expected to be a crisis, but it turned out to be one. (IT-2)*

*... But by [the] middle of the year, that CEO wasn't working out at all, so we let him go. We had a VP at the time ... that was stepping in interim as CEO. But by Christmastime, he couldn't raise any money. The company's out of money, he decided not to take the job. So by the end of the year the R&D program was a disaster. (Bio-1)*

As firms grow, entrepreneurs often step down from the leadership role. In fact, one interviewee joined the firm five years after it was founded, with the ambit of driving revenue growth. Another interviewee brought in a new CEO and stepped aside to become Chief Product Strategist. Two other case firms (Bio-1, Manu-2) reported that their founding entrepreneurs were leaving and they were on the verge of CEO succession.

*Well, being a full founder though I actually was – right from the start knew at some point it's best for this company to get an industry CEO in. (Bio-1)*

*I am now undergoing a succession plan right now, with a new CEO that came in from the automotive sector to take the company to the next phase. He is going to manage growth in a different way perhaps than the topsy-turvy initial years of the company. (Manu-2)*

*When I started the business I could probably be accused of being too entrepreneurial and maybe not as structured as we should be. We got a lot of stuff done. We flew by the seat of our pants, at times, but you got it done. With C on board it's much more process-oriented, much more controlled. We're doing that on purpose for future growth. (IT-2)*

In other cases, interviewees reported hiring second tier executives to support strategic decision-making and manage day-to-day operations:

*I've hired by the way a chief strategic officer for my company (this year). ... The reason I brought (him) in is I'm always coming up with ideas. ... I needed somebody to filter them into activate them and pick up... shall we say pick up the pieces behind me after I've... I'm throwing all this out in the air. So we have to take those ideas and focus them and then focus on new product development. Focus on strategy for where we need to be in five, six, seven years with the ideas that I have because I can't do everything. (Finance-1)*

*... I'm delegating to the CEO on a day-to-day ... I've been assuming the role of Chairman and CEO as well as President and COO, and (until recently) ... also the CFO role. ... This guy's got to command his mandate will be to discuss with*

*me strategy for long-haul, support me in developing that, but his job really is to implement it with focus being one to three years time. And he will support me in my primary responsibility of external relationships, which I will continue to maintain ... I want to spend more time on strategy (than) operations. (Media-1)*

Several interviewees acknowledged that a key constraint on firm growth was lack of senior human resources, confirming the "Penrose Effect" (Penrose, 1960: 2)). In sum, the properties of the TMT category can be defined mainly by the level of managerial competence that senior executives bring into the firm. Certain entrepreneurial skills may also be desirable, depending on the stage of firm growth. Thus, the dimensions of this category should be similar to those of the entrepreneur/entrepreneurial team category—education, entrepreneurial experience, industry/business experience, and networks—but with less emphasis on entrepreneurial experience. The most important issue is complementarity: do the skills of the TMT complement those of the entrepreneur/entrepreneurial team? And, do the abilities of the individuals concerned align with the executive positions they are hired into?

*Employees.* The last component of human resources is employees. We asked interviewees to describe the first person they appointed and received a wide variety of responses. Some hires were based on basic need; for example, book keeping and collection (Trade-1), executive assistant (Trade-2), administration (Trade-3), while other hires were more strategic; for example, sales representatives (IT-1), programmers (IT-3), scientists (Bio-1), investment managers (Finance-2), Ph.D. with technological expertise (Manu-2), Vice President of Sales and General Manager (Manu-1) and personal helper involved in planning (Finance-1).

Hiring approaches varied as well. Some firms made a strategic decision to hire ahead of their growth curve; that is, by recruiting and training employees before they were actually needed:

*Our strategy always was to hire people long before we needed them. And I would say that this was largely intact with the exception of this structured product ..., which truthfully took us totally by surprise. We thought we could be very successful if we could raise \$50 million with the first offering and we raised 275 million. As a result, we hired after the fact on that particular time. But in all other instances, we have always hired people and trained them for six months or more, before we thought we needed them. Our management style on the investment side is such that it really was scaleable from day one, so there wasn't an issue there, but the main growth strategy was hiring people. (Finance-2)*

Other interviewees waited until it was absolutely necessary to hire, for example:

*So we're always... we don't have enough and then (we) hire one. (Finance-1)*

*And the bunch we did was sometimes when we were hurting beyond pain thresholds, we would hire at that time, but we wouldn't, let's say, go out and hire twelve at the same time. We would just stretch as much as we can and then it was too painful and we would hire. (Manu-2)*

All the interviewees acknowledged the role of employees in firm growth, but in most cases this category was defined by the number of staff employed. Not only did interviewees track their workforce numbers throughout their growth process, they also related the number of employees to changes in their business model, strategy, and/or organizational structure. For example:

*... we started selling. Then the next growth of staff was adding on sales people as opposed to IT. So we went from being an IT organization to becoming a sales organization. (Trade-2)*

*At one point we went up to 80 and came back down recently because we changed our business model. ... So we needed less technical people and more business-oriented people. So we're in that transition right now, we're building back up to where we were before. (IT-2)*

One interviewee revealed that his/her human resources were not just an integral part of the business model, but also a cost advantage:

*... it works on what I call second début labour – second debut bankers. Bankers who recently retired from the national banks or Canadian banks but want to still work but are on full pension, have benefits, support. They don't need any benefits from us. If they want to go golfing a couple days a week they can. ... Under that we hire recent graduates. ... Usually new Canadians if we can who need an opportunity to settle down here but have had in their own country a lot of experience. But also speak other languages because ... they can understand the financial statements a lot better in those languages. ... so that's sort of our labour pool. (Finance-1)*

Some of the qualitative dimensions of employees are relevant to the growth process, such as employee motivation and loyalty. For example, many interviewees pointed out that motivation and loyalty moderate employee contributions. Nevertheless, most interviewees described this subcategory in terms of quantity, rather than quality, so the dimension is number of employees.

*Board of directors.* Boards of directors were the most commonly identified external human resource. They complete the firm's upper echelon, along with entrepreneur/entrepreneurial team and top management team. But their contribution to firm growth is not always clear, at least in the view of the respondents we interviewed. To begin with, the two Korean interviewees hardly acknowledged the role of their boards. They thought that boards of directors were only relevant in large public corporations, even though Korean law requires that all incorporated firms have a list of directors. The Korean interviewees did not believe that boards were either decision-making authorities or part of the corporate governance structure of small entrepreneurial firms. This turned out to be the biggest difference between the Korean and Canadian case firms.

Even within the Canadian sample, the perceived value of the board varied significantly. For one interviewee, building a high profile board of directors was the utmost priority:

*That was before I had the offices... Before I had dollar revenues, before I had any employees. I had a board of directors. ... excellent people ... in advisory capacity, as board members, and this gave us a whole bunch of credibility and I've always run it as though it's a public company although we're very private and will always be private, which is a competitive advantage. (Media-1)*

This point was echoed by other interviewees:

*We've always had a whole board. ... I think that's been a great strength to me because I don't run the company by myself. The board helps me ... right from the start makes sure that at certain stages I should hire critical... make the critical investment because they're exposed. ... The biggest problem for an entrepreneur*

*is who you go to. ... That's why I say an entrepreneurship with a board is a really good idea. (Finance-1)*

*One of the issues I had was he had this struggling little company that he believed had a great idea but it wasn't going anywhere. It was losing money. He decided to add three people to his board. ... It was nothing prior to having a board of directors. There was just an idea really. Then it was trying to put in a business plan that made sense. (Manu-1)*

Some firms did not establish or fully utilize their board of directors until later in their growth cycle. In one case, the firm was forced to appoint a board under the terms of the venture capital investment. Nevertheless, this interviewee appreciated the significant value the board added to the firm:

*No, we evolved the board as well when we had the first venture capital investment. ... and on the second round we started thinking about becoming public which means we needed to attract directors of public company standard. So we went out and, through our banking partners and investors, attracted three board members who were essentially public grade ... and these people are actually still with us. ... So these guys stayed with us for seven years and we're very much in debt to them for all of the things they've done and all of the advice and leadership. Each of them was a CEO in a publicly listed company, so they had a lot of experience. ... These guys provided business sense and a lot of good advice. ... I think other milestones were possibly when the board was formed with high-calibre individuals. We then add a much better governance system and good referral and contacts and everything else. (Manu-2)*

For some entrepreneurs, establishing a high quality board was a learning process:

*Another key one was when we changed our whole board of directors 18 months ago... We brought on a world class board of directors... that was always just a very difficult thing, especially with changing corporate governance in the world. Then having a trouble story and bankruptcy protection really limits what you can do. I think a lot of it, too, it was my ... my lack of ability to really understand what the board of directors could be, and their value, and how to put it together. ... Companies just don't put their time and energy – or have difficulty doing it. It can be such a positive or a negative, the board. People don't quite get that part*  
(Bio-1)

*For the first time I could say ... about a year ago we've really strengthened our board of directors and we've really strengthened our executives. ... Up till a year or so ago we didn't necessarily have that... as far as really pushing and making J and I accountable for different things I'd say that's really kind of been happening the last year or so.* (Trade-2)

Only one interviewee felt that the board of directors did not add significant value:

*No. The board is 100% money. That's their value-added. In retrospect, I don't think I got a whole lot of coaching/mentoring/management support or anything like that. Maybe in the areas of some planning, but that's about it. It hasn't been extremely valuable.* (IT-2)

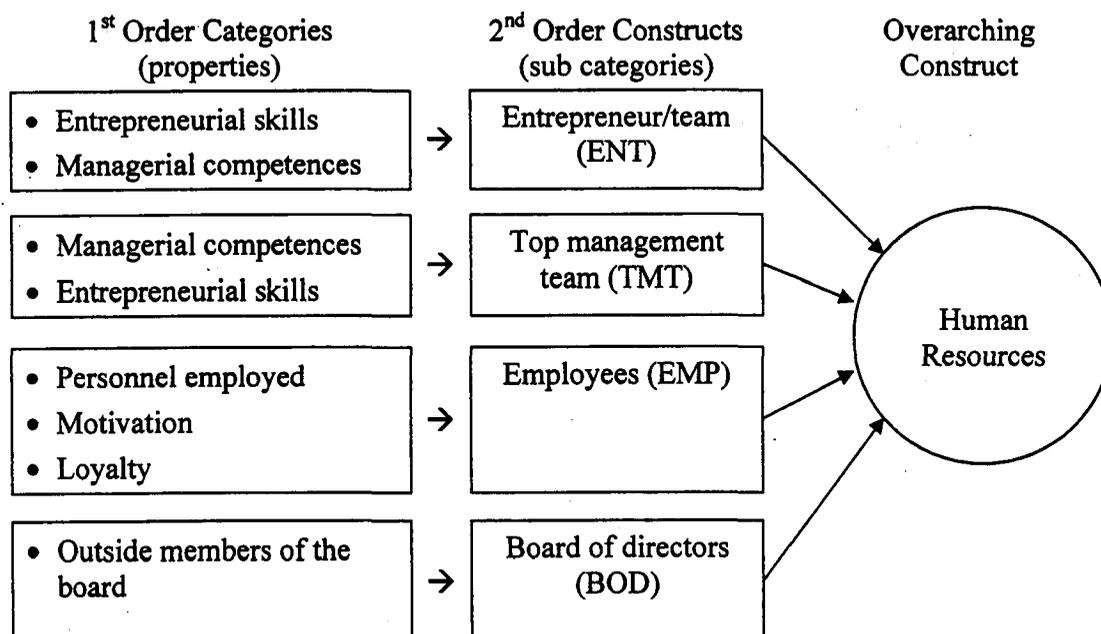
Boards of directors often play critical roles in entrepreneurial firms. They generally add significant value during the growth process, even though firms differ in the extent to which they use their boards and realize their value potential. The dimensions of



this category are similar to those of the entrepreneur/entrepreneurial team and top management team categories; that is, education, entrepreneurial experience, industry/business experience, and networks. Again, the critical issue is whether the board complements the other components of the upper echelon and brings diversity to its decision-making processes.

*Others.* Two other subcategories of human resources emerged from the data: advisors (Trade-2, Trade-3, Finance-1) and consultants (Trade-2). Interviewees acknowledged the helpfulness of advisors and consultants, however, their contributions were not as significant as the other subcategories discussed so far. The action-oriented themes that emerged around human resources category were hiring, human development, people management, and succession. Table 6-2 lists the properties and subcategories of the human resources construct.

**TABLE 6-2**  
**Data Structure: Human Resources**



### 6.1.3. *Financial resources (F)*

Financial resources are the monetary assets the firm controls. Financial resources are tangible and therefore fairly straightforward to define and measure. Flows comprise cash inflows and outflows, and larger stock can be achieved by increasing cash inflows and reducing cash outflows. The categories (constructs) that emerged from the data were: seed capital, bootstrapping, venture capital, private equity, public offerings, debt financing, tax credits and grants, cash from ongoing operations, and cash flow. While seed capital is the starting point of financial resources, cash flow is effectively the bottom line, after all cash inflows and outflows are taken into account. The remaining subcategories (e.g., bootstrapping, venture capital, and private equity) are different vehicles for controlling cash inflows and outflows. The qualitative data analysis revealed that a firm's choice of financial resources reverberates through all its other resource bundles.

*Seed capital.* Seed capital establishes a firm's initial cash position. It determines how long the firm can sustain without additional funding, given its burn rate. Most of the case study firms identified seed capital among initial resources involved in founding. Some firms raised seed capital via bootstrapping alone, others used bootstrapping in conjunction with other funding sources. This subcategory will be further discussed in Section 6.2.

*Bootstrapping.* Bootstrapping was the most common method for raising seed capital, amongst our sample firms. The bootstrapping methods used were a mix of cash-raising techniques, such as drawing on personal savings and personal debt/credit, and cash-saving techniques, such as sweat equity:

*We bootstrapped it so we never... we've never been funded. It was just my partner and I and 10, 15 credit cards maxed out so that's how we grew the business. ... the first probably five years growing the company I just took out enough money to survive on and never anything more. (IT-1)*

*Well I had to mortgage my house and in fact the initial stage I actually had to sell my house ... when I launched. (Finance-1)*

*... I would work for free until the company was making money. ... No one took any salary until the company was profitable. (Trade-1)*

*... we didn't have any other staff at the time. So we paid ourselves \$24,000 a year of our own money. (Trade-2)*

*Initially, we each put in \$10,000 of our own money... So this was a first-round seed capital. Then we put in a lot of sweat equity, actually working below minimum wage for maybe four years on a per-hour basis. ... We had a break in terms of using cheap rent and essentially a patient landlord who wouldn't kick us out if we skipped a payment, and we had access to tooling and CAD and resources that normally a start-up wouldn't have access to, unless you had an arrangement like we did. So the value of that kind of arrangement is hard to assess, but it's real. (Manu-2)*

The second most common financing method used by our case firms was equity financing, including venture capital, private equity, and public offerings.

*Venture capital.* Venture capital (VC) was used by four case firms, including the two Korean firms (IT-3 and Eco-1). One other firm (IT-1) indirectly accessed VC funding when it was acquired by a Silicon Valley Internet startup. The Canadian

interviewees said that VC funding was an important growth milestone that had various strategic implications, but the Korean interviewees did not take this view, for a couple of reasons. First, the Koreans garnered relatively small amounts of VC funding; for instance IT-3 received \$500,000. Second, the Korean entrepreneurs received less strategic and operational guidance from the venture capitalists than would be expected in North America. In contrast, the Canadian interviewees said that they preferred VC funding. The case study firms attracted varying amounts of VC funding, from as little as \$10 million (Manu-2) to as much as \$65 million (IT-1).

*We made the investment up front to build the product, to build the company. That's why we had the venture capital investment behind it. ... You can grow one of two ways, right? Organic growth with your own resources, or bring in a substantial amount of upfront cash so you can grow the business quickly. (IT-2)*

Interviewees indicated that in general, VC funding positively impacted the board of directors (H), top management team (H), networks (S), credibility (S), and reputation (S), although the degree of value added varied. On the other hand, VC involvement creates significant growth pressures, and sometimes forces firms to outpace their 'natural growth rate':

*I think that we would be further ahead if we grew more controlled. The VCs put pressure on you to grow faster, and you do unnatural things because of this desire to grow faster than you should. ... "At all costs, get revenue." If you're not ready with a product, you've still got to go get revenues so you sell stuff you don't have, and then you create a crisis because you can't deliver what you sold. (IT-2)*

*When we sold the company to the Internet start-up in San Francisco they were very well capitalized. ... They acquired us and then subsequent to that they raised a total of about \$65 million U.S. We were kind of part of that whole process. ... A great learning experience but when we reacquired the business 18 months later we just didn't want to go down that route again where we had then VC partners and we really like to control our own destiny. There's always that question about how fast can you grow and what it takes to raise capital, what you give up for that and it's just been our own personal preference that we would rather fund it through our own cash flow in the business. (IT-1)*

One interviewee described how his/her firm had benefited from pacing their VC funding and diluting their equity:

*That's the other thing we did differently. We told the venture capitalists, "We know you want to give us a lot of money, and we could take all of it and spend it very easily; however, we don't need as much money as you are offering to us." So we capped every equity raise to a 20% dilution and agreed to that dilution right off the bat, that we said, "Every time we raise a capital, we'll live within the means of the 20% dilution that we raise, as opposed to selling way the company when the price is very low and we haven't achieved anything." So they sort of agreed to that pacing, or that metering, so once you eliminate one of the moving parts, it makes it easier to adjust on evaluation or negotiate on evaluation, because at least the dilution is pegged and then you just sort of argue on the shares and how much you get. But the tendency for a lot of entrepreneurs, I think, is to take as much of the money that is offered to them, but then it means you*

*become an employee again too soon, when in fact they are bureaucratic refugees that want to achieve independence (Manu-2).*

*Private equity.* Three case study firms (Trade-2, Finance-2, and Media-1) chose to finance via private equity, because of the entrepreneurs' previous experience and/or connections. The size of private equity funding varied significantly, from \$570,000 provided by friends and family (Trade-2) to multimillion dollar contributions from merchant banks (Media-1). In two other cases, strategic alliance partners bought into the firms by providing funds (Media-1) or other valuable goods and services (Manu-2).

Even though private equity investors were generally considered to be more 'hands-off' than venture capitalists, several interviewees indicated that their investors had provided "a few business leads" or created a "halo effect":

*They owned non-voting shares, they were not on the board, and they did not participate in the management of the company in any way... And they did, over time, provide us with a few business leads, and were helpful there, but other than being "good guys" they weren't in here saying, "Hey, you should do it this way" or "We want board seats," etc. So they were very much hands-off. (Finance-2)*

*They had bought in at 27% of the company and it was a bit of a strange deal whereby we sort of exchanged IT against an equity stake, essentially getting the halo effect on (their) brand. And it was a good reciprocal arrangement at the time. (Manu-2)*

Several interviewees also suggested that private equity increased the pressure on entrepreneurs to provide investors with an acceptable rate of return, both in terms of time and dollars; for example:

*We have ... a group of investors that we took a \$7 million round from last year and ... there is a five-year clock that is ticking... It just means that for that \$7 million ... we need to drive towards a liquidity event within five years. (Trade-2)*

*With these institutions or merchant banks that may have a window of three to five years, so you had to focus on preparing for their exit... (Media-1)*

*Public offerings.* Two of the case firms were publicly listed, but they had been through very different startup patterns. Bio-1 had been a dormant public company when the co-founders came up with an opportunity in a different industry and revived the firm.

*Just continual fundraisers... More shares, yeah more shares for cash. ... We just did a \$12 million round, we did another \$12 million round 18 months ago. Before that, though, it could be anywhere from \$1 million to \$2 million to \$5 million. ... Again and again and again. The master of the small finance... (Bio-1)*

Manu-2 took the typical route to public listing, through an initial public offering (IPO). The firm raised \$76 million on its first IPO and another \$56 million on a follow-on offering. The interviewee reported that going public had significantly affected the firm's systems and policies.

*...a lot of it came by virtue of SEC driven initiatives ... we were listed on the NASDAQ ... so this imposed us to peg, let's say compensation with performance, starting with the CEO, with a trickling down effect... It was actually pre-IPO because when you go with capital markets, you need to file with the regulator your stock option plan, and the stock option plan has to be up to exchange standards and we had them to modify and formalize a lot of these things before going public as a prerequisite. (Manu-2)*

Another interviewee neatly summed up the key difference between an IPO and other types of equity financing.

*When you get a venture capital group onboard, you are probably giving them board seats and lot of control over your future. Whereas on the public side, they were really silent partners, silent financiers. They're betting on you to take the ball and run, and don't really – generally have no impact on strategy or execution or direction. (Bio-1)*

*Debt financing.* Several interviewees mentioned debt financing, but this method of raising funds is hardly a growth milestone. One interviewee did suggest that debt financing helped the firm to pursue a business opportunity.

*And selling the test equipment gave us the credibility, the know-how to go into fuel cells as a future step and gave us the growth and revenue stream initiative.*

*And then we went from fuel cells to test equipment and back to fuel cells once we had established ourselves and debt financing in place. (Manu-2)*

Several interviewees suggested that a line of credit helped maintain liquidity so the firm could meet short-term obligations, such as payroll.

*... then I was also able to negotiate a line of credit with the parent company that we were acquiring it from... it was something like a \$600,000 line of credit because we needed to fund this burn rate. (IT-1)*

*Grants and tax credit.* These types of government support were not used by many firms in the case pool. However, several interviewees indicated that these arrangements had helped them manage cash flow, either by providing a cash influx, in the case of grants (IT-3, Trade-2), or by reducing cash outflows, in the case of tax credit (Manu-1).



*Cash from ongoing operations.* Several interviewees reported that their growth was nearly, or even totally, self-funded. They had not relied on any external funding or debt financing.

*(Before we were acquired by the Internet start-up,) we grew the business as fast as the cash flow in the business would allow us to grow. Any time we opened up a new market it's because we're creating enough profit – enough cash flow to support the expansion of the business (IT-1)*

In other cases, retained earnings and revenue streams were critical sources of cash.

*Cash flow.* Cash flow is effectively operating capital. It takes into account other financial factors, including funding, revenue, and profit, and is particularly critical in a firm's early growth (Brush, Bromiley, & Hendriks, 2000; Churchill & Mullins, 2001). In a sense, cash flow is the ultimate bottom line in the financial resources bundle, because a firm can go under if its cash position is such that it cannot meet its short-term obligations. Many interviewees emphasized the importance of managing cash flow:

*...that's classic when the companies go out of business because they grow too fast and that usually relates to a cash flow issue. They're not projecting cash flows correctly and they get ahead of themselves. They're spending money faster than they're making the money beyond their capital resources. ... I think a lot of companies get caught up in being overly optimistic in their sales projections, cash flow projections and if things don't materialize and you can't meet your payroll then you've got a big problem. (IT-1)*

*It has only been one year that we didn't have to worry about meeting the payroll for the next three months, which means that our cash reserve could sustain our*

*burn rate less than three months. ... The keys were sales, sales, and sales – so that we never run out of cash. (IT-3)*

*But in healthcare, ... our burn rate is anywhere from a half a million to \$1 million a month now, when you're trying and do something on a larger scale. It's many years of research. So you really need to have at least a year's cash in the bank at all times. We probably average three or four month's of cash. ... So you get a milestone, you raise some money, then you got to go fight for the next milestone to raise more money. It's just – it's a treadmill. It just goes on and on... (Bio-1)*

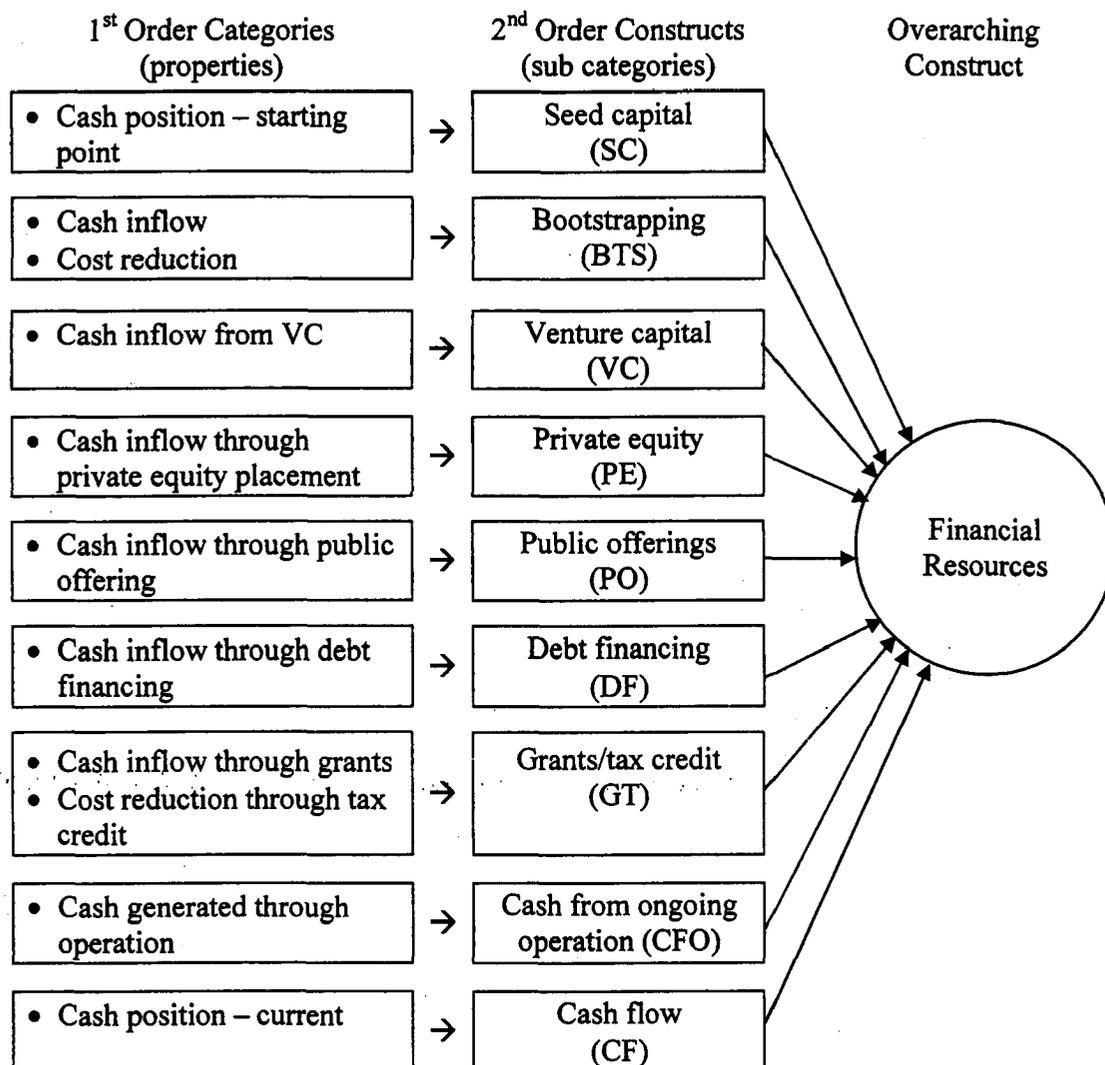
*Like every two weeks we'd have to raise money because we were burning \$150,000 and we were pre-revenue. ...if you have like 32 people that you have to pay every two weeks and ... you have to do it right and you have capital expenditures and computers. (Trade-2)*

*With this one in the beginning, yeah, we had a bit of a cash crunch at the time but the sales come and superseded that and we grow out of the cash crunches and before you knew it they were a thing of the past. (Trade-3)*

*And because of the cost of the sales cycle being so long, you need to be careful that you don't run out of cash in between. And the cash to cash gap is very long, even though the technology is very quick to put together, and it takes long time to collect your money from government as well, which is why financing is so important. (Manu-2)*

Several interviewees said that “self-funded growth” was particularly relevant to sustainable growth. Self-funded growth is the action-oriented theme in this category. Table 6-3 lists the properties and subcategories of the financial resources construct.

**TABLE 6-3**  
**Data Structure: Financial Resources**



#### 6.1.4. Organizational resources (O)

Four subcategories of this construct emerged from the data: culture, communication, organizational structure, routines/programs/processes, and systems. One interviewee (Trade-1) used the term 'infrastructure' to describe all these subcategories, except culture.

*Culture.* Some of the interviewees could readily define their organizational culture; others thought that they had a distinctive culture even though they couldn't clearly define it. For example, the Trade-3 interviewee said, "I don't know how to explain it... But after sitting back and looking at it I would say there's definitely a culture that's developing."

Culture is an attribute of the collections of individuals associated with a firm, so it is closely related to the human resources category. Many interviewees pointed to the evolving nature of organizational culture. It originates with the lead entrepreneur/entrepreneurial team and is maintained by the top management team and employees. As such, organizational culture is reinforced through human resource strategies such as hiring, training, and communication. The interviewees summed it up well:

*How did it start? I think the culture will be following the lead entrepreneur, the founder, if they're running the business. It really has to start there, because they're going to hire the first group of people and so really that culture's engrained right from the start. I think we're lucky because we've always had that sort of battle mentality. We've always had to look out for each other, we're always in the trench together, basically. So it was good. People who can't survive in that kind of stress weed themselves out. Having learned a lot more about it, I think we developed – that's the way we needed to do it to survive. It wasn't out of a necessarily conscious effort in the beginning. Once we recognized – when there was mistakes made and such, then we really understood our culture better. When people didn't quite fit, that was when we were able to learn the*

*value – talk about culture and what it meant, and start developing some guiding principles around it and having discussions. When our senior management say*

*“he’s not the right fit,” we know what that means. It’s a cultural thing. (Bio-1)*

*It was founded based on – we met for probably nine months before we left our jobs and those nine months were all based on what kind of company do we want to start. (Finance-2)*

*We’re still small enough that it’s predominately from the old guard teaching the new people – “oh you don’t do that, not here, that’s not the way we do things!”*

*(IT-2)*

In some cases, entrepreneurs took a deliberate approach to developing organizational culture, for example:

*Four years ago, D and I decided that what we wanted to create within Finance-2 was a company within a company. (Finance-2)*

*We actually went offsite and ... we got feedback from all different employees on forms and we collectively took all of it and then we brought that out, OK. So we rode it... and we’ve always... It’s how we hire and it’s how we make people accountable all the way through. So our culture is... (Trade-2)*

In turn, culture contributes significantly to employee motivation and loyalty.

*We’ve got a really odd culture. It’s a tight knit – that’s part of our culture, to survive bankruptcy protection, survive the hard time. That keeps your company focused, it keeps your company tight, because you’re all sort of surviving together. That’s actually contributed to the climate of people that are really there for the*

*success of the company. It's really contributed to a pretty low turnover of the critical people. (Bio-1)*

*We want to provide an environment – our culture is that we want our staff to enjoy coming to work. We want them to wake up in the morning and say, "I got to go to work. Yeah, that's all right. OK, cool." ... It is a fun culture – a fun environment. (Trade-1)*

In some cases, interviewees said that their culture was a selling point or a source of competitive advantage (cf. Hansen & Wernerfelt, 1989). Consequently, they made calculated efforts to export their culture to new locations when they expanded geographically. These interviewees argued that this strategy was a key part of their success.

*I think one of the things when you're expanding your business because I think a key part of the success is the culture of the business. Culture that you established with the company so when you're going from Canada to the UK or Canada to the US how do you export the culture of your business. I think for us because I've been able to physically move to those new market areas we're able to export the culture and try to create a similar culture in that new country. (IT-1)*

*In 1999 I sent our top two sales people, one to San Francisco. ... I also moved one to Chicago. That's (because) we wanted to export the culture of the organization to those cities and then within the organization everybody had to realize how important it was for us to be successful in those markets to be successful longer term. That's how it got started. ... We exported our culture.*

*One of the keys I believe to the success of the company is the culture that we've developed here. (Manu-1)*

However, exporting culture can slow down expansion, because it limits the pool of human resources the entrepreneur can mobilize in the new location. Similarly, an unusual organizational culture will sometimes constrain growth because it makes it difficult to find the right human resources:

*No it's more of a challenge finding the right people that will fit the culture cause this culture – this industry – isn't very business-minded, let's put it that way. ... We need to find people that are very focused on business – in this upper management levels now – that are focused on business. ... It's challenging to find people like that that will fit in the culture because we might find someone like that who's been in the auto parts industry, right. They might not fit in this culture. (Trade-1)*

In sum, the entrepreneurs we studied generally took culture very seriously:

*Things that keep me up at night would be more cultural than the business. I mean, we could lose a client today, even a big client, and it would be painful but not the end. But cultural erosion could be the end. ... Culture is a very important thing. It needs to be continually tended to. (Finance-2)*

It is also important to note that culture is evolving and dynamic; it changes as the firm grows. For example, changes in the top management or entrepreneurial team can have a significant impact on organizational culture. Like many constructs within the strategic resource bundle, the degree of definition and shared identification of culture matters more than the culture itself. Hence, the former are the dimensions of this category.

*Communication.* Communication connects the individuals associated with a firm. Effective communication is a way to share the vision (S) and/or culture (O) of the organization and, hence, it contributes to employee motivation and loyalty (H). Several interviewees (IT-2, IT-3) emphasized that repeated communication was critical for sharing the company vision. Indeed, the Manu-1 interviewee commented that good communication is part of culture. In general, the interviewees concurred that regular communication was the key to growing the business.

*In terms of major learnings, ... communication. I could have, should have probably been better at communicating the vision to more people more often. I make the assumption that if I tell you once it sticks, but it doesn't. It's almost like every week you got to keep repeating the same thing. Communications is critical.*

*(IT-2)*

Communication is closely related to systems, such as intranet and email; and routines/programs/processes, such as regular meetings. The dimension of this category can either be outcome-based—how well vision and culture are shared throughout the organization—or infrastructure-based—how well the communication links are established and defined.

*Organizational structure.* Most interviewees recognized that organizational structure was relevant to firm growth, but the data revealed that the individuals concerned often had quite different conceptualizations of organizational structure. In some cases, interviewees identified organizational structure as the composition of the top management team and the reporting structure just below it. Other interviewees described organizational structure as the overall composition of the workforce; for example, the



number of employees in each functional area or departments. And yet others related organizational structure to the firm's hierarchies.

Organizational structure evolves and changes as a firm grows. For example, changes at the top in Manu-2 and shifts in Media-1's business model significantly affected the organizational structures of these firms. The theme that emerged from the data for this category is 'reorganization and formalization.' One interviewee said that they actually used their organizational structure to drive and support growth:

*We put in an infrastructure, went and got the business and the business did better than we forecasted so we're straining our resources right now. It looks like we're going to grow from \$20 million to \$30 million next year. We've been spending the past 45 days completely figuring out the next infrastructure that we need to support that kind of growth and that's what this organizational chart is now the infrastructure that we're going to implement in order to sustain that kind of growth, to prepare for that growth next year. You'll see in red is wherever we're placing new hires. (Trade-1)*

*Routine/program/process and systems.* These two subcategories are closely related and it is difficult to draw a line between them. These subcategories are also related to communication routines, such as daily, weekly, monthly, quarterly, or yearly routines; and communication systems, such as intranet, email, VOIP messaging, and so on. The degree of formalization (e.g., written policies and manuals) varied significantly across case firms. One firm formalized their decision-making process using a flow chart; other firms adopted much more liberal approaches:

*I actually have a framework of our decision-making. A transactional decision-making that as an engineer you'd understand because it's a flow chart and I know where everybody's job fits and everybody else knows where everybody else's job fits in that flow chart. ...It's got every moving part of the business flow charted so we can monitor it. (Finance-1)*

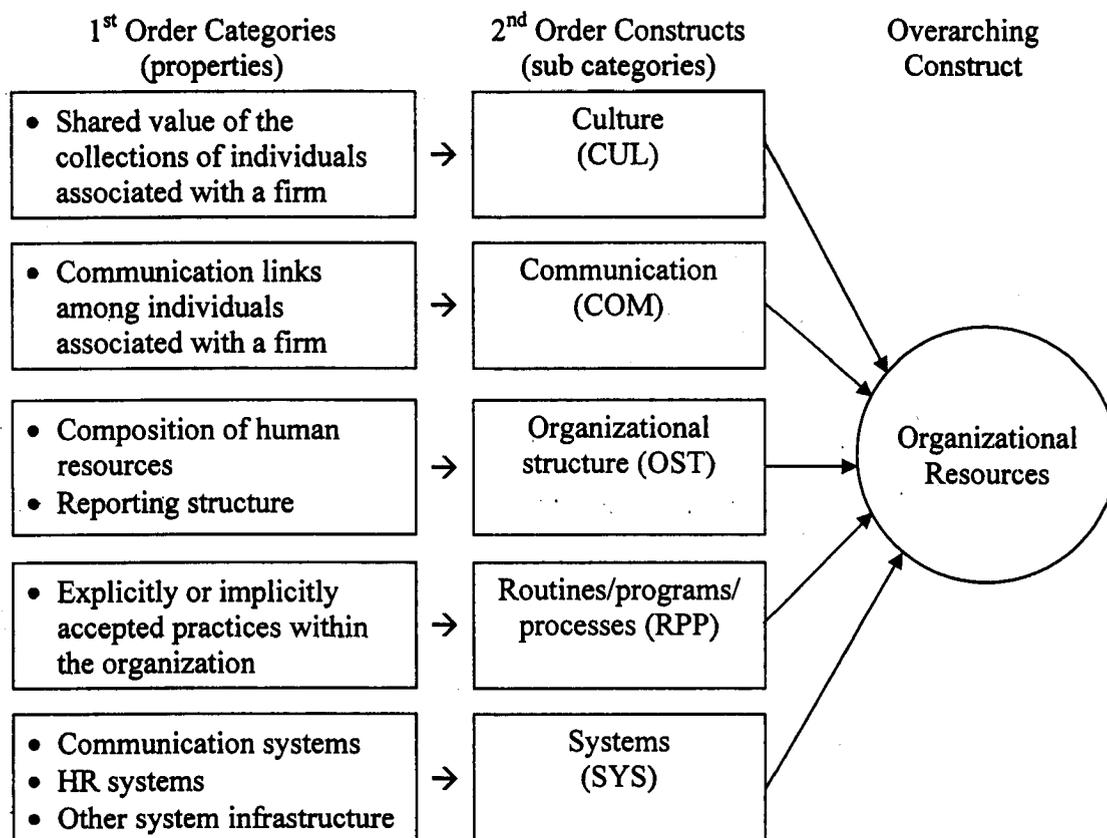
Entrepreneurs often find it necessary to formalize their routines/programs/processes and systems as the firm grows:

*Again, as evolution of the business that's kind of happened a lot more over the last year or so, before it was... our mentality used to be there is no manual, come in and write the manual and that's how we would hire. Again you're going to do \$50 million in revenue so you need a proper purchasing process. You need a proper logistics flow. You need a proper claims department. There's certainly a lot more structure than we've ever had. We have IT projects and they go through executive and make sure everyone's on the same page. (Trade-2)*

*We did that actually when we re-acquired the company in 2001. That's when we established this whole way of running the business. I mean I think we've always had it to a certain degree but we became much more diligent in having a system that allows the company to operate and I think that was probably one of the things going from \$4 million in a sales to \$12 million in sales and which will allow us to get to \$50 million or \$100 million is having these systems in place where everybody knows how they impact the company. At the same time it's very difficult for people to hide within the organization not contributing. If you're not contributing we will find out pretty quickly. (IT-1)*

In sum, the organizational resource subcategories are a critical coordinating mechanism within and/or between human resources and strategic resources. As such, they are crucial for sustaining firm growth. Table 6-4 lists the properties and subcategories of the organizational resources construct.

**TABLE 6-4**  
**Data Structure: Organizational Resources**

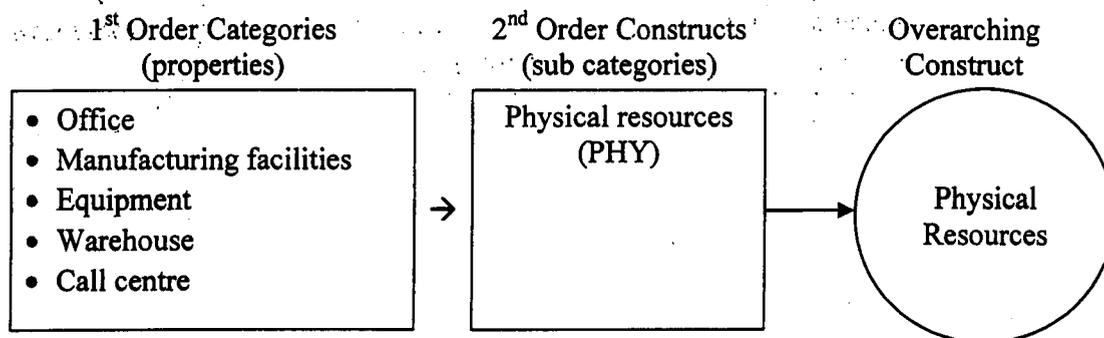


#### 6.1.5. *Physical resources (P)*

In-depth discussions with interviewees on topics relevant to firm emergence and growth revealed that some interviewees traced their growth trajectory in terms of their offices and/or facilities. Indeed, facilities are a major growth milestone for some firms. For example, manufacturing facilities and equipment can be multimillion dollar

investments (Manu-1, Manu-2). Bio-1 recently started producing biomedical products in its own factory. These in-house manufacturing facilities have become a source of competitive advantage and higher margins, as well as an important isolating mechanism for the firm's proprietary technologies. Thus, physical resources have provided a foundation for future growth. In other words, physical resources not only conferred Ricardian rents, but also constituted an integral component of Schumpeterian rent creation. Similarly, a warehouse and call centre were key assets for Trade-1 and IT-1, respectively. In general, setting up the first office or moving into larger offices or new facilities were symbolic growth events for many entrepreneurial firms. Table 6-5 lists the properties of the physical resources construct.

**TABLE 6-5**  
**Data Structure: Physical Resources**



#### 6.1.6. Comparison with the *a priori* model

The constructs emerged from the data were largely consistent with the *a priori* conceptual model although there were some differences in the subcategory level. For example, the *a priori* theoretical model defined strategic resources as “the resources that are related to the way in which the organization develops its capabilities to exploit an opportunity in the marketplace (cf. Wickham, 2001).” Indeed, the emerged model confirms the view that opportunity is central to the entrepreneurial process (Shane &

Vankataraman, 2000), and that entrepreneurial opportunities exist primarily because people have different beliefs about the relative value of resources (Kirzner, 1979). This is also in line with Penrose's (1959: 31) argument that firm growth is determined and/or limited by "productive opportunity."

On the other hand, the key difference was in physical resources. The *a priori* conceptual model assumed that entrepreneurial firms possess at least a minimum level of physical assets that are generally tradable and immediately purchasable with financial resources. The previous literature shows that physical resources are not a salient concern for entrepreneurial managers in early stage firms (e.g., Lichtenstein & Brush, 2001). Consequently, the *a priori* model did not include physical resources.

However, the data indicated that physical resources can be critical for early firm growth, depending on the firm's industry and business model. Contrary to the assumption that physical resources are not subject to time compression diseconomies (cf. Dierickx & Cool, 1989), some firms reported that developing these physical resources consumed significant time and efforts. Physical resources are usually less incremental and tend to involve large scale changes which may easily unbalance a firm's resource system. Thus, the modified conceptual model includes physical resources as one of five key constructs.

*Revised Proposition 1. There are five resource bundles (strategic resources, financial resources, human resources, organizational, and physical resources) that are most salient at the early stages of growth.*

Table 6-6 illustrates the comparisons between the emerged model and the *a priori* conceptual model.

**TABLE 6-6**  
**Emerged Constructs: Comparison with the A Priori Conceptual Model**

<b>Emerged Model</b>	<b>Overarching constructs</b>	<b>A Priori Conceptual Model</b>
<b>Subcategories (2<sup>nd</sup> order constructs)</b>		<b>Components</b>
Vision (VSN) Business model (BM) Opportunity (OPP) Client/customer base (CNT) Legitimacy (LGT) Market position (MP) Network (NTW)	<b>Strategic resources</b>	Company vision Business portfolio Market opportunities Customer base and reputation in the market  Market position
Cash flow (CF); Cash from ongoing operations (CFO) Debt financing (DF) Venture capital (VC); Private equity (PE); Public offerings (PO) Seed capital (SC); Bootstrapping (BTS) Grants/tax credit (GT)	<b>Financial resources</b>	Cash flow Debt capacity New equity availability
Entrepreneur/team (ENT) Top management team (TMT) Employees (EMP)	<b>Human resources</b>	Entrepreneur and/or entrepreneurial team Expertise and skills (management skills and entrepreneurial skills) Leadership Board of directors and advisory boards
Board of directors (BOD) Organizational structure (OST); Systems (SYS); Routines/programs/processes (RPP) Culture (CUL) Communication (COM)	<b>Organizational resources</b>	Internal systems, structures, and routines  Organizational culture Communication links and informal systems
Physical resources (PHY)	<b>Physical resources</b>	

## 6.2. Relationships among Constructs (Categories)

In the next phase of the research, I used selective coding to integrate and refine the constructs that had emerged through open and axial coding (Strauss & Corbin, 1998: 143). First, I extracted relationships among the constructs through process-oriented, within-case analysis. I concentrated on analyzing the sequence of evolving interactions among categories (cf. Strauss & Corbin, 1998: 165) in the context of firm emergence and growth, rather than analyzing the causal relationships among them. In this vein, firm emergence and growth constituted structural conditions to which these interactions could be traced. At the same time, these relationships underpinned growth, consequently changing and renewing structural conditions.

Five different types of interactions emerged from the data based on the direction and the nature of relationships: *Increase-Push*, *Increase-Pull*, *Decrease-Push*, *Decrease-Pull*, and *Associated*. First, *Increase-Push (Push+)* refers to relationships where the increase in the antecedent category contributes to, or leads to, the increase in the target category. For example, securing a high-profile client account ("Client": S) contributes to the firm's credibility/reputation ("Legitimacy": S). On the other hand, *Increase-Pull (Pull+)* refers to relationships where the increase in one category prescribes the increase in the other category, even though the antecedent category does not directly contribute to the target category. For example, an IPO ("Public Offerings": F) requires that the firm formalize its organization structure (O) and develop various systems (O).

Third, *Decrease-Push (Push-)* refers to relationships where one category increases at the cost of another category; for example, hiring senior executives or employees (H) has cost implications (F). On the other hand, *Decrease-Pull (Pull-)* refers to relationships

where the increase in one category prescribes the decrease in the other category, even though the antecedent category does not directly decrease the target category. This relationship also exists where qualitative characteristics or changes in one category decrease another category; for example, a new business model (S) reduces employee numbers (H).

Finally, *Associated* refers to neutral relationships where one category does not directly or indirectly lead to the other category, but nonetheless the two categories are interrelated. For example, "BOD" (H) and "system" (O) are associated because the board of directors is part of the firm's governance system.

These relationships were identified at the subcategory level wherever possible, although more abstract relationships were related to the main construct level (e.g., human resources). Tables 6-7, 6-8, 6-9, 6-10, and 6-11 outline the relationships originating from each resource bundle.

Next, these relationships were integrated into a theoretical model through cross-case pattern analysis, in addition to within-case analysis. This will be discussed in the next sections.



**TABLE 6-7**  
**Key Relationships Involving Strategic Resources**

<b>Antecedent</b>	<b>Relationship</b>	<b>Focal Category</b>	<b>Relationship</b>	<b>Consequence</b>
BOD (H: through business planning) Cash flow (F: through strategy)	Push+ Associated	Business Model	Associated Pull+ Associated Associated Associated	Clients (S: through competitive advantage) Network (S: distributor/partnership) Human resources (H) Cash flow (F) Org structure (O)
Clients (S)	Push+	Legitimacy	Push+	Clients
BOD (H)	Push+			
VC (F) Private equity (F)	Push+ Push+		Push+	Network (suppliers/distributors)
Legitimacy (S: to suppliers/distributors) Private equity (F) BOD (H)	Push+ Push+ Push+	Network	Push+ Push+	Clients/revenue Private equity (F)
ENT/team (H) Communication (O)	Push+ Push+	Vision	Associated Push+	Financial resources (F) Employees (H: through motivation)
Private equity (F)	Push+	Clients/revenue	Push+ Push+ Push+	Cash flow (F) VC (F) Partnerships (S)

**TABLE 6-8**  
**Key Relationships Involving Human Resources**

<b>Antecedent</b>	<b>Relationship</b>	<b>Focal Category</b>	<b>Relationship</b>	<b>Consequence</b>
System (O)–HR systems	Associated	HR	Associated	Culture (O)
		ENT/team	Push+	Seed capital (F) Bootstrap (F)/VC (F)/ Private equity (F)
			Push+	BOD (H)
			Push+	Vision (S)
			Push+	Network (S)
			Push+	Clients (S)
			Pull+	Systems (O)/RPP (O)
			Pull-	Org. structure (O)
VC (F) Org. structure (O)	Pull+/Push+ Associated	TMT	Push+ Associated	Client/revenue (S) Org. structure (O) – e.g., through formalization
		Misfit leadership	Pull+ Pull-	Communication (O) Employees (H)
VC (F) – through increased cash flow (F) Vision (S) Culture (O) / Communication (O)	Push+  Push+ Push+	Employees  Loyalty/ motivation	Push-  Associated Push+	Cash flow (F)  Org. structure (O) Culture (O) – through hiring approach/training
ENT/team (H)  VC (F) Private equity (F)	Push+  Push+ Push+	BOD	Push+  Push+ Push+ Associated	Business model (S) – through planning Network (S) Legitimacy (S) TMT (H) System (O) – governance

**TABLE 6-9**  
**Key Relationships Involving Financial Resources**

<b>Antecedent</b>	<b>Relationship</b>	<b>Focal Category</b>	<b>Relationship</b>	<b>Consequence</b>
Vision (S)	Associated	FR		
ENT/team (H)	Push+	Bootstrapping		
Network (S) – partner ENT/team (H) – through personal network or by choice BOD(H) – catalyst	Push+ Push+ Push+	Private equity	Push+ Push+ Push+ Push+	Network (S) Clients (S) Legitimacy (S) BOD (H)
ENT/team (H) Client/Sales (S)	Push+ Push+	VC	Push+ Push+/Pull+ Push+	Legitimacy (S) TMT (H) BOD (H)
		Public offerings	Pull+ Pull+ Pull+	TMT (H) Org structure (O) – through formalization Systems (O)
Business model (S)	Associated	Cash	Associated	Business model (S) – through strategy
Clients/sales (S) Employees/HR (H) Employees/HR (H) – through cost reduction Physical resources (P)	Push+ Push- Push+ Push-		Push+	Employees/HR (H)

**TABLE 6-10**  
**Key Relationships Involving Organizational Resources**

<b>Antecedent</b>	<b>Relationship</b>	<b>Focal Category</b>	<b>Relationship</b>	<b>Consequence</b>
ENT/team (H)	Push+	Culture	Push+	Clients/sales (S) – competitive advantage or selling point Employees (H) – through motivation/loyalty
TMT (H)	Push+		Push+	
Employees (H) – through hiring approach/training Employees (H) – through exporting culture	Push+			
TMT (H) – CEO priority Routines/programs/ processes(O)	Pull+ Push+	Communication	Push+ Associated	Vision (S) Culture (O)
Systems (O)	Push+			
NT/team (H)–preference TMT (H) Business model (S) – changes in business model IPO (F) – formalization	Pull- Pull+ Associated  Pull+	Org. structure		
TMT (H) Systems (O)	Pull+ Associated		Routines/ programs/ processes	Push+
ENT/team (H)	Pull+	Systems	Push+	Employees (H) – HR systems through motivation Communication (O) Routines/programs/ processes (O)
BOD (H)	Associated		Push+	
IPO (F)	Pull+		Associated	

**TABLE 6-11**  
**Key Relationships Involving Physical Resources**

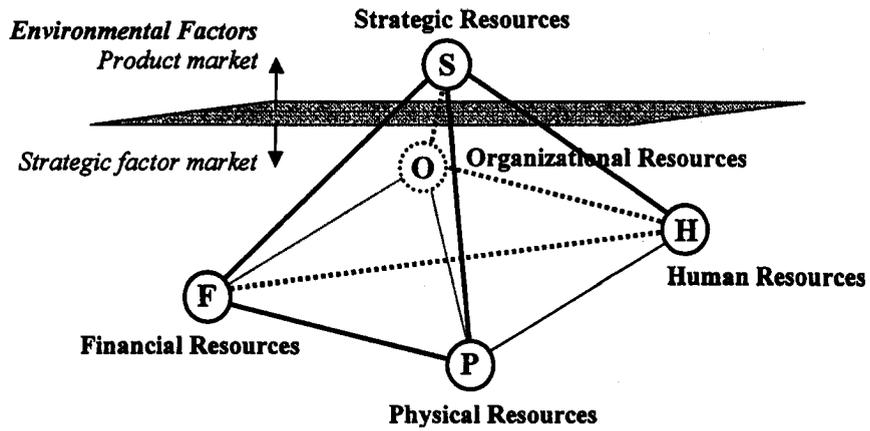
<b>Antecedent</b>	<b>Relationship</b>	<b>Focal Category</b>	<b>Relationship</b>	<b>Consequence</b>
		PR	Push-	Cash flow (F)

### 6.3. Conceptualizing Firm Growth

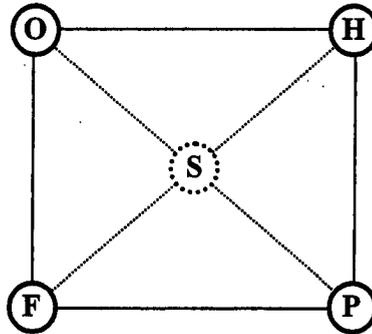
The *a priori* conceptual model was based on a system dynamics perspective (e.g., Forrester, 1961; Sterman, 2000). It proposed a three-dimensional dynamic resource pyramid model (a system) comprised of four vertices that represent each resource bundle (system elements). This theoretical framework is designed to conceptualize the Penrosean perspective of firm growth (Penrose, 1959): the pursuit of productive opportunities that are created, and at the same time limited, by the human and non-human tangible and intangible resources under the firm's administrative framework (See [Section 3.3](#)). Using this dynamic resource pyramid model, firm growth was conceptualized as a resource-based sequencing process (cf. Lichtenstein & Brush, 2001; Pettus, 2001; Garnsey, 1998; 2002: See [Section 3.4](#)).

In this section, I integrate the categories and subcategories thus far described into a theoretical framework. First, the dynamic resource pyramid model was modified based on the categories (constructs) and relationships that emerged from the qualitative data. The new model has five vertices: strategic resources, human resources, financial resources, organizational resources, and physical resources. The subcategories identified through axial coding (See [Section 6.1](#)) constitute dimensions of the five main categories. The edges connecting the five vertices represent the direct and indirect, feedback and feed-forward loops that connect different resource bundles. Thicker lines illustrate direct relationships; thinner lines denote possible indirect associations. The modified dynamic resource pyramid model is shown in Figure 6-1.

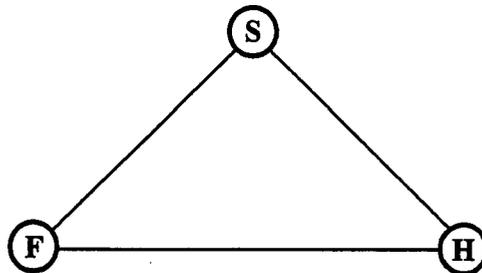
**FIGURE 6-1**  
**The Dynamic Resource Pyramid (Modified)**  
 (a) Isometric view



(b) Top view: the F-O-H-P base



(c) Cross-sectional view of the S-F-H triangle



### 6.3.1. Initial growth cycle

Most of the firms studied were founded at the human resources and strategic resources axis (H-S), via 'prospecting' (cf. Garnsey, 2002). In many cases, the process was opportunity-driven (S). The entrepreneur(s) recognized an opportunity (S), or invented or otherwise came up with a new product, technology, or services (S). Next, they made a venture creation decision to pursue that particular opportunity or business idea; and only then, assembled the initial team (H) to execute the decision. This was the pattern observed in IT-2, Manu-1, Manu-2, Finance-1, Trade-1, Trade-3, and Eco-1. The time the entrepreneurs spent prospecting varied significantly. For Manu-2, the prospecting process continued for over 20 years (see [Section 5.2.6](#)).

*We drove down for the summer for a couple of weeks just to hang out in California and saw this brand, "N." It was a clothing brand ... mostly tee shirts and I thought it was cool, bought a couple, brought them back to Canada. They were very popular with all my friends. People wanted to buy them off of me. I ended up going back down to California again just for fun and had picked up a bunch more, brought them back, sold them to my friends and then realized hey ... I've got my business degree. This product's not available in Canada. How can I get this product into Canada? Maybe I'll take over. (Trade-1)*

*What was interesting is the initial product that we manufactured was a plug-in rug that the inventor had envisioned that they would sell to office buildings for secretaries to keep their feet warm. That wasn't successful but from that idea, my partner was in the tile distribution and wholesale business and the only complaint he had ever had over the years – why people would let's say buy carpet instead of*



*tile – was that tile was cold. Now he had a solution, which was our product now to go underneath and heat his tile. He was able to be a visionary and see this product here, if I adapt it differently, I know that this could be very successful in another application. That's how the business transformed from being just an idea that needed some work as to where its potential was. (Manu-1)*

In other cases, the founding process was driven by the entrepreneur or entrepreneurial team (H). This was the case for NeoG (described in Chapter 3). Here, the entrepreneurs (H) made a venture creation decision and then engaged in an opportunity search process (S). Teams (H) were assembled, or otherwise existed, before the opportunity (S) was recognized. This pattern was observed in IT-3, Trade-2, Finance-2, and Media-1. In most cases, the entrepreneurs or entrepreneurial teams (H) reached a critical moment in their life that sparked the prospecting process. Again, the length of the prospecting period varied significantly. For IT-3, it took almost one year to settle on the opportunity and streamline the business model.

*It's a good mix of desperation and naivety. On the desperation side, we worked at X Life Insurance Company, myself and my two partners, and X Life had just received a takeover offer from the R Bank. ... we thought they've got an awful lot of investment professionals that they might not need us, so we started Plan B discussions ... "what if" this comes to pass. (Finance-1)*

*When that happened I decided I didn't want to work for a subsidiary of W, so that's when I said, "now's the time to create Media-1." (Media-1)*

However, prospecting is often not as clear cut as the *a priori* conceptual model suggested. For example, the lead entrepreneur of Trade-1 recognized the opportunity, but

he did not make a firm decision to pursue it until he met the seasoned industry veteran who would become his business partner. On the other hand, the co-founders of Trade-2 were close friends who had always been interested in doing something together. But, they didn't decide to launch a venture until they spotted an opportunity that would align with their complementary expertise. IT-1 had an even fuzzier prospecting process.

*In 1988 when we founded the company I met a fellow that worked at a Honda dealership here in Vancouver and it was sort of a mutual acquaintance and I was fresh out of UBC with my commerce degree – with marketing major. I was just interested to know how they were marketing their parts business. Through a discussion with a guy that worked in a parts department identified this opportunity to put together a professional outsource marketing service that we could offer to these car dealerships. (IT-1)*

Thus, 12 case firms were founded largely as the *a priori* conceptual model predicted; that is, they were initiated at the H-S axis. Only one firm diverged from this pattern. Bio-1's entrepreneurial process was initiated at the human resources and financial resources axis (H-F), rather than H-S axis. The co-founders of Bio-1 were directors of a dormant public company who used leftover funds from a mining venture to explore seemingly unrelated opportunities in the healthcare industry. Eventually, they started a biomedical venture by investing in several university research and development projects. The lead entrepreneur saw significant merits in using a pre-existing structure to start a new venture and was planning to adopt the same process in the future.

*... generally that's the same model I'm going to use again on my next venture because right now another partner and I – a different one – we own probably 2/3*

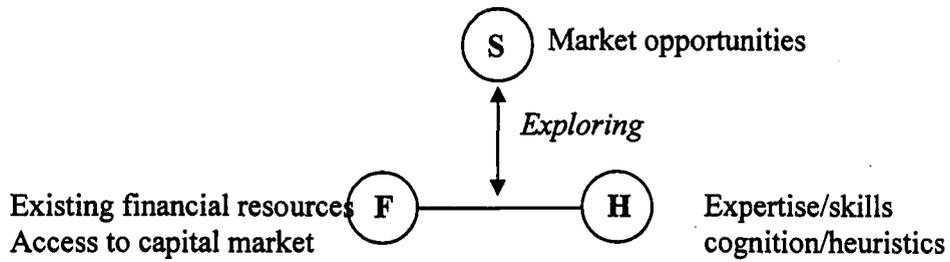
*of the outstanding shares on a shell company and with that – it's a vehicle, right. ...what it does is it enable you to have quick access to capital and a structure so that if you want to take advantage of an opportunity you have the cash, you have the structure there, so you can seize the opportunity and get control and move forward quickly. (Bio-1)*

This pattern of entrepreneurial process, which could be termed 'exploring,' is not uncommon in practice. However, it has not received much scholarly attention and may warrant future research given its many advantages. Figure 6-2 shows the initial growth cycle of a firm founded via exploring.

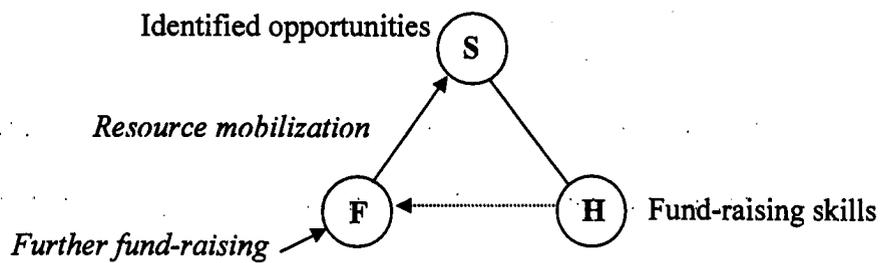
The other entrepreneurs and entrepreneurial teams (H) studied raised seed capital (F) through bootstrapping (IT-1, IT-2, IT-3, Manu-2, Finance-1, Trade-1, Trade-2, Trade-3, Eco-1), private equity (Manu-1, Finance-2, Media-1), venture capital (IT-2), and/or partnerships (Finance-1). These approaches are consistent with the resource mobilization pattern around the H-F axis suggested by the *a priori* conceptual model. This process was also informed by the nature and size of opportunities (S) and the business model (S).

The interviewees typically identified their initial growth cycle around one face of the pyramid (S-H-F), as shown in Figures 3-2(C) and 6-2(C). But, sometimes this process involved other resource bundles as well. For example, opening the first office (P) was an event of symbolic importance in firm emergence. Some interviewees indicated that they established an organizational culture (O) from day one. Nonetheless, the saliency factors of these resource bundles were far surpassed by the S-H-F triangle.

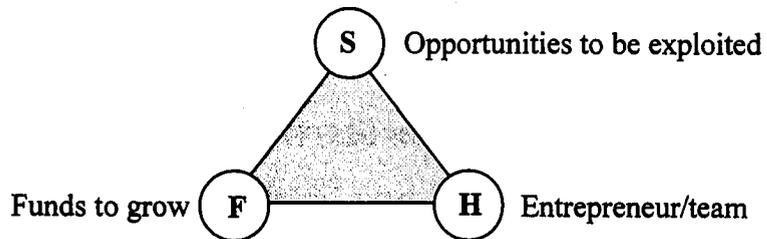
**FIGURE 6-2**  
**Initial Cycle of the Entrepreneurial Firm Growth involving Exploring**  
 (a) Exploring



(b) Mobilizing resources



(c) Completing the S-H-F cycle



Next, I discuss further growth cycles—the virtuous spirals that reinforce firm growth and the vicious spirals that undermine it. These spirals arise from the interactions that occur among resource bundles during firm growth; that is, positive and negative feedback and feed-forward links.

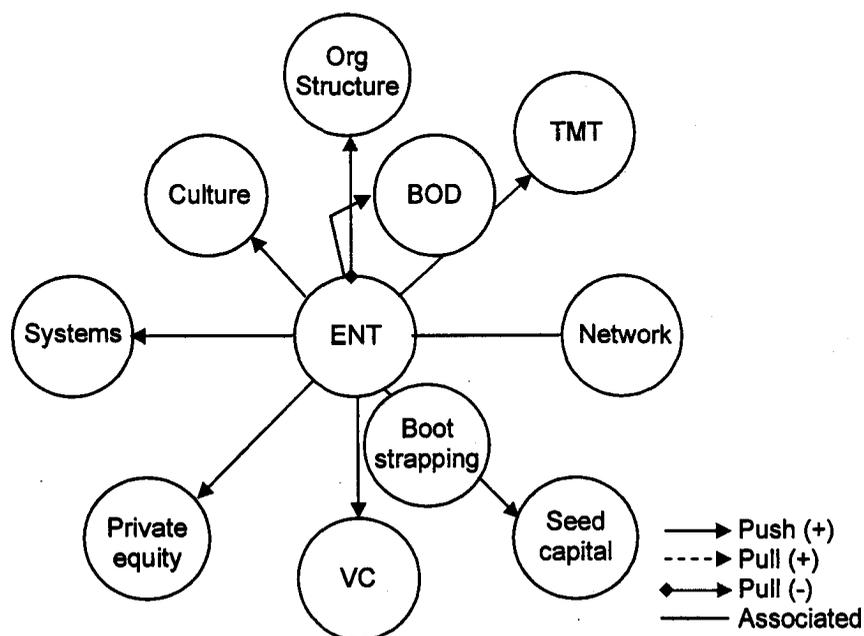
### 6.3.2. *Further growth cycles*

*Early growth: opportunity (S) to client/sales (S).* Once the initial growth cycle (S-H-F) is complete, the task of the entrepreneur/entrepreneurial team is to move the firm from mere potential to realized value, until growth is self-sustaining. In other words, and in terms of the model, from opportunity (S) to client/sales (S). All the resources that the entrepreneur/entrepreneurial team acquired and mobilized during the initial growth cycle, including seed capital (F) and human resources (H), are instrumental at this stage. The entrepreneur/entrepreneurial team uses these resources to hone each dimension of the business model (S) and the target market to effectively and efficiently exploit opportunities (S).

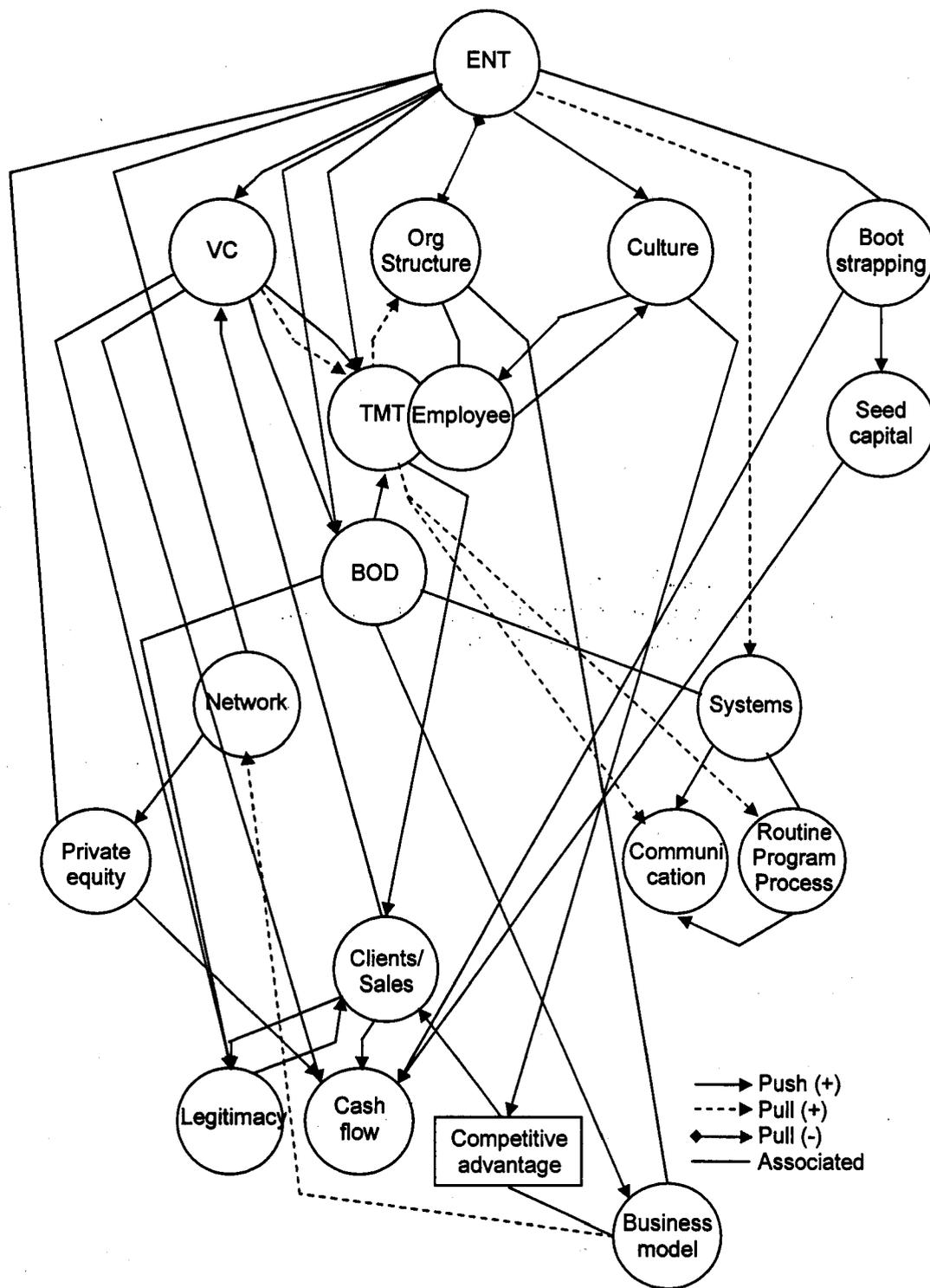
The data indicated that, at this stage, the virtuous growth spiral is driven by the attributes of the entrepreneur/entrepreneurial team (H); in particular, their personal networks. In our sample, only Finance-2 acquired its first client (S) through the entrepreneurial team's network. However, across the sample as a whole, networks were instrumental in raising private equity funds (F) and attracting quality human resources to the top management team, board of directors, and general workforce (H). Clearly, transforming personal networks into organizational networks is crucial to entrepreneurial success (cf. Brush, Greene, & Hart, 2001).

Entrepreneurs/entrepreneurial teams (H) demonstrate their commitment to the firm via their own investments; that is, by bootstrapping (F). Moreover, the quality of the founding team is critical for securing venture capital investment (F). In the early stages of the business, entrepreneurs/entrepreneurial teams directly or indirectly formulate the firm's vision (S) and culture (O), and develop its systems (O) and routines/programs/processes (O). Figure 6-3(a) illustrates the direct relationships associated with the entrepreneur/entrepreneurial team.

**FIGURE 6-3**  
**Relationships Originating from Entrepreneur/Entrepreneurial Team**  
 (a) Direct relationships (first-order)



**FIGURE 6-3**  
**Relationships Originating from Entrepreneur/Entrepreneurial Team (cont.)**  
**(b) Expanded relationships (second-order)**



The fundamental importance of the entrepreneur/entrepreneurial team to early growth is further revealed when we expand the web of relationships to include second-order relationships (see Figure 6-3(b)). The entrepreneur/team usually provides the firm with its initial funds (F), often from personal sources; at the same time, they minimise the firm's startup costs by drawing little or no salary. These efforts are critical for sustaining the firm's burn rate and filling in the cash gap between seed capital and self-sufficiency. Certain types of external funding, such as venture capital and private equity (F), bolster the firm's human resources by reinforcing the board of directors and top management team (H). Injecting high quality human resources into the business facilitates early growth by contributing to other strategic resources, such as business models, strategy, and networks (S). Venture capital and private equity funding also contribute to strategic resources by bringing in clients/sales (S) directly, or through extended networks (S). Thus, the direct contributions of entrepreneurs/entrepreneurial teams are augmented by various self-reinforcing relationships among the first-order factors. This represents the early virtuous growth spiral.

*Further growth: self reinforcing endorsement loop around client/sales (S → S).*

In the next stage, the most visible virtuous growth spiral emerges from client/customer strategic resources (S). Obviously, acquiring clients and making sales (S) directly feeds into cash flow (F). But acquiring clients (S), in general, and winning high-profile clients in particular, also contributes to the firm's credibility and reputation (S). While credibility is often a threshold for more clients, reputation boosts incremental client acquisition through endorsement.

*That was a huge win for us because it was a big endorsement and something that*



*we could take out to the community and say, "The A Bank has picked us to be their manager." (Finance-2)*

Thus, the firm's credibility and reputation (S) facilitates further client acquisition (S). In some cases, existing clients (S) directly lead to new clients (S). These recurring interactions result in additional revenue, hence incremental cash flow (F). These feedback and feed-forward relationships constitute the backbone of the virtuous growth spiral shown in Figure 6-4(a).

This self-reinforcing loop is augmented by various factors, shown in Figure 6-4(b). The extended web of interactions reveals several virtuous sub-spirals involving the first-order factors. In some cases, repeated transactions with key clients develop into strategic partnerships (Network: S), which then link the firm into an extended network (S). Deep-pocketed conglomerates often buy into entrepreneurial firms by becoming investors (F), which improves the quality of human resources on the top management team and board of directors (H). These factors directly or indirectly feed back into the client/sales node through legitimacy (S) or business model/competitive advantage (S). And at the same time, these investments directly contribute to the firm's cash position (F).

The *a priori* conceptual model suggested that firms can use incremental cash (F) to hire additional senior managers and/or employees (H) or to develop physical resources, such as manufacturing facilities (P). A favorable cash position also enables firms to use various competitive tactics (S), such as mergers and acquisitions, which would have not been possible otherwise. All these factors help the firm exploit market opportunities and expand its client base (S). Thus, further growth is driven by the strategic-human-financial resources dimension (S-H-F).



*Growth boosters: strategic transition or resource injection.* Looking closely at growth patterns reveals that manipulating the different resource bundles will facilitate and reinforce the virtuous growth spirals discussed thus far. First, entrepreneurial firms can boost growth by changing their strategic resources (S). This usually involves qualitative changes to the business model, strategy, and/or target market, rather than quantitative changes. Second, entrepreneurial firms sometimes accelerate growth by strengthening their cash position (F). This requires major fund-raising from external sources, such as venture capital, private equity, public offerings, and/or debt financing. Third, entrepreneurial firms use excess liquidity to reinforce their human resources (H), usually by hiring senior managers or adding a significant number of employees.

These manipulations do not occur in isolation: injecting resources into one node of the system impacts all other components. For example, when the case firms hired senior executives, they did more than just add human resources. Finance-1 brought in someone who could boost strategic development (S); Finance-2 employed a deal-maker who could win key clients (S); Media-1 hired in an executive with corporate financial skills (F); and Manu-1 employed a manager who could lead, build, and develop a high performing team (H). At the same time, hiring a high profile senior executive has cost implications (F). In sum, deliberate changes in the S-H-F dimension feed into the overall resource system and, if successful, either trigger a virtuous growth spiral, or reinforce an existing one.

The discussion so far supports the thesis of *a priori* propositions 2 and 3, that the growth is a sequential and incremental process through which different resource bundles are interactively developed and deployed through various feedback/feed-forward

relationships. However, the data indicate that the typical growth mechanisms and drivers do not involve organizational resources, hence the revised propositions:

*Revised Proposition 2. The growth of the firm is a sequential and incremental process through which strategic, financial, human, and physical resource bundles are interactively developed and deployed (see Figure 3).*

And therefore:

*Revised Proposition 3. The growth of the firm depends on the interactions (i.e., feedback/feed-forward relationships) among strategic, financial, human, and physical resource bundles.*

In particular, the data suggest that firm growth is determined, and driven, by the interactions within the S-H-F dimension.

### 6.3.3. Growth setbacks and crises

At the time of this study, most of the case firms were enjoying upward growth momentum. Therefore, the sample is not ideal for investigating 'failed growth' or 'grow to fail' cases. However, the respondents did describe the growth pains, setbacks, and crises they had experienced, including bankruptcy protection. This section examines the causes and courses of these growth problems, and discusses the most salient patterns that emerged from the data.

*Problems with fast top-line growth (S).* Many interviewees pointed to the problems associated with growing too fast, in terms of sales (S). Abnormally exponential growth in one period creates high expectations, both inside and outside the organization. Investors do not think highly of any subsequent slow-down, especially venture capitalists and public shareholders. A falling stock price may decrease capitalization and jeopardize

the firm's financial management (-F). Some firms try to support fast growth with human resources, but this can be problematic. Injecting additional human resources is not always an option due to the lead time involved in hiring and training. On the other hand, not adding resources can wear out existing employees, eventually decreasing productivity (-H). Sometimes, great sales figures erode culture and test existing systems and infrastructure (-O).

*It certainly set an expectation that we're going to be exceptionally successful. I think most of us had an expectation as well, that this could not continue. 2005 was an unbelievable year, only to be eclipsed by 2006. And 2006 was a stressful year. People were on the road making presentations, so they were away a lot. People were having to get new accounts opened and an institutional pension plan in a different country, the Canada that's \$500 million, so this isn't an insignificant amount, require a lot of up front negotiation of contracts, setting up management agreements, transferring the money, getting sure everything on Day one is solid without some stupid hiccup that could cost your client \$500 million not invested for a day when the market goes up 2 percent – that's a lot of money on Day One that you just blew. So there's a whole lot of just "work" – and I'm sure that if you went to our finance and admin area, they'd say 2006 was massively stressful. The investment team, ditto. The marketing team, ditto. ... Tremendous growth like we had in 2005/2006 stresses every possible system that you have and tests every relationship that you have. And that is a direct barometer of culture. (Finance-2)*

These factors undermine financial, human, and organizational resources and feed back into the whole resource system, straining the virtuous growth spiral. Matters are even worse when a firm cannot fulfill the expectations of its clients. Disappointing clients can directly destroy the core mechanism ( $S \rightarrow S$ ) of the virtuous growth spiral and create chain reactions in each resource component connected to the core.

*No, we had a crisis in 2003, 2004, when we had major product issues of stability in the field. And we almost lost Toyota and Ford, those were our two anchor customers. It took a lot of heroics from a lot of people to work a lot of long hours to correct – a lot of fingers in the dam to keep this thing going until we could get the foundation fixed. That come from trying to grow faster than we should have. That came from trying to over-promise and couldn't deliver because of the resources. You make some of those decisions because – the choice of Toyota or Ford as a customers, “whatever you want, I'll give to you so I can get you as a customer” ... versus maybe losing the business because you couldn't make the commitments that they expected. So we over-promised. (IT-2)*

So, what makes entrepreneurial firms grow too fast? The qualitative data analysis revealed some common growth pressures.

*Growth pressure.* Growth pressure arises from several sources, including clients (S), human resources (H), and investors (F). First, several interviewees (e.g., IT-2, IT-3, and Finance-2) admitted that they had found it hard to say no to clients ( $S \rightarrow S$ ) in the early stages of the venture. Rather than risk losing a client, some entrepreneurs strained resources (H/F/O) by over-promising in terms of products and services. Others took on clients that were not directly related to the firm's business model, distracting them from

their core strategy and vision (S). Second, firms found that human resources (H) were another source of growth pressure (H→S); for example, IT-3, Trade-2, and Finance-2.

*...had the constant entrepreneur's worry about, "I now have 24 staff who are counting on the three of us to pay their salaries so that they can raise their children, etc." We found it increasingly difficult to turn business down, even if it was slightly different than the business that we were already doing. (Finance-2)*

*... this is the bad news. To do this part here we did 67 (employees) but we ramped expenses substantially. (Right) But sales didn't ramp so we ramped expenses based on the fact that we grew 100% and we actually only grew 20%, right. You know what I mean. So that was... so 2006 and now going into 2007 that's challenge right now. (Trade-2)*

Third, investors put a lot of pressure on the entrepreneurial firm (F→S). For one thing, negative growth is generally not acceptable if the firm is publicly listed.

*Publicly this company is expected to continuously grow. As a publicly listed company, a down year is a no-no. It sends everyone into a tizzy and a panic, even if you tell them there's no need to panic, that there's nothing wrong, it's just part of the standard regularity or ... so, I think the setback would have been the sales. (Manu-2)*

Other equity investors, such as venture capitalists (e.g., IT-1, IT-2) and private equity (Trade-2, Media-1), often have high expectations about investment returns, timelines, and growth. To meet these expectations, entrepreneurial firms sometimes jump into a market prematurely, or try to grow beyond their capabilities; for example, by untimely or ill-planned diversifications, geographic expansion, mergers, or acquisitions.

*The VCs put pressure on you... and you do unnatural things because of this desire to grow faster than you should. ... "At all costs, get revenue." If you're not ready with a product, you've still got to go get revenues so you sell stuff you don't have, and then you create a crisis because you can't deliver what you sold. We'd be at the same place today if we did it on a more controlled manner, and we'd probably be more set for the future if we did that, in my opinion. (IT-2)*

For the firms in our study, strategic, human, and financial growth pressures usually came in combination. Indeed, it seems to be the norm, rather than the exception, that entrepreneurial firms experience growth pressures along every aspect of the S-H-F dimension.

*Other causes of setbacks and crises.* The data indicated that all the growth-boosting factors discussed previously were also major sources of growth setbacks and crises. For instance, IT-2 found that changing its business model and strategy (S) did not work out as planned, stressing the whole resource system (e.g., IT-2). IT-1, Media-2, and Manu-2 ran into problems when they started to expand their operations. Hiring the wrong person into a leadership position (H) triggered vicious spirals for IT-1, IT-2, and Bio-1. And IT-1 and Eco-1 only added to their growth problems when they hired extra employees in the absence of a strong vision (S) to direct them. Finally, injecting financial resources often creates pressure for unnatural growth, as previously described. This problem is exacerbated when a company brings in too much money, without a disciplined plan to invest the funds or a strong vision to guide the process. (IT-1)

Some firms reported that their growth was hampered by external events, such as economic downturn or the events of September 11, 2001. Growth setbacks also arose



from problems with internal strategic resources (S), including unreliable suppliers (e.g., Trade-1) and distributors (e.g., Trade-3, Media-1), complicated stakeholder relationships (e.g., Bio-1, Finance-1), and product development delays (e.g., Bio-1). In terms of internal human resources (H), firms reported that their growth had been hampered by disagreements within the entrepreneurial team or top management team. Finally, poorly managed cash flows (e.g. IT-1) were a problem for internal financial resources (F).

*Preventive measures.* The qualitative data indicates that growth setbacks and crises originate from all aspects of the S-H-F dimension. Further, both the growth process, and deliberate attempts to accelerate growth by manipulating resources, can trigger and exacerbate vicious growth spirals. The question then becomes: how can entrepreneurial firms prevent these vicious growth spirals and grow sustainably?

Interviewees shared the lessons they had learned from their own growth crises and offered several suggestions for preventing these setbacks. These tactics included (but were not limited to): better cash flow projection (IT-1), maintaining economic grounding through venture capital funding and initial public offering (Manu-2), controlling the firm's direction by pacing equity dilution when raising funds (IT-1, IT-2, and Manu-2), adopting a portfolio approach to avoid depending on too few partners or being exposed to a single adoption rate (Trade-1, Manu-2), and sticking to the natural rate of growth determined by market dynamics (IT-2).

A striking pattern that emerges from the data is that most interviewees said that organizational resources (O) were the key to preventing crises. In this vein, interviewees recommended that firms create a strong organizational culture that will 'ground' the firm economically and facilitate internal communication. They also suggested that

entrepreneurs develop an organizational structure and delegate functional duties. Good communication is crucial for aligning employees with the company vision and motivating them to perform. Systems/infrastructures and routines/programs/processes are also critical for developing organizational culture, encouraging open communication, detecting problems, and making strategic decisions.

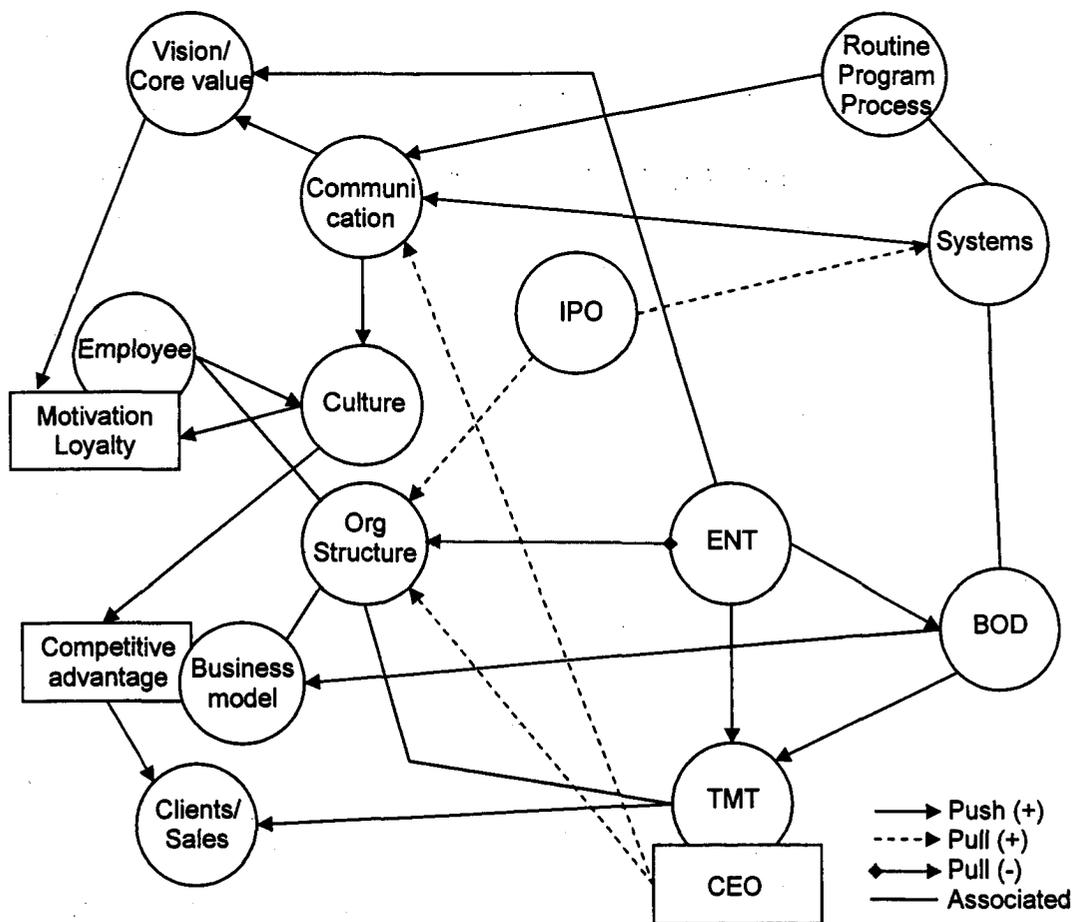
*Well first of all there's a real problem for entrepreneurs to release control and to share be it data control, delegate and authority whatever to let people run with it. Now there's two aspects to that. One is the psychological aspect and the second is the actual financial aspect of investing in that in time to make it worthwhile to the decision-making process. Usually they delay so long that even if intellectually they're willing to invest in it they waited so long to economically invest in it that it's probably too late. (Finance-1)*

*So you get to the point where you realize if you want to grow your business you can't do everything yourself. You can't run the financial side of the business. You can't run the operations side of the business. So for us to continue growing delegating... I think one of the keys is not to have too many people reporting to you because then you can't focus on the right areas. ... and having good systems... having good systems in your company, having the rhythm, great communication... (IT-1)*

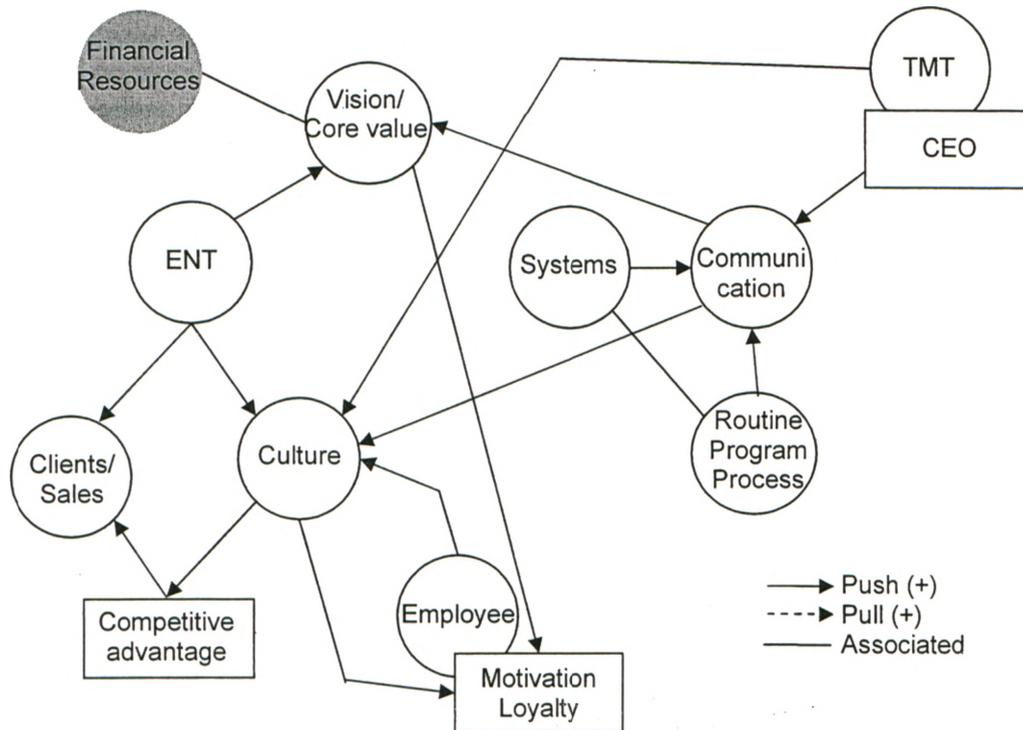
*I spend an awful lot of time on the organizational structure. One of the very important things to do – for any rapidly growing company – is to realize or recognize when you have to adjust the org. structure to deal with the new stage of growth development. (Media-1)*

It is interesting that interviewees believed that organizational resources (O) could help prevent growth setbacks, because they did not mention them in terms of virtuous growth spirals or growth boosters. An investigation into the complex web of relationships associated with organizational resources reveals a number of important findings. The relationships illustrated in Figure 6-5(a) show that organizational resources are directly related to various aspects of the S-H-F dimension, including business model and client/sales through competitive advantage (S), entrepreneurs/entrepreneurial team, top management team, board of directors (H), and initial public offering (F).

**FIGURE 6-5**  
**Relationships surrounding Organizational Resources**  
 (a) First-order relationships and inter-relationships



**FIGURE 6-5**  
**Relationships surrounding Organizational Resources (cont.)**  
 (b) Role of culture and vision



Similarly, Figure 6-5(b) shows that culture is associated with a self-reinforcing loop involving human resources. An organizational culture evolves from interactions among employees ( $H \rightarrow O$ ) and is reinforced by hiring and training; that is, through routines/programs/processes. In turn, a strong culture that is shared within the organization through communication and various routines or programs, increases employee motivation and loyalty ( $O \rightarrow H$ ). Well developed systems and routines/programs/processes facilitate communication. Meanwhile, this virtuous spiral is augmented by the company vision (S), through communication. Thus, we can infer that organizational resources feed into, and reinforce, virtuous growth spirals, based on the assumption that better motivated employees, guided by a well defined vision, will positively impact the growth in strategic resources.

On the other hand, the growth patterns that emerged from the data reveal that virtuous growth spirals do not typically include organizational resources (see Section 6.3.2). There is no “increase-push” link feeding into organizational resources, even though culture is associated with human resources and organizational structure is associated with the business model, top management team, and employees. This limits growth in organizational resources to three broad conditions. First, entrepreneurs/entrepreneurial teams must constantly attend to all the dimensions of organizational resources from day one. The more experienced entrepreneurs we interviewed tended to develop their cultures, organizational structures and systems, and routines/programs/processes early on (e.g., Finance-1, Media-1). The second condition revolves around leadership succession (e.g., IT-2, Manu-1). Finally, investors may mandate that the firm develop its organizational resources, especially if it is going through an IPO. All of these conditions are related to organizational resources through an “increase-pull” link, which means that growth in organizational resources happens only in the presence of deliberate attention from the top.

*Because they're not passionate about (culture and organizational systems). They're passionate about their product. They're passionate about some other aspect of the business. I've always believed that if you have the right people give me any product and I can be successful with it because people are what make it. It has to be that genuine interest in people. Having a culture that people want to work for and want to be a part of I think is one of the key drivers to success.*

*(Manu-1)*

#### 6.4. A Theory of Sustainable Growth of Entrepreneurial Firms

'Balance and fit' was the central tenet of the *a priori* theoretical model, based on the dynamic resource pyramid framework. In particular, the model suggested a configurational approach that incorporates constant, dynamic adjustments and balancing acts, rather than disruptive quantum changes within a holistic, yet confined, system of resources. I have identified the component and subcomponents of the resource system, using a grounded theory methodology (Strauss & Corbin, 1998). I have identified important patterns of virtuous growth spirals and growth setbacks by examining the qualitative data, both within-case and cross-case.

The data revealed that virtuous growth spirals involved self-reinforcing loops within the S-H-F dimension. These spirals were often facilitated and reinforced by manipulating resources in each dimension. This is in line with the contention that firms should deviate from the status quo in order to accumulate new assets and grow (Itami, 1987). Unfortunately, deviating from a balanced resource profile can upset the resource system, which may trigger vicious spirals and cause growth setbacks or crises. To prevent major crises, entrepreneurs should foresee and plan for the consequences of change, and manage the imbalance by making it temporal and marginal. In other words, entrepreneurs should maintain the *dynamic* balance and fit.

As one of the interviewees pointed out, "in a low-growth scenario, anybody can handle multiple functions." However, fast growth makes it very difficult to attend to all the components of the resource system. To sustain the virtuous growth spiral, entrepreneurial firms need to dynamically maintain the fit and balance within the S-H-F dimension of the resource pyramid model (See Figure 6-6(a)). If, at any point in time,

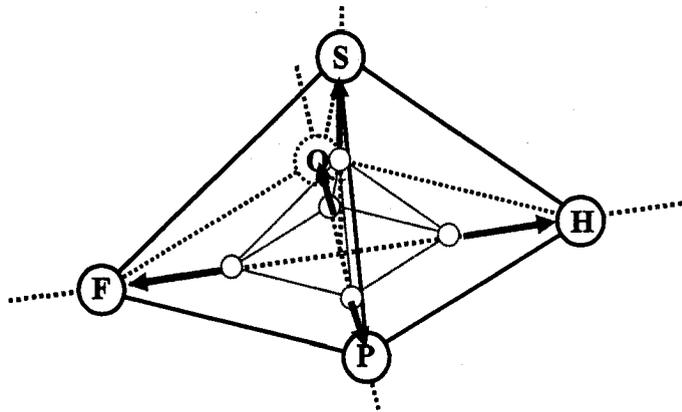
one or more of the forces significantly outgrows or undergrows the others, and if these unbalanced situations are not dynamically matched, the virtuous growth spiral breaks down. Consequently, further growth is hindered and the firm finds itself in the middle of crisis, which provokes a vicious spiral. This leads to a research proposition:

*Revised Proposition 4a. If, at any point in time, one or more vertices in the S-H-F dimension significantly outgrows other vertices, and if this condition is not addressed in a timely manner, growth pains are likely to arise and the growth is unlikely to be sustained (See Figure 6-6(b)).*

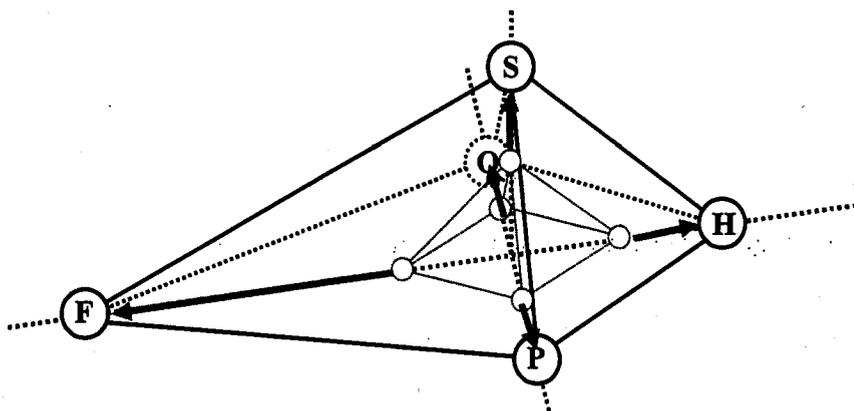
*Revised Proposition 4b. If, at any point in time, one or more vertices in the S-H-F dimension significantly undergrows other vertices, and if this condition is not addressed in a timely manner, growth pains are likely to arise and the growth is unlikely to be sustained (See Figure 6-6(c)).*

On the other hand, my findings indicate that organizational resources are not part of virtuous growth spirals, despite the critical role they play during firm growth. Entrepreneurs should pay constant and deliberate attention to their organizational resources to sustain virtuous growth spirals, to detect growth problems early on, and to prevent control vicious growth spirals.

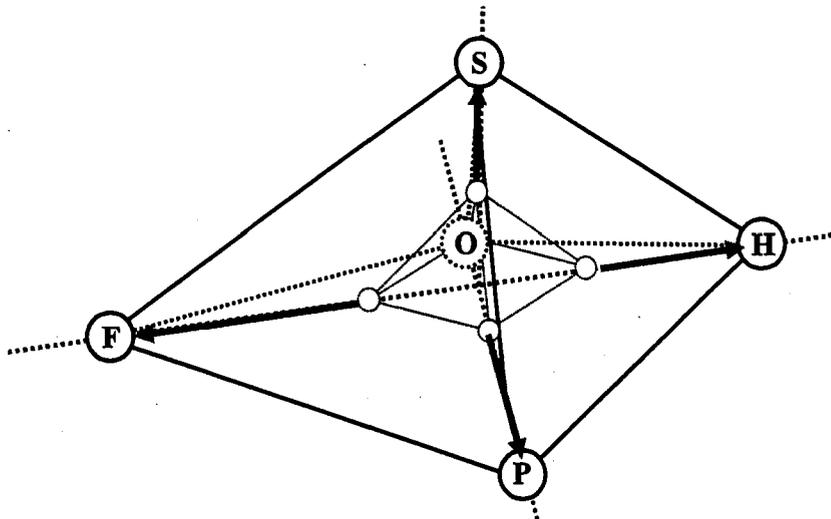
**FIGURE 6-6**  
**Balanced Growth and Unbalanced Growth (Modified)**  
 (a) Balanced growth



(b) Unbalanced growth – outgrowth



(c) Unbalanced growth – undergrowth





## CHAPTER 7: CONCLUSIONS

This chapter concludes the dissertation by discussing the findings, contributions, and implications of the research. Section 7.1 discusses the outcome of the study—a theory of sustainable entrepreneurial firm growth. Section 7.2 discusses the contributions and academic and managerial implications of this research.

### 7.1. Theoretical Attributes

My aim in this study was to develop a theory of the sustainable growth of entrepreneurial firms, and thereby lay solid foundations for the future research on this topic. The theory developed in this study includes a comprehensive, yet parsimonious set of constructs, that are systematically connected by statements of relationship, to form a theoretical framework that explains the relevant phenomena (Whetten, 1989; Strauss & Corbin, 1990: 22). The proposed theory makes several important theoretical contributions.

First, the proposed theory is holistic and it is as much theory-driven as data-grounded. The constructs are grounded and with some further refinement, they are measurable. As a result, the model provides a foundation for developing a set of falsifiable research hypotheses for future empirical tests. The model also takes into account the myriad of ongoing feedback/feed-forward relationships among multiple growth dimensions.

Second, the proposed theory accommodates, and has greater explanatory power than, existing growth models. For example, each stage in the stage models of growth (e.g., Greiner, 1972; Churchill & Lewis, 1983; Quinn & Cameron, 1983; Kazanjian, 1988; Kazanjian & Drazin, 1989; Garnsey, 1998; 2002) can be explained as sequential

growth along the four dimensions of the resource pyramid. The proposed theory also explains the causes of major growth crises (Greiner, 1972) and dominant growth problems (Kazanjian, 1988; Kazanjian & Drazin, 1989). Interestingly, the growth crises and problems discussed in the literature were explained by the proposed growth model as a lack of organizational resources, with only a few exceptions.<sup>20</sup> This confirms the important upholding role of organizational resources in the growth process, discussed in earlier. In short, this framework promises to provide a finer-grained process model than existing stage models of growth.

Third, the proposed theory is applicable to most entrepreneurial growth situations, including fast growth *and* slow growth firms. This is important because not every entrepreneur starts a business with the ambition of endless, exponential growth (Storey, 1994). The proposed theory is able to explain both organic growth and acquisition-based growth (Penrose, 1959). For example, acquisition-based growth can be illustrated by geometrically combining two (or more) resource pyramids, although post-acquisition integration can be another issue. Because it is firmly rooted in the Penrosean perspective, the proposed theory is also applicable to effectuation-based entrepreneurial processes as well as causation-based processes (Sarasvathy, 2001).

Additionally, the proposed theory does not refer to the current size of the firm nor the specific stage of its developmental process. It explains the virtuous growth spiral, the vicious growth reversal, and also the plateau. As such, the proposed theory is generalizable, for example to a theory of the survival of entrepreneurial ventures. If growth at any speed can be sustained over a period of time, the firm will survive. The

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<sup>20</sup> The exceptions are the dominant problems in the initial two steps of Kazanjian's (1988) model—resource acquisition and technology development, and production-related start-up.

theory may also be generalized beyond the boundary of entrepreneurship, and serve as a theory of the sustainable early growth of any firm.

Finally, the proposed theory has significant predictive power. With the proposed model, we will be able to predict the sustainability of growth by assessing a firm's previous developmental path and its current resource pyramid. When the resource pyramid is unbalanced, we will know that something is wrong and be able to decide what action needs to be taken. Thus, the proposed theory provides valuable normative implications for practicing entrepreneurs. Sometimes, entrepreneurship is defined as the process by which the entrepreneur pursues an opportunity regardless of the resources currently under control (Stevenson, 1984). In the context of the proposed theory, this can be misleading: entrepreneurs should constantly monitor all elements of their resource pyramid and coordinate these resources in a way that supports firm growth.

In sum, the proposed theory meets the evaluation criteria for organizational theories: falsifiability and utility (Bacharach, 1989). The proposed theory provides some simple, new, and powerful unifying ideas about relationships between constructs. It is independently testable, hence laying the foundation for significant contributions to the growth of scientific knowledge (Popper, 1979: 46-47).

## **7.2. Limitations and Future Research Directions**

As I set out at the beginning of this dissertation, my aim was to take an initial step toward a theory of the sustainable entrepreneurial growth. As such, this study is not without limitations. First, all the case firms were successful at the time of study even though some of them had previously experienced significant growth setbacks and crises. Second, the process analysis in this study relied upon retrospective accounts of

entrepreneurs, rather than real time longitudinal case studies. Third, the primary interview data was collected from a single source per each case although I made every effort to verify the information through triangulation with other sources including media coverage and company documents. Finally, constructs, i.e., the five vertices of the dynamic resource pyramid require further development. Although constructs and sub-constructs are grounded on the data, some of them (e.g., the vision, culture, routines/programs/processes, etc.) are still ambiguous and not easily measurable.

These limitations serve to provide suggestions for future studies. For further theory development, future research will need to include the firms that failed to grow, or that grew to fail, which will complement this study and yield more generalizable findings. Future research should also include multiple real time longitudinal case studies, including the follow-up of the case firms included in this study. My findings suggest that the developmental process of organizational resources and the role they play during firm growth and setback will be a particularly interesting and meaningful research topic in the next phase of theory development.

The next step will be to refine the constructs and develop robust measurement tools, which is crucial for future empirical studies. For the proposed theory to be a received theory of the sustainable growth of entrepreneurial ventures, it should undergo extensive empirical testing first through longitudinal case studies and then through a statistical analysis of a large number of entrepreneurial firms. Although the model is conceptually appealing and empirically testable upon the development of appropriate measures, it will be difficult to test using conventional tools available in the field of management considering the complex nature of its core concept: dynamic balance. To

this end, I believe that inter-disciplinary collaboration will be particularly instrumental in the future theory development.

### **7.3. Contributions**

In spite of several limitations, I believe that my dissertation makes meaningful contributions both to academics and practicing entrepreneurs. Academically, the proposed theory could be the foundation of a meaningful research program on the growth of entrepreneurial firms. The proposed theory needs to be extensively and empirically tested through a statistical analysis of a large number of firms, before it becomes a received theory of sustainable growth of entrepreneurial firms (Popper, 1979: 48). I hope that the propositions and measurement scheme proposed in this study will facilitate future theory development and empirical research on this topic.

This study also helps close the gap between strategy research and entrepreneurship research in general (cf. Hitt, Ireland, Camp, & Sexton, 2002), and between the mainstream resource-based view and entrepreneurship research (cf. Alvarez & Busenitz, 2001) in particular, by explaining how different resource bundles are created and integrated, and moreover, how they interact. The dynamic resource-based logic embedded in this theory also helps to address the criticism that the traditional approach to resource-based view research is static (e.g., McWilliams & Smart, 1995; Priem & Butler, 2001), and adds to the growing body of dynamic resource-based view research.

Finally, this study complements the extant literature on firm growth. It addresses the main gap in the literature by developing a process theory of entrepreneurial firm growth. In addition, this study helps resolve the problem of inconsistent growth measures by conceptualizing the growth process as interactions among various growth

dimensions. The finer-grained, empirically grounded process model of entrepreneurial growth also complements growth stages models by looking into the growth dynamics within each stage as well as in the transition between stages.

The proposed theory also has important managerial implications for practicing entrepreneurs, as discussed in Section 5.1. I believe that entrepreneurs will benefit from using the proposed dynamic resource pyramid as the cognitive foundation for developing their growth strategy. For example, the proposed dynamic resource pyramid model can be used as a monitoring device, like a dashboard or scoreboard; a simple way for entrepreneurs to evaluate the current status of each resource dimension and the balance among them. When they detect significant imbalance, they will be able to take appropriate actions in a timely manner. When entrepreneurs decide to pursue growth through mergers and acquisitions, they can evaluate the fit of target firms using the resource pyramid model—the ideal target should complement the focal firm's resource profile, hence reshaping the resource pyramid closer to the ideal profile. With further refinement, the resource pyramid model may also be used by venture capitalists and financiers to evaluate the growth potential and value of entrepreneurial firms, such that the volume of the resource pyramid represents the value of the focal firm.

The proposed theory of sustainable entrepreneurial firm growth suggests that entrepreneurs should pay constant attention to all elements of their resource pyramid and dynamically coordinate the balance and fit among these resources through different stages of firm growth. Sustainable firm growth can only be achieved when growth in every dimension is dynamically balanced and synchronized.

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## APPENDIX 2-1

### Literature Review

My initial search focused primarily on academic articles published in the major general management and entrepreneurship-oriented journals from 1995 to 2006. I did not include older works in my initial review, not because time necessarily invalidates their findings and arguments, but because (a) I assumed that more influential older works should have been reflected in recent articles and picked up in my investigation of key references, and (b) other scholars have already extensively reviewed the related literature (e.g., Delmar, 1997; Morse, 1998; Wiklund, 1998; Bhidé, 2000). I wanted to look at recent developments and trends, not thoroughly review the whole body of literature.

I first reviewed the table of contents and abstracts of high-impact, scholarly, peer reviewed journals. These included seven general management journals: *Academy of Management Review*, *Academy of Management Journal*, *Administrative Science Quarterly*, *Journal of Management*, *Journal of Management Studies*, *Organization Science*, and *Strategic Management Journal*; and two entrepreneurship journals: *Entrepreneurship Theory and Practice* and *Journal of Business Venturing*. I then expanded my review to include influential works from the previous period, based on a citation analysis of works located in the initial phase. In total, 98 articles were identified and reviewed in depth. The list of articles is shown in Appendix 2-2.

I categorized the literature based on the traditional antecedents-process-outcome (APO) model (See Appendix 2-3). I identified seven possible research domains within the literature on firm growth, based on the focal level of analysis. These are shown in Appendix 2-3. An extensive review of the literature revealed two broad streams of research on firm growth: (1) research on the factors (antecedents) influencing firm growth; and (2) life cycle/growth stages models. These streams are summarized in the following sections.

#### 1. Research on the factors influencing firm growth

##### 1.1. Individual-level factors

At the individual level, researchers have found that entrepreneurs' personological traits such as gender (Chaganti & Parasuraman, 1996), education and experience (Sapienza & Grimm, 1997; Lee & Tsang, 2001; Wiklund & Shepherd, 2003; Barringer, Jones, & Neubaum, 2005), and cognitive/psychological factors such as motivation (Baum, Locke, & Smith, 2001; Wiklund, Davidsson, & Delmar, 2003), growth aspiration (Wiklund & Shepherd, 2003), and locus of control (Boone, de Brabander, van Witteloostuijn, 1996; Lee & Tsang, 2001) are significantly related to firm growth. Entrepreneurs' opportunity costs, indicated by their current household income and supervisory experience, are associated with firm growth (Cassar, 2006) although their wealth attainment is not always the main source of growth motivation (Amit et al, 2001).

Other individual factors such as entrepreneurs' access to social and professional networks (Barringer, Jones, & Neubaum, 2005) and managerial competences (Baum, Locke, & Smith, 2001; Park & Bae, 2004) also influence entrepreneurial firm growth.

Researchers have also found that ambitious high-growth entrepreneurs are clearly differentiated from low-growth entrepreneurs in their strategic intentions, entrepreneurial intensity, willingness to occur opportunity costs, and use of wider financing sources (Rundry & Welsch, 2001).

### *1.2. Firm-level factors*

In line with the Penrosean (1959) perspective, researchers have found that firm-level resources such as human, physical, financial, organizational and social resources (e.g., Cooper, Gimeno-Gascon, & Woo, 1994; Greene & Brown, 1997; Bamford, Dean & McDougall, 2000; Bruton & Rubanik, 2002; Watson, Stewart, & BarNir, 2003; Wiklund & Shepherd, 2003; Mishina, Pollock, & Porac, 2004) greatly influence firm growth, while resource weaknesses and distinctive inadequacies limit firm growth (West & DeCastro, 2001). The founding team and/or top management team (TMT) is the integral component of an entrepreneurial firm's human resources, and various founding team characteristics (Eisenhardt & Schoonhoven, 1990) and TMT attributes such as industry and firm-specific experiences (Siegel, Siegel, & MacMillan, 1993; Kor, 2003; Park & Bae, 2004), and social network (Collins & Clark, 2003) are conducive to firm growth. TMT completeness (Bamford, Dean, & Douglas, 2004), cohesion and integration (Ensley, Pearson, & Amason, 2002; Reuber & Fischer, 2002) are critical in managing firm growth, and so are various human resource management practices such as emphasis on high skills, employee participation in decision making, incentives, interpersonal processes and matching of people to the organizational culture (Snell & Youndt, 1995; Heneman, Tnasky, & Camp, 2000; Batt, 2002; Collins & Clark, 2003; Watson, Stewart, & BarNir, 2003).

In terms of financial resources, researchers have found that venture capital financing (Davila, Foster, & Gupta, 2003; Chang, 2004) and private equity placements (Janney & Folta, 2003) are associated with high growth. Total cash flow is one of the most critical factors in entrepreneurial firm growth (Brush, Bromiley, & Hendriks, 2000), and in general, a greater level of financial resources are beneficial to firm growth (e.g., Cooper, Gimeno-Gascon, & Woo, 1994; Bamford, Dean, & McDougall, 2000).

At the firm level, various strategic factors such as the firm's competitive strategies (McDougall, Robinson, & DeNisi, 1992; Baum, Locke, & Smith, 2001), strategic breadth (McDougall et al, 1994), product breadth (Bamford, Dean, & Douglas, 2004), strategic orientation (Durand & Coeurderoy, 2001), managerial growth logics (Mishina, Pollock, & Porac, 2004), market pioneering and competitive tactics (Covin, Slevin, & Heeley, 2000), entrepreneurial orientation (Wiklund, 1998; Wiklund & Shepherd, 2003), entrepreneurial strategy making (Dess, Lumpkin, & Covin, 1997), strategy formation patterns (Slevin & Covin, 1997), and strategic decision making speed (Baum & Wally, 2003) influence firm growth. An entrepreneurial firm's technology strategy (Zahra & Bogner, 2000; Park & Bae, 2004), innovation and R&D (Barringer, Jones, & Neubaum, 2005; Thornhill, 2006) are also significantly related to firm growth. While the exploration of new technology generally promotes firm growth (Lee, Lee, & Lee, 2003), it is the ambidexterity, that is the balance between explorative and exploitative innovation strategies that warrants sustainable growth (He & Wong, 2004). In addition, geographic expansion (Barringer & Greening, 1998) and foreign sales

(Reuber & Fischer, 2002) are viable means for entrepreneurial firms to achieve firm growth.

Firms' access to external networks (Hansen 1995; Zhao & Aram, 1995; Lechner, Dowling, & Welpé, 2006) and interorganizational technology alliances in particular (Stuart, 2000) are also important factors that influence firm growth. In this vein, the focal firm's network-related capabilities (Lorenzoni & Lipparini, 1999; Walter, Auer, & Ritter, 2006) are critical. Network-based growth strategies building on personal trust and informal agreements among managers are particularly important in transition economies (Peng & Heath, 1996). Researchers have also found that guided preparation and outsider assistance in the growth stage are beneficial (Chrisman & McMullan, 2000; Chrisman, McMullan, & Hall, 2005).

Finally, firm-level attributes such as age (Durand & Coeurderoy, 2001), founder-manager status (Willard, Krueger, & Freeser, 1992), legitimacy (Zimmerman & Zeitz, 2002), firm-level competence and prior performance (Mullins, 1996) organizational design and vertical architecture (Jacobides & Billinger, 2006), commitment to growth and a growth-oriented mission (Barringer, Jones, & Neubaum, 2005), and organizational culture (Denison & Mishra, 1995) are significantly associated with firm growth. Hybrid organizational forms such as franchise allow firms to overcome managerial limits to firm growth and therefore grow faster in certain contexts (Shane, 1996).

### *1.3. Macro-level factors*

Although individual and firm-level factors are critical to firm growth, these factors alone are often not directly related to growth (e.g., Chandler & Hanks, 1994; Brush & Chaganti, 1999). Many researchers have found that macro-level factors such as market and industry life cycle stage and/or industry growth (Eisenhardt & Schoonhoven, 1990; McDougall, Robinson, & Denisi, 1992; McDougall et al, 1994; Brush & Chaganti, 1999; Robinson & McDougall, 2001), entry barriers (e.g., capital requirements: Robinson & McDougall, 2001), market conditions (Mullins, 1996), and environmental conditions such as munificence, dynamism, technological change (Kotha & Nair, 1995), and domestic market size (Park & Bae, 2004) have direct or indirect effects (e.g., Baum, Locke, & Smith, 2001) on firm growth.

For example, Dess, Lumpkin and Covin (1997) found that entrepreneurial strategy making is strongly associated with performance when it was combined with the appropriate strategy and environmental conditions. In dynamic external environments, relatively more CEO attention to the task sectors of the external environment and to innovation-related internal functions were associated with high growth, where as in stable environments, more scanning emphases on the general sectors in the external environment and efficiency-related internal functions produced higher sales growth (Dess, Lumpkin, & Covin, 1997). Planned strategies are positively related to growth among firms operating in hostile environments, while emergent strategies are more positively related to growth among firms operating in benign environments (Slevin & Covin, 1997).

Economic policy in the country level, for example, the use of loan guarantee program (Riding & Haines, 2001), and the more broader level, for example, European Bank for Reconstruction and Developments' policy to finance SMEs (Pissarides, 1999) also have important implications for firm growth.

## 2. Life-cycle/stage models of growth

One of the best known models is Greiner's (1972) five-stage model: growth through (1) creativity, (2) direction, (3) delegation, (4) coordination and (5) collaboration. Greiner (1972) explained the growth of organization as a series of evolutions and revolutions precipitated by various crises. Integrating nine growth stages models including those of Greiner (1972) and Adizes (1979), Quinn and Cameron (1983) proposed a four-stage model: (1) entrepreneurial stage, (2) collectivity stage, (3) formalization and control stage, (4) elaboration of structure stage.

More directly applicable to small entrepreneurial firms are the models developed by Churchill and Lewis (1983) and Kazanjian (1988). Churchill and Lewis (1983) model identifies the company as passing through a series of problems that comprise from those of getting customers and ensuring the delivery of the product in the early stage, through cash crisis as the company grows, to problems of consolidation as the company matures. This model takes into account not only adjustments for increasing complexity of operations along the firm growth, but also strategic changes that allow companies to loop back through the stages. Churchill and Lewis's (1983) model identifies five growth stages: (1) existence, (2) survival, (3) success, (4) take-off, and (5) resource maturity.

Similarly, Kazanjian (1988) argued that if the firm is successful and moves into a period of high growth, the major problem the management faces is to organize the firm in such a way as to be able to sell, produce, and distribute its products in volume, especially at a profit. It is at this stage that building an efficient and effective organization takes on increased importance. This model identifies four stages of growth: (1) conception and development, (2) commercialization, (3) growth, and (4) stability. More recently, Hanks et al (1993) proposed that each life-cycle stage consists of a unique configuration of variables to organizational context and structure, and based on the cluster analysis of 126 high-tech firms, derived a configuration-based model of four growth stages.

## APPENDIX 2-2

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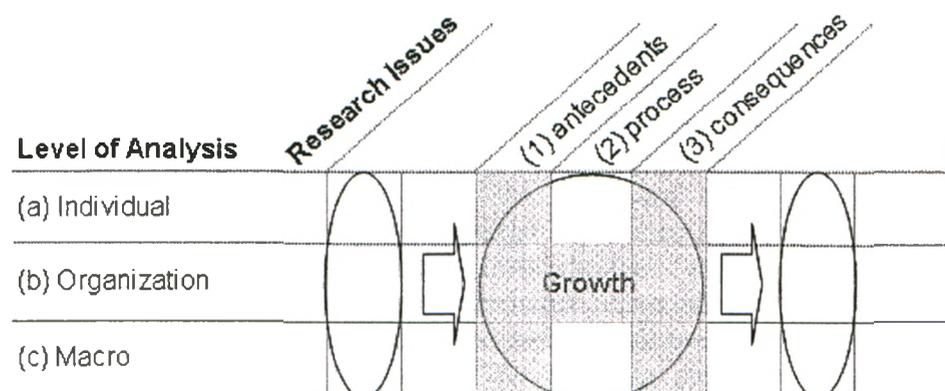
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## APPENDIX 2-3 Literature Review Framework



### Antecedents of Firm Growth (Growth as a dependent variable)

- 1-a. What are the individual-level factors that influence firm growth?
- 1-b. What are the organization-level factors that influence firm growth?
- 1-c. What are the macro-level factors that influence firm growth?

### Growth Process

- 2-a. Individual-level growth process (e.g., individual learning, career progress)\*
- 2-b. Organization-level growth process (i.e., firm growth)
- 2-c. Macro-level growth process (e.g., growth of the industry cluster)\*

### Consequences of Firm Growth (Growth as an independent variable)

- 3-a. What are the consequences of firm growth at the individual level?
- 3-b. What are the consequences of firm growth at the organization level?
- 3-c. What are the consequences of firm growth at the macro level?

\* While important, these topics are not within the domain of this study. In terms of growth process, our focus is on the firm level growth.

### APPENDIX 3-1 NeoG – Case Synopsis

In February 2000, John Kim, an IBM e-business specialist, founded NeoG Co., Ltd. in Seoul, Korea, with two of his IBM colleagues and three young programmers he worked closely with in consulting projects. In many ways, he thought it was an ideal combination of people both for investors and potential clients in terms of e-business. Kim had more than 10 years experience in management consulting and IT solution consulting with KPMG and IBM Korea. His two colleagues had experience in IT project management and systems sales, respectively, with IBM Korea and other growing small Internet ventures. All of the partners had substantial experience in managing blue-chip clients such as Samsung Electronics and Hyundai Motors, and had established excellent networks to reach prospective clients. Meanwhile, three other co-founders, all young and energetic, had outstanding educational and professional backgrounds in computer science and e-business systems development. The founding partners bootstrapped the seed funding (100 Million KRW: 1 USD = 1300 KRW) mainly through their retirement benefits. By August 2000, NeoG had secured a 550 Million KRW investment from business angels and several institutional investors, most of whom were acquaintances. The founding partners collectively held 80% of the shares, and had delegated part of their voting rights to John Kim, which gave him a total of 35% of voting rights.

The main driver of the company's incorporation was a team of people with experience, (technical) skills, and human networks, rather than the particular business opportunity or innovative idea that the founders have developed. While developing and patenting some software programs such as search engines, the team spent several months searching for the firm's main business direction. Over time, it became obvious that the company's core competence was its e-business related skills.

#### Early Development

It was late July 2000 when the management of NeoG decided to pursue opportunities in the fast-growing B2B e-business market, after a series of strategy workshops where they discussed market trends, opportunities, and the firm's strengths and weaknesses. Although the B2B e-business area was not completely immune from the global economic downturn triggered by the dot.com crisis, many market researchers believed that the B2B area would still take off. "If there is any future, it is in the B2B," said one industry analyst. NeoG's management expected packaged B2B solutions would lead overall B2B e-business market growth.

NeoG decided to develop its own flagship B2B e-business software package, *NeoSite for B2B*, which would provide similar features to those of *Ariba's ORMS (Operating Resource Management System – now called Value Chain Management: VCM)*. *NeoSite* was to be launched in late 2000. With *NeoSite for B2B* as its core business driver, the company would provide B2B e-business consulting, solutions development, sales and implementation services.

NeoG business strategies were aligned to its foremost priority: to achieve strategic position in an embryonic market. NeoG management declared the year 2000 to be the



“year of investment,” during which the company would establish a software package line-up, sales channels and alliances with major companies. They set the first year sales target of 1-billion KRW and planned to recruit 20 employees as a foundation for future growth.

NeoG initially focused on MRO (maintenance, repair, and operation) procurement projects in the textile/fashion industry, introducing e-procurement systems and e-marketplace through an alliance with Fanco, one of its investors. In addition to direct sales, NeoG planned to exploit market opportunities through various levels of business partners including management consultancies and systems integrators. Management was particularly keen about consultancy partners in expectation that they would provide valuable input for the process design of its software package as well as various co-marketing opportunities. One of the consultancies involved in serious discussions with NeoG was iMRO, a B2B e-business consultancy founded by former A.T. Kearney consultants with MBA degrees from MIT and Kellogg. They were thought to have an extensive network that would reach major *Chaebols*.

The NeoG management team believed that *NeoSite for B2B* had various competitive advantages over solutions from both global and local competitors. They claimed that *NeoSite for B2B* reflected characteristics of the “real-world” Korean procurement process. Relatively lower implementation costs and better technical support and maintenance (cheaper and faster since it was provided by local technical staffs) would be additional advantages. At the same time, NeoG tried to differentiate itself from other local solution vendors, highlighting its superior technology and its pure B2B focus. There was no dominant player in the Korean B2B market as of early 2000.

### Progress to June 2001

NeoG deployed a rather flat and flexible organization structure to maximize operational efficiency and personal motivation. Instead of using formal, functional titles, the partners called each other by their first names, which was a significant departure from the seniority-based Korean tradition. Founders expected that this less formal environment would encourage partners and employees to take more responsibility and a sense of ownership in the company.

During the first six months, NeoG developed various partnerships with major IT solution vendors, including IBM, Oracle and Sun Microsystems. In addition to recruiting seven more employees (five programmers, one web designer and one administrative staff) by the end of 2000, NeoG acquired its alliance partner Neo Solution, another small IT start-up. NeoG then established a wholly owned affiliate NeoMobile Co., Ltd around former key members of Neo Solution. This acquisition not only provided NeoG with four more highly skilled programmers and some marketable solution suites such as *QMS (Questionnaire Management System)*, but also helped to resolve “technical problems” in dealing with IBM Korea.<sup>21</sup>

<sup>21</sup> NeoG could not “officially” be engaged in IBM projects, because of IBM’s internal policy. Companies owned by former IBMers could not work as a sub-contractor of IBM

In November 2000, NeoG launched its flagship B2B software package *NeoSite for B2B*. The launching ceremony was hosted by IBM Korea and opened with a keynote speech presented by an iMRO senior manager. NeoG planned to sell *NeoSite for B2B* through SI (Systems Integration) projects, where they would customize solutions for clients' business process requirements. This approach seemed particularly appropriate since the solution was far from complete (the development team leader thought the package was 20% complete, with only basic system architecture and design). This approach also had some tactical benefits as well: these customization projects would provide them with test beds where they could learn customers' requirements and apply them to the package.

In January 2001, NeoG established a strategic alliance with Samsung Corporation for the development of electronic marketplaces, and won an e-marketplace implementation project from UniBid, a B2B e-business initiative in the medical industry. At the same time, NeoG also won six SI projects valued at a total of 500 million KRW. The client list included MetLife (an insurance company), LG-Caltex (an oil refinery company), and Hyundai Motors. Most of these SI projects were won through the firm's strong connections with IBM Korea.

NeoG also tightened its partnership with IBM Korea, participating in various sales programs. One of them was the IBM KeCOS offering, where NeoG was selected as one of three B2B solution providers in June 2001. Depending on the level of technical support and customization, NeoG would get 80M-100M KRW for the software package and an additional customization fee per project.

### **Growth Options**

By June 2001, NeoG added more than 30 employees, mostly programmers and systems engineers, into its payroll. During the first half of 2001, NeoG received three significant business offers. These offers provided distinctive growth options.

The first offer was from IB-Net, one of the competitors. IB-Net had a well-recognized brand based on its success in the B2C area, but did not have its own B2B solution. In March 2001, IB-Net approached NeoG management with an offer to buy the solution through an exclusive OEM agreement. If NeoG accepted the offer, they would be providing *NeoSite for B2B* software package and related technical support solely to IB-Net. In return, NeoG would receive a royalty of 50M for the software package plus license fee depending on the size of the project.

The second option was a merger offer from iMRO, NeoG's consultancy partner. In April 2001, iMRO management approached John Kim and asked if NeoG would be interested in further discussions on a merger between two companies. iMRO was experiencing fast growth, securing VC investments and winning a number of consulting projects from high-profile clients such as Hyundai Motors and Hansol Group (a paper conglomerate). The merger would complement several of NeoG's critical weaknesses: knowledge of the procurement processes in various industries and general management skills.

The third option came from Sodano Capital, a US venture capital management firm. In May 2001, Sodano Capital proposed a 3 billion KRW investment offer through Meritz Securities, NeoG's corporate finance advisor. This was the first and much awaited outcome

of the second round fund raising efforts initiated in August 2000. Sodano Capital requested 15% of NeoG equity (common stock) in return for their cash investment, which valued the company at 17 billion KRW. This was a fairly good deal considering that average investors were not willing to pay more than 5 times of the par value of shares. While the deal would leave the management with control and freedom, the deal would not bring additional competences other than money that would complement the company's weaknesses, for example, professional managers or managerial advice.

Offers from IB-Net and Sodano Capital were valid until the end of June 2001. Although iMRO did not set a definite deadline for the acquisition talk, iMRO management wanted to sign the MOU by early July, to show some progress to their board of directors.

### **Initiation of the vicious Growth Spiral – June 2001**

The three growth options created serious debates about the future of NeoG. In the end, the management could not reach an agreement among themselves, and decided not to take any deal for the time being. NeoG management rejected the IB-Net deal because they did not like the OEM arrangement. They wanted to establish company's own brand, but also, they worried that the product development was not being completed as planned. NeoG also turned down the merger/acquisition offer from iMRO, as they wanted to remain as an independent entity. Finally, NeoG closed the discussion with Sodano. The management was not completely confident about the outcome of due diligence. They also did not like the fact that they have to pay 10% commission right away from the investment.

Consequently, a lot of anxiety began to build up within the company. Although operational data indicated that the company was up and running, the NeoG management team felt that its growth was not on track with regard to their original plan. Adding to this, by June 2001, the management was beginning to be concerned about the company's cash flow. At the current rate, most of the seed funding would be burnt by the end of the year. Some even began to question the company's optimistic outlook.

In a strategy workshop in early June, one of the founding partners pointed out problems with the company's ability to execute its business strategy:

"As you know, B2B e-business can be classified as a 'solution of scale.' The question is, whether this market is really accessible for the small companies like us. It is always the case that we are so much close to, but only close to winning contracts. For instance, LG Electronics selected a package from a global vendor over *NeoSite for B2B* in its back-end application integration project. They do not see us as a 'proven' solution provider."

Another partner recognized problems in the strategy:

"Our current business portfolio is a bit too dispersed. We need some focus, that is, we have to develop the very business portfolio that could utilize NeoG's competitive advantage."

One senior manager pointed out the dominance of opportunity-driven, emergent strategies:

“Since we could not make any money from our B2B solution business, we had no option but to pursue alternative opportunities available. And they were always SI projects won through connection with IBM Korea. I do hope that know-how from these projects will be helpful in the long term. But we should not forget that we founded NeoG to escape from the life of SI projects.”

Although SI projects generated cash flows, SI was regarded as a low margin business (typical profit margin was 20%). Moreover, senior managers questioned whether they necessarily supported its core B2B business:

“Up to now, our SI clients have not been exactly our ultimate target clients in the B2B market. Further, several core programmers were frequently dispatched to SI projects, which significantly delayed the development of its flagship B2B software package.”

Above all, key employees unanimously blamed the depressed market. However, at the same time, they also acknowledged that a new leader had emerged in the B2B e-business solutions market meaning that somebody could win the B2B game, which NeoG failed to win so far. While once-glamorous B2B e-business companies such as eGEN and DNB receded from public recognition, ICOMPIA, founded by industry procurement specialists from Samsung Electronics and Daewoo Motors, rose into prominence, having won various e-procurement projects from such clients as Korea Telecom, FaCos (textile e-marketplace), and Hyundai Motors Company (HMC).

HMC was a particularly bitter defeat for NeoG. In partnership with Web Method (an EAI company), NeoG had been involved in the HMC procurement system project, i.e., migration to the web-based system from the host-based procurement system. iMRO, its consultancy partner was the major advisor for the whole project, giving NeoG preferential access to all the consulting outcomes from the projects. After an exhaustive bidding process, however, HMC selected ICOMPIA as a procurement solution provider. Although ICOMPIA, too, was not believed to be generating profits, its specialty in the procurement process gave it a clear competitive advantage.

To tackle its organizational, structural and strategic problems, NeoG's management decided to restructure its whole business process. Management announced a reorganization of the company structure into a more task-oriented, team-based operation.

### **Entering the Plateau**

The outcome was worse than they expected. The COO decided to leave the company in mid June after a conflict with the CTO over the company's business strategies. The CTO also left NeoG in early July, although it was somehow accidental. It turned out that he had signed the contract with Sun Microsystems in mid June as the COO had shown no intention to leave. He later said that one of them had to leave. The CTO returned to NeoG one year later. In the midst of this turmoil, several programmers left the company.

For the next two years, NeoG remained as an independent company, mainly doing SI projects as a sub-contractor of IBM Korea. However, the company did not show any sign of taking off. By September 2003, most of its co-founders left the company without

harvest: some returned to IBM Korea, some founded other start-ups, and some returned to school for further education.

In September 2005, NeoG still existed. However, only the CEO stayed with the company, and few significant business transactions was reported.

#### NeoG – List of Early Events

- 2000.2 NeoG incorporated and capitalized at 100 million KRW (February 21, 2000)
  - 4 Membership registered for IBM PartnerWorld for Developers
  - 5 Membership registered for Oracle Internet Venture Community  
5 S/W programs including Search Engine, DB Broker copyrighted by KIPA (Korea IT Industry Promotion Agency, formerly known as KOMS)
  - 6 Partnership signed with Neo Solution Co.  
Membership registered for SUN Developer Connection Program
  - 7 Neo TopMail V 1.0, JAVA based Web-mail solution launched  
E-business consulting service for SK Corp. (B2B e-Seller model)
  - 8 Capital increased to 550 million KRW  
Membership registered for IBM NETGEN program (IBM Korea)
  - 11 Hosted a launch ceremony for *NeoSite for B2B* (Supported by IBM Korea)
  - 12 Capital increased to 687.5 million KRW  
Won R&D Funds from the Ministry of Information & Communication
- 2001.1 Strategic alliance signed with Samsung Corporation for development of electronic marketplaces  
Won an e-marketplace implementation project in medical industry (UniBid)
  - 2 Acquired Neo Solution, Co. and formed an affiliate, NeoMobile Co., Ltd.
  - 3 Published a book "B2B e-Marketplace Implementation Strategies Based on IBM MPE (MarketPlace Edition)"
  - 4 Partnership signed with WebMethod for EAI technology
  - 5 Selected a B2B solution provider for IBM EcoNet program  
Won an e-procurement system project (EAI component) from Hyundai Motors Company
  - 6 Selected a B2B solution provider for IBM KeCOS offering

**APPENDIX 4-1**  
**The Case Study Protocol\***

- A. Introduction to the case study and purpose of protocol**
- A1. Overview of the study**
- Appendix 4-2 and Appendix 4-4
- A2. Study questions and propositions**
- Section 1.4 and Section 3.6
- A3. Theoretical framework for the case study**
- Chapter 3
- A4. Role of protocol guiding the case study investigator**
- This protocol is a standardized agenda for the investigator's line of inquiry and will be used in training workshops prior to the data collection
- B. Data collection procedures**
- B1. Names of sites to be visited, including contact persons**
- *Quantum Shift* sample (Section 4.2.1): to be determined
- B2. Data collection plan**
- Figure 4-1
  - Supporting devices: digital record device, laptop computer
- B3. Expected preparation prior to site visits**
- Review the screening survey data
  - Review the archival record on the firm, e.g., media coverage
- C. Outline of case study report**
- C1. Salient resources in early stages of firm growth**
- C2. Major growth milestones and resource dynamics (Table 4-2)**
- C3. Attachments: chronology, flowchart, reference to relevant documents, and list of persons interviewed**
- D. Case study questions**
- D1. Salient resources in early stages of firm growth and major growth milestones**
- Appendix 4-5
- D2. Evaluation**
- According to entrepreneurs' cognitive schema, what are the most salience resources in early stages of firm growth?
  - How do entrepreneurs categorize these resources?
  - Are there commonalities/differences in salient resources identified by different entrepreneurs?
  - How do these resources interact through evolving growth milestones?

\* Developed based on the guideline provided by Yin (2003: 68)

**APPENDIX 4-2**  
**A Letter of Introduction – Screening Survey**

Dear \_\_\_\_\_,

I am writing you to ask for your help with the “Ivey Study of Entrepreneurial Growth,” a study coordinated by the Institute for Entrepreneurship at the Richard Ivey School of Business. This study is being conducted by a group of researchers at the Richard Ivey Business School to investigate the roles of growth strategies, management styles, ownership structures, or external relationships during the growth process.

You have been selected for this study because you have participated in the Ivey Quantum Shift program, or are otherwise known to be a manager of a high-growth entrepreneurial venture. In a web-based online questionnaire, we are asking for information about the way your firm is organised and managed, and its current performance. It should take approximately 30 minutes to complete.

Please note that your response will be completely confidential and information will only be published or released in summaries from which neither individuals nor firms can be identified. No material will be connected to you personally, and responses will be linked to firms only to allow averages to be calculated. Your participation is entirely voluntary, and you may choose not to answer any or all the questions or withdraw from the study at any time with no effect on your status.

If you have any questions about the conduct of this study or your rights as a research participant, you may contact the Office of Research Ethics, the University of Western Ontario (519-661-3036 or email at: [ethics@uwo.ca](mailto:ethics@uwo.ca)). Signing the consent form indicates your consent to participate in the study. Should you have any questions or concerns please contact me by phone or via email.

You will not benefit directly from participation in this research. However, we expect that results from this study will help us to identify the match between management styles, organisational factors, ownership factors, and growth strategies that will in turn help entrepreneurial ventures to diagnose problems and organise to improve their performance. If you wish to have an executive summary of the research findings and future publications that arise from the research, we will be pleased to send copies.

If you kindly agree to participate, we will send you the unique identification number and password to access our online survey. We look forward to hearing from you, and wish to thank you again for your time and participation.

Sincerely,

**APPENDIX 4-3**  
**Screening Survey Questionnaire**  
*(Selected questions)*

**Please answer the following questions about your business:**

16. In what year was your business founded?

17. Was your firm established as a result of:

Please select all that apply:

- Actual or expected unemployment of its founder(s)?
- The desire of its founder(s) to run his, or her own business?
- The desire to implement a new idea/invention/concept?
- Spin-off from a University research project?
- The wealth ambitions of its founder(s)?

18. What is the main industry in which your company operates?

Select

20. What is your company's annual growth rate since founding (or, since you joined the company)?

- Less than 10%    
  10 - 25%    
  25 - 50%    
  Greater than 50%

21. How would you describe the growth trajectory of your company since founding (or, since you joined the company)?

Please select a statement that most closely describe your company's growth.

- Steady and smooth
- Ups and downs (bumpy)
- Mix of both (some steady & smooth periods and some bumpy periods)

22. How would you describe the growth principle of your company since founding (or, since you joined the company)?

Please select a statement that most closely describe your company's growth.

- Pursued growth even if that was not the most profitable choice
- Maintained the profit level even if that slowed down the growth



**APPENDIX 4-3 (continued)**

23. Has your company experienced any significant growth pains (problems) or crises since founding (or, since you joined the company)?

Please check all that apply to your company's growth.

- Inability of the CEO to change his/her role
- Jobs outgrow the people
- Communication difficulties as the number of intra-company relationships increase
- Inability to maintain the "team spirit"
- Breakdown of decision making as demand increases
- Role confusion among top management
- Resource shortages leading to stress and burnout
- Key people leaving
- Interdepartmental conflict
- Focus on short-term operational problems
- Low morale
- Declining productivity
- Poor performance

**Please provide the following financial information for most recent full business year, and the prior three years:**

62. What is your most recent full business year?

63. On which month does your business year end?

64. For the latest financial years for which you have data available, please specify:

	Most Recent Year	Prior Year	2 Years Prior	3 Years Prior
Revenue (\$000s)				
Exports (\$000s)				
EBITDA (earnings before interest, taxes, depreciation and amortization) (\$000s)				
Total Assets (\$000s)				
Average number of employees (full-time equivalents including part-timers and working directors)				
Number of sites (including your main office)				

**APPENDIX 4-4**  
**A Letter of Introduction – Interviews**

Dear \_\_\_\_\_,

I hope this message finds you very well. First of all, thank you so much for responding to our recent survey request. Your help has been instrumental in advancing our knowledge of various managerial issues of entrepreneurial ventures.

At this time, I am writing you to ask for more of your help with our study by participating in an interview. Upon your consent, a group of researchers from the Richard Ivey School of Business, including me, will visit you and interview you at your convenience. The interview will take about three hours. Results from these interviews will help us to understand the growth process of entrepreneurial ventures, which will help entrepreneurial ventures to diagnose problems and organise to improve their performance.

Once again, please be assured that your response will be completely confidential and information will only be published or released in summaries from which neither individuals nor firms can be identified. No material will be connected to you personally, and responses will be made public only behind a shield of anonymity. Your participation is entirely voluntary, and you may choose not to answer any or all the questions or withdraw from the study at any time with no effect on your status.

If you have any questions about the conduct of this study or your rights as a research participant, you may contact the Office of Research Ethics, the University of Western Ontario (519-661-3036 or email at: [ethics@uwo.ca](mailto:ethics@uwo.ca)). Signing the consent form indicates your consent to participate in the study. Should you have any questions or concerns please contact me by phone or via email.

If you kindly agree to participate, I will contact you shortly and arrange the visit at your convenience. I look forward to hearing from you, and wish to thank you again for your time and participation.

Sincerely,

**APPENDIX 4-5**  
**Interview Guide**

**A. Opportunity Identification and Founding**

1. Could you please describe how you came to start this business, beginning from how you arrived at the initial idea, what you were doing at the time, what factors you considered when deciding whether or not to start the business and what you did to pursue the business?
2. Could you please describe the founding process?  
How did you mobilize or acquire financial resources?  
How did you organize the management team? How did you recruit first employees?  
What other resources were involved in the founding process?

**B. Growth**

1. Could you please describe your company's current growth?  
*(Examples: fast growth / slow growth / stalled / negative growth / growth pains)*  
When you talk about growth, what are you referring to? What kind of indices do you use to benchmark and monitor your firm's growth?  
*(Examples: sales / number of employees / asset / profit / market share)*
2. Could you please describe your company's growth so far?  
2.1. Please illustrate your firm's growth in the chart below, from the beginning to present



*(Examples of growth chart will be provided)*

When you drew this chart, which growth measure did you have in your mind?  
*(Examples: sales / number of employees / assets / profit / market share)*

Could you please explain your firm's growth process so far in detail? Please tell us about major growth milestones, crisis and setbacks, pains and problems, for example.

## APPENDIX 4-5 (continued)

3. Questions related to most salient factors for early firm growth
  - 3.1. What are the key determinants of, and requirements for, the firm growth?
  - 3.2. What caused growth setbacks, crisis, and pains?
  - 3.3. How can a firm avoid growth setbacks, crisis, and pains, and sustain its growth over time?
4. Some say that managing an entrepreneurial venture and its growth is like juggling with multiple balls. Now imagine yourself as a juggler who is juggling for the survival and growth of your own company. How many balls do you think you have to take care of? What are they? (*Respondents are encouraged to use broad categorization*)
5. Has your conception of what the business is changed over time (e.g., who it serves, what it produces, its mission, its strategy)? How would you describe it at the beginning, now and discuss what lead to the change?
6. What emotions have been associated with this business for you, from start up until now?
7. What is your growth objectives in 3, 5, 10 years?  
(*Examples: become smaller, stay same size, grow moderately, grow substantially*)

**APPENDIX 4-6**  
**Ethics Approval Notices**

# IVEY

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## Use of Human Subjects – Ethics Approval Notice

Principal Investigator: Eric Morse	Review Number: 025/06 BREB
Protocol Title: Ivey Study of Entrepreneurial Growth	
Approval Date: August 30, 2006	End Date: August 30, 2007

This is to notify you that the Ivey School of Business Expedited Research Ethics Board (BREB) has granted expedited approval to the above named research study on the date noted above.

The BREB is a sub-REB of the University of Western Ontario's Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB), which is organized and operates according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario.

This approval shall remain valid until the end date noted above assuming timely and acceptable responses to the BREB's periodic requests for surveillance and monitoring information.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the BREB except when the change(s) involve only logistical or administrative aspects of the study. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the BREB:

- a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) all adverse and unexpected experiences or events that are both serious and unexpected;
- c) new information that may adversely effect the safety of the subjects or the conduct of the study.

If these changes require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information must be submitted to this office for approval.

Members of the BREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to such studies when they are presented to the BREB.

Signature: 

Craig Dunbar, Associate Dean, Faculty Relations & Research  
Chair, Business Expedited Research Ethics Board (BREB)

*This is an official document. Please retain the original in your files.*

**APPENDIX 4-6**  
**Ethics Approval Notices (cont.)**



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**Use of Human Subjects – Ethics Approval Notice**

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Principal Investigator: Eric Morse	Review Number: 020/07(BREB)
Re: PhD student Sun Kyu Lim	
Protocol Title: Dynamic Resource-Based View of Entrepreneurial Firm Growth	
Approval Date: June 11, 2007	End Date: June 11, 2008

---

This is to notify you that the Ivey School of Business Expedited Research Ethics Board (BREB) has granted expedited approval to the above named research study on the date noted above.

The BREB is a sub-REB of the University of Western Ontario's Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB), which is organized and operates according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario.

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Signature: \_\_\_\_\_

Craig Dunbar, Associate Dean, Faculty Relations & Research  
Chair, Business Expedited Research Ethics Board (BREB)

*This is an official document. Please retain the original in your files.*