

THE QUEST FOR CORPORATE GROWTH

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Submitted to the Alfred P. Sloan School of Management  
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## ABSTRACT

A study of the topic of growth was conducted using a new framework (maps of growth) that combines causal loop analysis with the performance measuring system proposed by Kaplan and Norton. We identified sixteen general maps of growth that can be used to understand growth processes in corporations. We studied five fast growing companies using the maps of growth framework.

To achieve long-term growth, we propose that companies should concentrate in three processes: building unique competencies, understanding the dynamics of the environment, and maximizing the use of unique competencies. Currently, companies engage in a static measurement of growth goals. Top management seldom looks at soft variables or at the cause and effect relationships of business variables. We believe the maps of growth framework is an useful tool for dynamic management.

One of the limits of growth is the available time that top managers have to analyze growth strategies. To overcome this limit, companies must decentralize the decision making process and empower lower levels of the organization to broaden the decision-maker base.

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Gabriel Obrador

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Edmundo Ruiz

# CHAPTER 1

## INTRODUCTION

---

### A. OVERVIEW

The evolution of strategic management has been defined by several dominant themes: budgetary planning and control in the 1950s; corporate planning in the 1960s; corporate strategy in the 1970s; industry analysis and competition in the late 1970s and early 1980s; the quest for competitive advantage in the late 1980s, and the focus on core competencies in the early 1990s (see Exhibit 2-6).

In this thesis, we suggest that the next dominant theme of strategic management will be the quest for corporate growth. Already, major consulting firms are deploying their best resources to tackle the vast topic of corporate growth. There is evidence that shareholders place a higher value on profit growth achieved through revenue growth compared to profit growth achieved through downsizing (Gertz, 1994).

Responding to shareholders perceptions, companies are more specific about growth strategies in their annual reports. A recent *Wall Street Journal* article explains, "More companies are focusing on explaining growth projections, thanks to more liberal 'safe harbor' laws; a desire to be labeled a 'growth company'; and a need to show where sales will come from in the post-cutback era, says Addison Corporate Annual Reports, New York" (4/11/96, p. A-1).

There are a few basic questions that need to be addressed to analyze growth:

- What is corporate growth and how do we measure it?

- Is growth important to corporations? If so, why?
- What are the drivers of corporate growth?
- What are the limits to corporate growth?

To maintain competitive advantage, corporations engage in continuous repositioning of their unique competencies through strategy choices. The change in positioning is measured by an increase or decrease in profit and revenue, and corporate growth is usually associated with increased profit and revenue.

Growth is important because it signals that the alignment of strategy and the core competencies of the firm is successful. When such alignment occurs, the firm is in a position to offer more value per dollar to its customers and at the same time generate larger profits than its competitors. According to our research, the economic reward of growth is directly linked to the company's use of its core competencies, which in turn depends on their strategic alignment. We believe that companies must use an integrated measurement system<sup>1</sup> in combination with a reward system to acquire or renew the company's core competencies.

According to Henderson,<sup>2</sup> companies that capture a portion of the market do so because they have inherently unique advantages over their competitors. This concept implies that firms within an industry must have different strategies to compete and survive, and therefore there would be many different paths to corporate growth.

In our study we have identified characteristics that are common among companies that successfully grew above their industry average. Although these characteristics may not cover all aspects of every corporation, they can be a useful guide to identifying companies that have greater potential for growing successfully.

Within the five companies studied, we have found a correlation between growth and employee entrepreneurship. Usually the companies have decentralized units with independent decision making. They have developed a capability to learn from their

environment and they encourage knowledge sharing. Also, they are risk takers, willing to consider failure as another opportunity to learn.

Our analysis of growth drivers was done using system dynamics.<sup>3</sup> This methodology allows us to look at "hard" and "soft" variables and their interactions to explain sustained growth. For example, consider how workforce morale (a "soft" variable) affects productivity (a "hard" variable). "Soft" variables are often overlooked in strategic thinking.

On the subject of limits to growth in corporations, this thesis focuses on the supply and demand curves from a dynamic perspective. From this perspective, we believe that top management's time to analyze and make decisions related to growth represents an important limit to corporate growth. The implication of this finding suggests that companies must decentralize the decision-making process through specialization and empower lower levels of the organization.

## **B. METHODOLOGY**

To apply the Maps of Growth concept, we studied five companies that have grown successfully over the last eight years: 3M, Corning, Hewlett Packard, Intel, and Microsoft. The information gathered for these companies was collected through interviews with top management, combined with independent research on each company. We conducted extensive research on the topic of growth and found that most of the previous analysis considered the firm an static entity. It is only in recent articles that we found a dynamic approach to this topic.



## C. THESIS ORGANIZATION

The thesis is organized as follows:

Chapter 2 contains a review of the general topic of growth from the perspective of a number of authors.

Chapter 3 contains a brief descriptive overview of the sample companies and their performance as measured by profit and revenue growth.

Chapter 4 contains a general analysis of current methods for analyzing and measuring corporate growth, including the Balance Scorecard approach and System Dynamics causal loops. Then the Maps of Growth approach is introduced which we devised as an alternative method of measuring growth. An illustration is provided showing how the two methods can be effectively combined for even finer measurement.

Chapter 5 contains a comprehensive analysis of the Maps of Growth. We present 16 different maps of growth and explain how they generate growth for corporations. We show graphic representation of these maps and illustrate them with examples. We also explain the main drivers in each of the maps and the inherent limits to growth that exists.

Chapter 6 presents the results of our interviews with five successful companies. Included is a brief descriptive overview of each company chosen for this research. We explain the specific maps of growth for each company and combine them with the Balance Scorecard to measure the drivers that generate growth.

Chapter 7 presents our conclusions gathered from the research.

## NOTES

- 1.. An example of a comprehensive integrated measurement system is the Balanced Scorecard proposed by Kaplan and Norton, who state, "This system supplements traditional financial measures with criteria that measure performance from three additional perspectives - those of customers, internal business processes, and learning and growth" (Kaplan and Norton, 1996).
- 2.. Henderson, B.D., "The Origin of Strategy," *Harvard Business Review*, November-December 1989.
- 3.. Stermann, J.D., Sloan School of Management, Class lecture notes, Fall, 1995.  
Forrester, J.W. *Industrial Dynamics*. Productivity Press, 1961.  
Packer, D.W. *Resource Acquisition in Corporate Growth*. Cambridge: MIT Press, 1964.

## CHAPTER TWO

### GENERAL REVIEW OF GROWTH

---

#### A. INTRODUCTION

##### *What is Growth?*<sup>1</sup>

There are two general components of growth: economic growth and development growth. Economic growth is measured by increases in quantity such as output, exports, and sales (correlated to hard measures such as financial variables). Development growth evaluates increases in quality or size, such as employee knowledge, quality of internal process, and customers' perceptions (correlated to soft variables such as customer perspective, internal business processes, learning and growth/renewal measures.)

##### *How is Growth Measured?*

Corporate growth can be measured in many different ways. The most common are: revenue, profit, and market value growth.<sup>2</sup> Revenue growth alone is not a complete measure of growth because it does not necessarily imply profit or market value growth. Profit growth can be generated by operational and managerial improvements to a limit, but it can also be achieved without revenue growth. Market value growth reflects the market valuation of discounted cash flows, the attractiveness of the company's products or industry, and the potential for profit growth through revenue growth. This market valuation allow firms to identify, from a market or consumer perspective, where value is migrating.

Slywotzsky argues that the market value to revenue ratio is the best indicator for studying the migration of value in an industry segment (or cluster.) Implicit in this ratio is the assumption that the market value values the growth potential of each firm. The

summation of all firm's ratios within one industry cluster through time helps to predict the value migration trend. In turn, firms can reorient their strategies to follow that trend so as to capture the maximum value from the market. Firms have to interpret the value trend of value migration carefully since the potential for growth migrates closely with the value trend.<sup>3</sup>

*Why is Growth Important to Corporations?*

Profit and revenue growth are the expected result of a successful business strategy. Many times they are the only concrete indicator of such accomplishment. Revenue growth is usually the short-term economic result of a sound strategy, whereas sustained profit growth is associated with the long-term result of that strategy. Therefore, growth represents a primary factor in the main objective of corporate strategy - the long-term pursuit of superior profitability.

Especially important is the effect on profitability of the firm's market growth. Market growth has a strong correlation with profitability, as studies using the PIMS (Profit Impact of Market Strategy) database<sup>4</sup> have found. This is due mainly to the effect on profitability that an increase in the use of production capacity has in response to an increase in demand (see Exhibit 2-1). Therefore, when a firm is capable of generating a strong demand, or when the industry is growing due to external changes in patterns of consumption, the firm can grow profitably.

**Exhibit 2-1**  
**The Relationship Between Real Market Growth and Profitability**

	<b>Real Annual Rate of Market Growth</b>				
	<b>&lt; 5%</b>	<b>-5% to 0%</b>	<b>0% to 5%</b>	<b>5% to 10%</b>	<b>&gt; 10%</b>
<b>Gross margin on sales</b>	23.5	25.6	26.9	25.7	29.7
<b>Return on sales</b>	7.8	8.3	9.1	8.3	9.4
<b>Return on investment</b>	20.6	23.0	23.2	22.2	26.6
<b>Cash flow/investment</b>	6.0	4.9	3.5	2.4	-0.1

Source: Buzzell and Gale, 1987.

Growth represents different things for different types of companies. For small and start-up firms growth represents survival. An American Management Association survey<sup>5</sup> shows that eight out of ten businesses failed within the first five years of existence, and in most cases, businesses do not survive beyond one person's lifetime. For large, established corporations, growth aims at economies of scope and scale, increased shareholder and market value, sustained profitability, industry domination, and the ultimate dimension of success, company perpetuation.

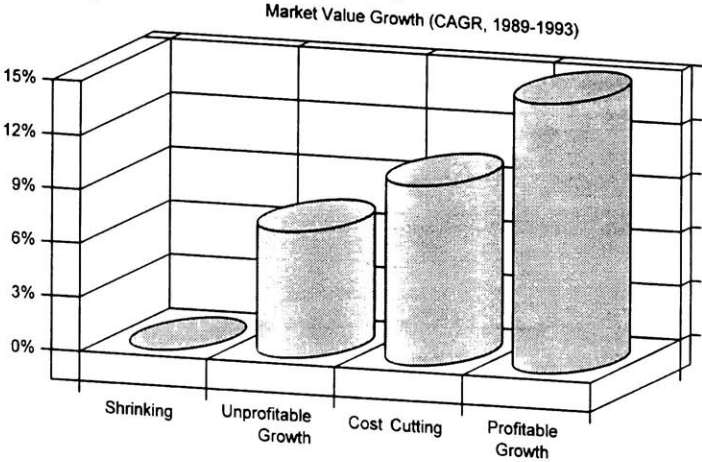
For managers, a powerful driver for achieving corporate growth is found in organizational science. Corporate success is associated with revenue and profit growth,<sup>6</sup> and those who achieve corporate growth are considered to be successful. The implications of this relationship have important consequences when managers are in charge of the firm's strategic plan.

***How Should Companies Grow?***

In a recent study Gertz found:

As far as the stock market is concerned, a penny saved is not as precious as a penny earned. Investors will reward a successful downsizing program, but they place a much higher value on companies that improve their bottom line by increasing revenues. In the five-year period studied, the market value of companies that posted higher-than-industry-average profits as a result of higher-than-average revenue growth - i.e., the profitable growers - grew at a 15% compound annual rate. Over that same period, the cost cutters saw their market value grow only 10% annually. Profitable growth, in other words, is much more richly rewarded than effective cost-cutting.<sup>7</sup> (see also Exhibit 2-2.)

**Exhibit 2-2**  
**Impact of Alternative Strategies on Shareholder Value**



Source: Gertz, 1995.

**B. TYPES OF GROWTH**

Corporate growth can be generated internally through organizational and operational improvements, or externally through acquisitions, associations, joint ventures, alliances, and mergers.

*Internal Growth*

The opportunities offered by the internally generated growth processes include; cost reduction, mastering innovation processes, new product introduction, product cycle reduction, lean production, supplier's management, distribution channel management, customer management, among others. The opportunities for growth within a company can be analyzed using the following matrix of products and markets in Exhibit 2-3. The way to read this matrix is the following: a company with an existing product in an existing market can pursue growth using a market penetration strategy; for a new product in an existing market growth can be achieved through a product development strategy, and so forth.

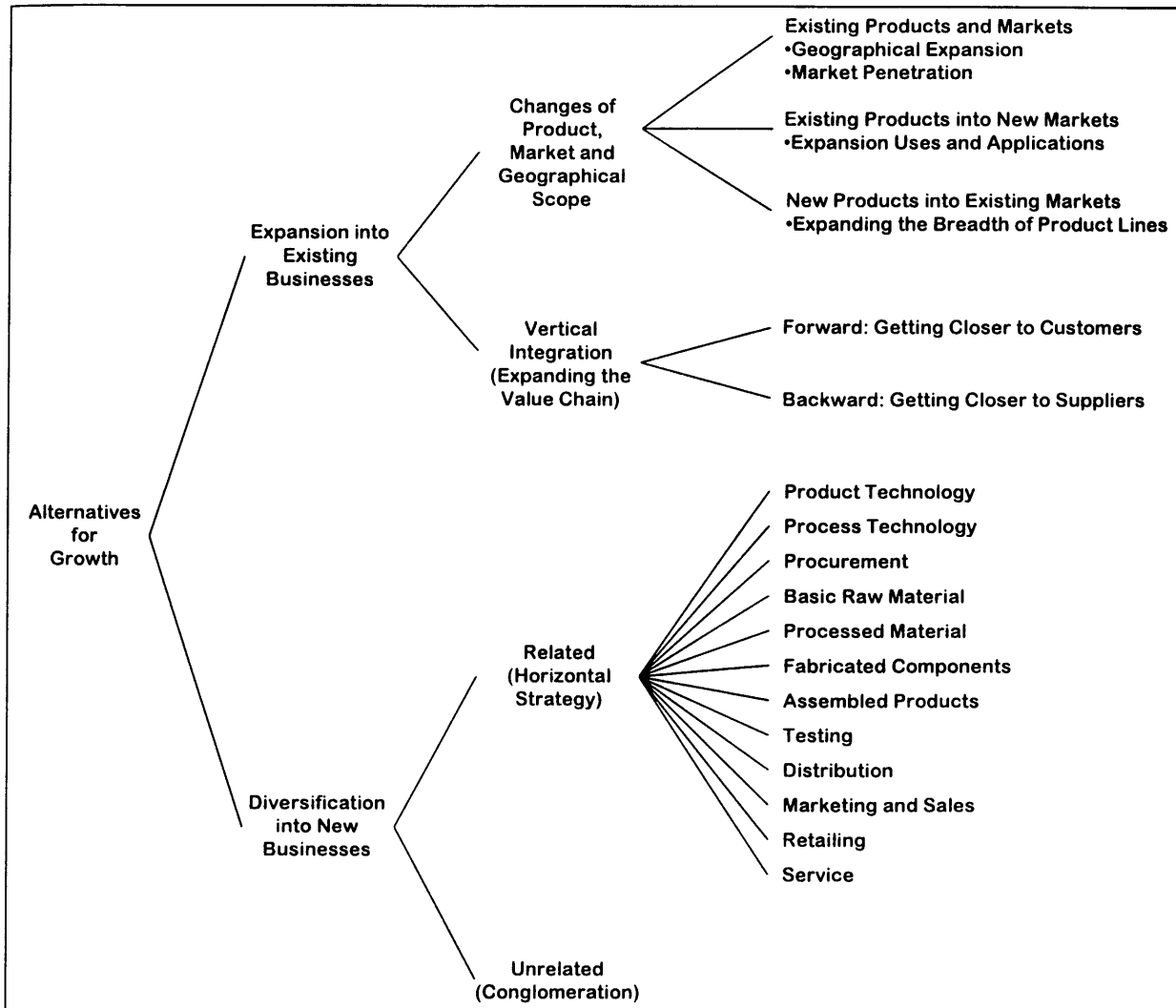
Exhibit 2-3  
Growth Opportunities

		Market	
		Existing	New
Product	Existing	Market Penetration	Market Development
	New	Product Development	Diversification

Source: Hax and Majluf, 1991.

Hax and Majluf<sup>8</sup> present the alternatives for internal growth and diversification, as shown in Exhibit 2-4.

**Exhibit 2-4**  
**Alternatives for Growth and Diversification**



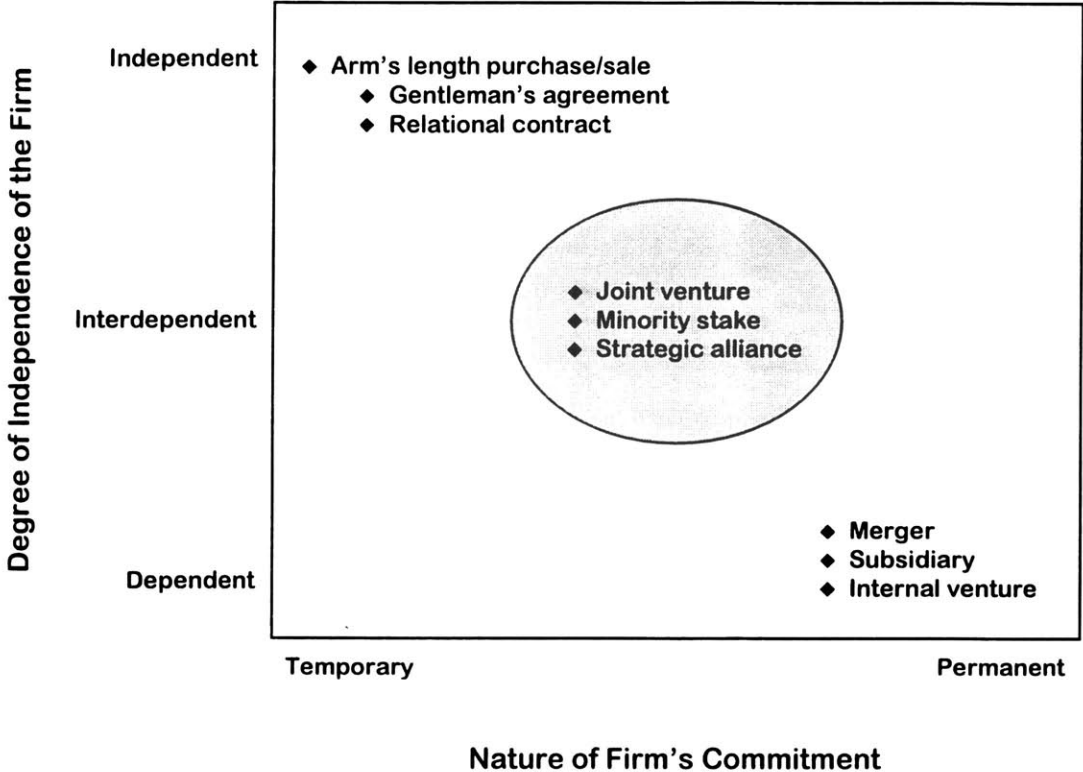
Source: Hax and Majluf, 1991.

### *External Growth*

The main sources of external growth opportunities are mergers, acquisitions, alliances, and joint ventures. External opportunities for growth requires a firm's commitment to resources that can be a constraint to other activities of the firm. In Exhibit

2-5 we can visualize the different required commitment levels of the firm versus the degree of independence when evaluating different opportunities for growth.

**Exhibit 2-5  
Interdependency and Commitment Matrix**



Source: Lessard, lecture notes, 1996.

**C. THEORIES OF GROWTH**

**1. Economic: Microeconomics Theory of the Firm**

Penrose<sup>9</sup> considers the firm as the minimum economic unit composed of a pool of physical and human resources. She assumes there are two motives for the existence of the firm: the profit motive and the long-run growth and profit motive. Penrose concludes that given a determined demand, there is an optimum profitable size of the firm and that the job of a manager is therefore to find that firm size.



The growth theories of both Penrose and Harris<sup>10</sup> were developed as a branch of the Managerial Theories of the Firm<sup>11</sup>, in which the managers of corporations have an element of discretion over the objectives they choose to pursue. In this context, managers are presumed to satisfy instincts of power, dominance, and prestige by pursuing growth as an objective. The capital market imposes a constraint on managers' actions through the merger and takeover mechanisms.

## 2. Managerial: Business Strategy for Growth

To understand why growth has become so important, we have analyzed the main restructuring processes companies have gone through in the last decade. Restructuring has led to more efficient, competitive, and adaptive organizations. Since the high mobility of capital, technology, and the opening of economies has created a truly global marketplace, the next step to generating growth in most companies is leveraging their core capabilities to face global competition.

Business strategies, as Grant<sup>12</sup> suggests, evolved into the quest for competitive advantages in the early 1990. We believe that the next dominant theme of strategic management is *The Quest for Corporate Growth*. The evolution of strategic management is illustrated in Exhibit 2-6, modified from Grant's book to include the proposed newest stage.

Exhibit 2-6

The Evolution of Strategic Management

Period	Dominant Theme	Main Focus	Principal Concepts & Techniques	Organizational Implications
1950s	Budgetary Planning & Control	Financial control through operating budgets	<ul style="list-style-type: none"> <li>• Financial budgeting</li> <li>• investment planning</li> <li>• project appraisal</li> </ul>	<ul style="list-style-type: none"> <li>• Financial management as key corporate function</li> </ul>
1960s	Corporate Planning	Planning growth	<ul style="list-style-type: none"> <li>• Market forecasting</li> <li>• Diversification and analysis of synergy</li> </ul>	<ul style="list-style-type: none"> <li>• Development of corporate planning departments</li> <li>• Rise of conglomerates</li> <li>• Diffusion of M-Form</li> </ul>
1970s	Corporate Strategy	Portfolio planning	<ul style="list-style-type: none"> <li>• SBU as unit of analysis</li> <li>• Portfolio planning matrices</li> <li>• Analysis of experience curves and returns to market share</li> </ul>	<ul style="list-style-type: none"> <li>• Integration of financial &amp; strategic control.</li> <li>• Strategic planning as a dialogue between corporate HQ and the divisions.</li> </ul>
1970s and 1980s	Analysis of Industry & Competition	Choice of industries, markets, segments and positioning within them.	<ul style="list-style-type: none"> <li>• Analysis of industry structure.</li> <li>• Competitor analysis.</li> <li>• PIMS analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Divestment of unattractive business units.</li> <li>• Active asset management.</li> </ul>
1980s and 1990s	The Quest for Competitive Advantage	<p>Sources of competitive advantage within the firm.</p> <p>Dynamic aspects of strategy.</p>	<ul style="list-style-type: none"> <li>• Resource analysis</li> <li>• Analysis of organizational competence and capability</li> <li>• Dynamic analysis: analysis of speed, responsiveness, &amp; first mover advantage</li> </ul>	<ul style="list-style-type: none"> <li>• Corporate restructuring and business process reengineering.</li> <li>• Building capabilities through MIS, HRM, strategic alliances, and new organizational forms.</li> </ul>
Late 1990s	The Quest for Corporate Growth	<p>Sources of sustained growth.</p> <p>Adaptive organization.</p> <p>Incrementalism.</p>	<ul style="list-style-type: none"> <li>• Knowledge based resources analysis.</li> <li>• Global brand and cross border marketing analysis.</li> <li>• Dynamic analysis: time to market, R&amp;D and product life cycle.</li> <li>• Flexible production.</li> </ul>	<ul style="list-style-type: none"> <li>• Learning, adaptive and virtual organization.</li> <li>• Knowledge and information management.</li> <li>• Entrepreneurial management.</li> <li>• Innovative engineering (marketing, R&amp;D, production interface.)</li> </ul>

Source: Grant, 1995.

An understanding of the principles of competition is important to developing sound strategies that will lead to sustainable growth (see Exhibit 2-7).

Exhibit 2-7  
Definition of Competition

PRINCIPLES OF COMPETITION	
<p>Robert Grant's examination of the role of competition identifies four conditions for "<i>strategic or rational competition</i>":</p> <ul style="list-style-type: none"><li>• finite amount of resources available to all competitors;</li><li>• competitors' objectives mutually inconsistent;</li><li>• capability to rationalize and anticipate competitors' actions on the basis of their expectations; and</li><li>• to adjust their behavior and characteristics based on these analysis.</li></ul>	<ul style="list-style-type: none"><li>• imagination to foresee alternative actions and logic to analyze their consequences;</li><li>• availability of resources beyond current needs in order to invest in future potential.</li></ul>
<p>Bruce Henderson, BCG's founder, compiles the primary requirements for <i>strategic competition</i> as:</p> <ul style="list-style-type: none"><li>• a critical mass of knowledge concerning the competitive process;</li><li>• the ability to integrate the knowledge and understand cause and effect;</li></ul>	<p>Grant characterizes successful strategies as those that present four key points:</p> <ul style="list-style-type: none"><li>• they are directed toward unambiguous long-term goals;</li><li>• they are based on intimate self-knowledge by the organization or individuals of internal capabilities;</li><li>• they are implemented with resolution, coordination, and effective harnessing of the capabilities and commitment of all members of the organization.</li></ul>

Source: Grant, 1995; Henderson, 1984.

Analysis of business strategy trends suggests that the rationale behind strategy formulation is *competition* and the essence of strategy is the *interdependence* of competitors. These concepts mean that resources are scarce, that one player's actions affect the outcome of the others, and that a dynamic analysis is required to assess competitors' expected reactions. We have formulated a number of dynamic analyses of distinctive paths to corporate growth which are presented in Chapter 4.

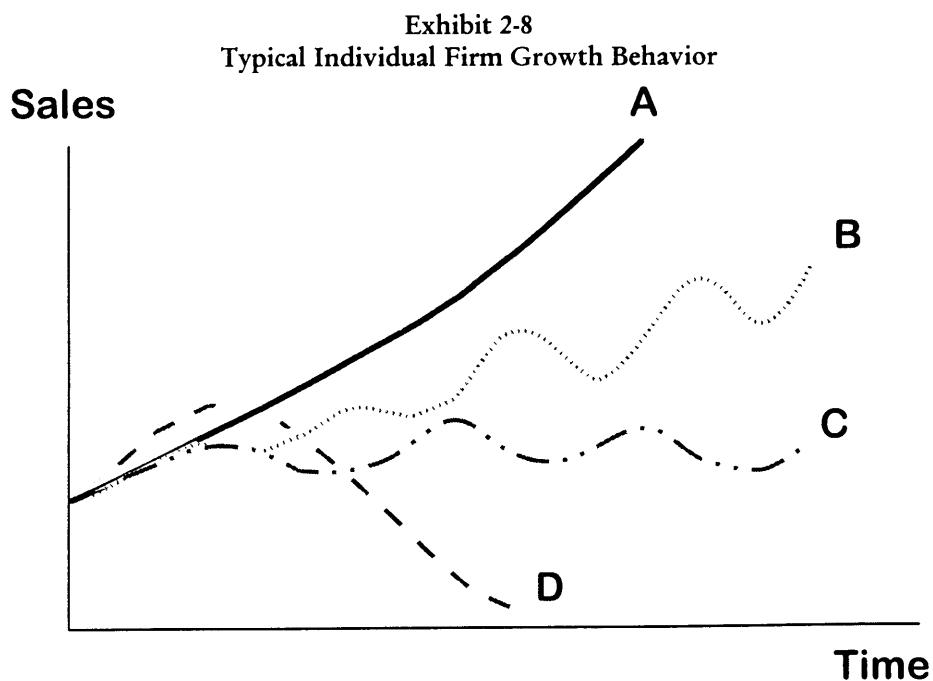
The dynamics of strategic competition have been increasingly directed toward a

resource-based view of the firm focusing on core competencies and capabilities. This view is particularly valuable when firms are seen as less dependent on market positioning and more dependent on internal resources. This introspective shift is geared toward generating firm evolution through mastering innovation and internal processes. We can see evidence of this shift in the restructuring activities in which companies have engaged over the last decade.

### 3. Modeling: Dynamics Studies of Growth

Most of the research on the dynamics of corporate growth has been done at MIT's System Dynamics Group since the early 1960s. These studies centered on the managerial policies that set the resources of the company associated with the corporate rate of growth.

Literature on growth shows that there is a difference between the paths followed by growing industries and individual firms in the same industries. Industry growth resembles the life cycle model, while individual firms show four different types of behaviors depicted in Exhibit 2-8: smooth growth (curve A), growth and crisis behavior (curve B), stagnation (curve C), and decaying firms (curve D)



Source: Packer, 1964.

Lyneis<sup>13</sup> describes the industry growth behavior as follows:

The opening up of a new major activity which promises to offer tremendous opportunities attracts many new entrants. The industry becomes overcrowded; inevitably there is a "shake-out": where there were 30 to 40 firms, only 5 or 6 remain. Of these, 3 or 4 assume leadership and retain it for many decades. The others who remain manage to become respectable fair-sized businesses, occupying small but distinct segments of the market. (p. 4).

Unlike the behavior of growing industries, there is no predictable pattern characterizing growing firms. Drucker<sup>14</sup> stated this point (see Exhibit 2-9):

But which companies will emerge as leaders in this "shake-out" process and which will disappear is unpredictable. Even the insider has little chance to guess correctly. The decisive factor is well hidden. It is, above all, the capacity of a company's management to manage for growth and to develop the strategy that will give it the leadership position in the shakeout. (p. 771.)

MIT's system dynamics studies on corporate growth focused on the origins of uniqueness in firms:

The study seeks, within the policy structure and information flows of the growing company, the causes of such varied growth patterns. How do these patterns arise from different management attitudes and traditions. Contrary to first impressions, one cannot explain these differences on the basis of the particular industry or the type and design of products. Such differences can be found between companies which are directly competitive and whose products are nearly identical. One must therefore look deeper into the structure of the information flows and the policies which guide operating decisions.<sup>15</sup>

In system dynamics models aimed to determine growth patterns of firms, the influence of management is equally as important as the influence of market forces.

Forrester built a comprehensive model of growth focused on the acquisition and allocation of human resources within the firm. The main conclusions of the model for managers are:

- Inherently, growth shows an unstable behavior. This unstable behavior in the growth of firms is characterized by fluctuations, differences in patterns or shapes of growth curves, and growth dependence on a large number of variables.
- "Forrester found that management's operating policies, such as speed with which resources are allocated to different functions (e.g., between marketing and production) critically determines growth, stability, and profitability. Surprisingly, Forrester found that performance is enhanced when management is less aggressive in reallocating such resources," Professor John Sterman said.

## NOTES

1. In the following books one can find specific reference to the economic theory of the firm, organizational behavior, and knowledge-based growth:
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11. *Managerial Theories of the Firm*: Theories which have been developed from a belief that contemporary capitalism is characterized by the dominance within the production sector of large corporations, where ownership and control is separated between shareholders and managers respectively. It can be argued that given imperfect capital markets and non-competitive products markets, managers will have the scope to pursue objectives other than profit maximization. The major managerial theories of the firm are W. Baumol's "Sales Maximization Hypothesis," O. E. Williamson's "Managerial Discretion" model of the firm, and R. Harris's "Growth Theory of the Firm."
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## CHAPTER 3

### GROWING COMPANIES

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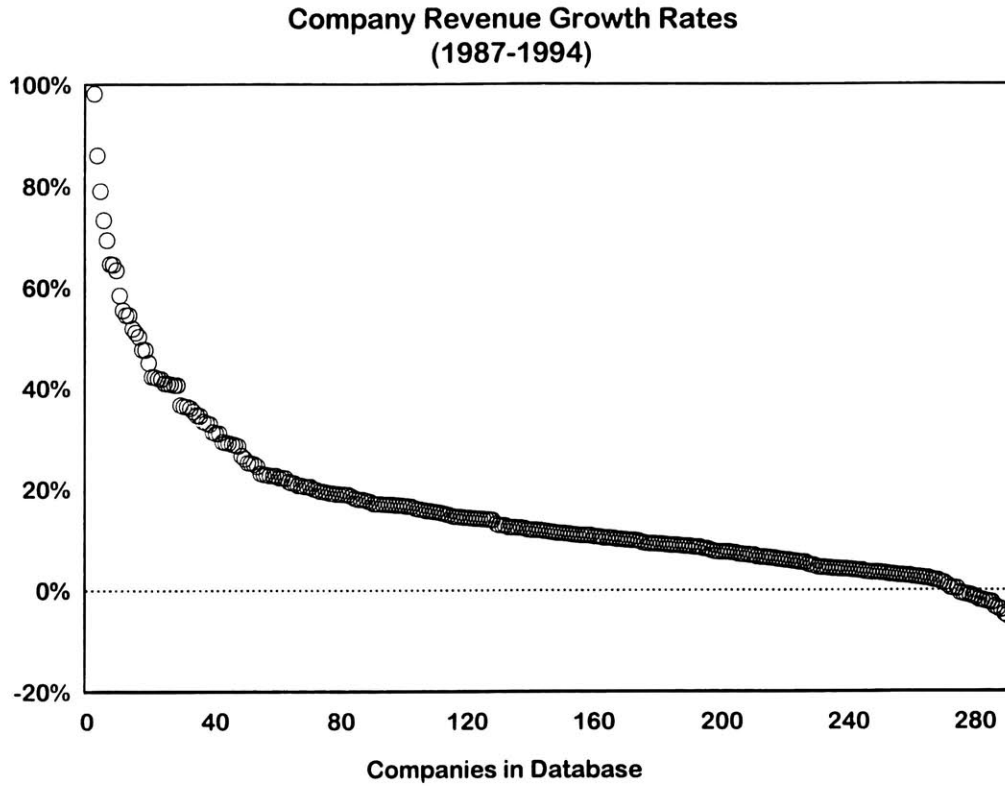
To identify companies that are growing, we used data from 290 companies for the period 1987 and 1994. In this period, we looked at compounded annual growth rates (CAGR) for revenue, profit, and company value. The results of the analysis and the subsequent selection of five companies for a more detailed study are described in this chapter. All the charts shown in this chapter were created using data supplied by Dean & Company of Vienna, Virginia, collected from various sources, including *Value Line Investment Survey*.

First, we arranged the sample by profit and revenue growth rate in descending order (Exhibits 3-1, 3-2, 3-3, and 3-4). In our sample, we found that the majority of companies with less than \$500 million in revenues and profit achieved the highest revenue and profit growth rates (Exhibits 3-1 and 3-3). It is apparent that company size plays a role in a company's rate of growth. The larger the company, the lower growth rate it will achieve. This is a key negative loop; since growth makes a company bigger, then it becomes more and more difficult to achieve further growth.

**Exhibit 3-1**  
**Revenue Growth by Size Segment**

Revenue Growth	Revenue Segment Distribution (CAGR)			
	< \$500 mill	\$500 mill to \$1 billion	\$1 to \$10 Billion	> \$10 Billion
> 20%	43.7%	18.0%	9.8%	5.0%
10 to 20%	29.4%	46.1%	34.8%	27.5%
0 to 10%	24.4%	28.2%	48.9%	57.5%
< 0%	2.5%	7.7%	6.5%	10.0%

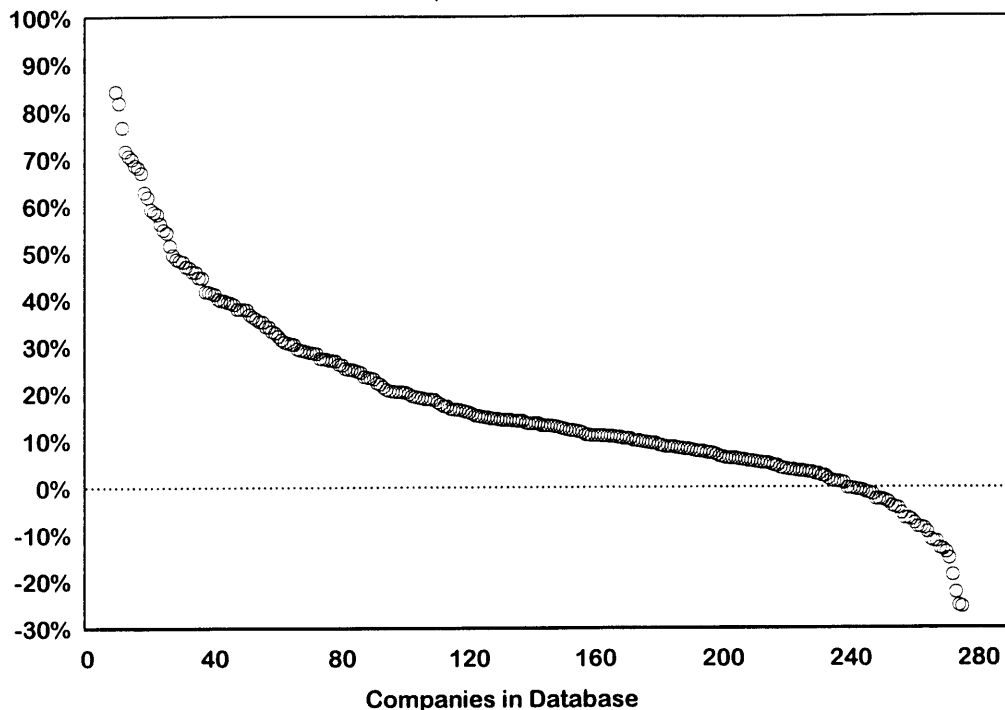
Exhibit 3-2: Revenue Growth Rates of Companies in Database



**Exhibit 3-3  
Profit Growth by Size Segment**

Revenue Growth Rate	Profit Segment Distribution (1987)			
	< \$500 million	\$500 million to \$1 billion	\$1 billion to \$10 billion	> \$10 billion
> 20%	43.9%	36.4%	21.2%	23.1%
10 to 20%	21.4%	21.2%	37.7%	30.8%
0 to 10%	18.4%	27.3%	27.1%	30.8%
< 0%	16.3%	15.2%	14.1%	15.4%

Exhibit 3-4: Profit Growth Rates of Companies in Database  
**Company Profit Growth Rates**  
**(1987-1994)**

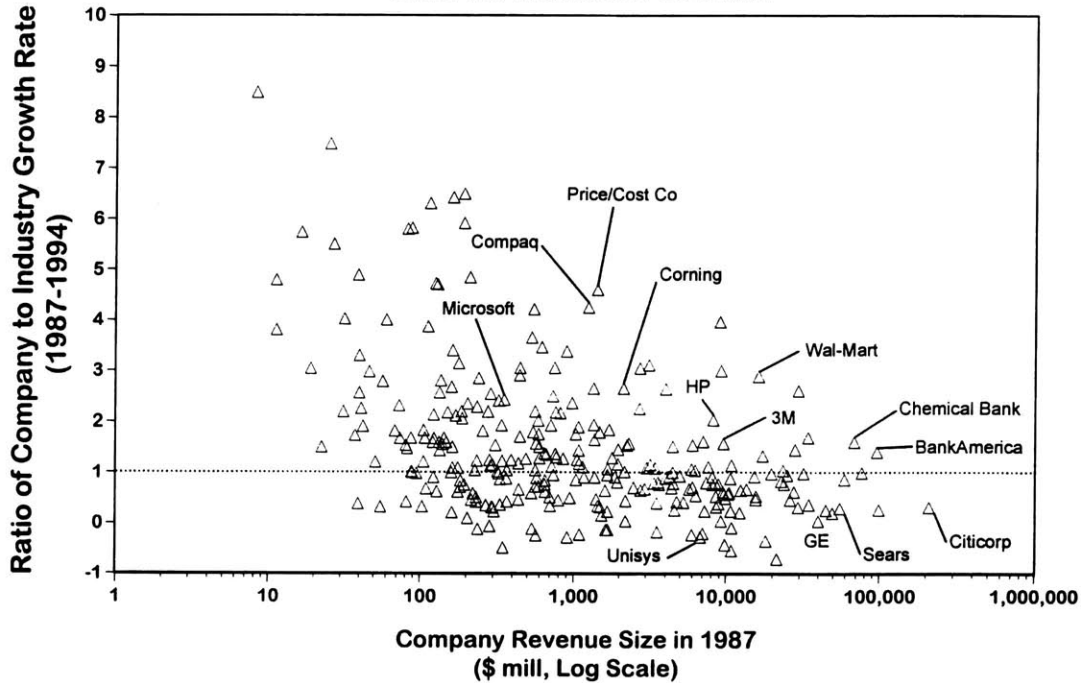


Second, when comparing company growth rates with that of its industry, we observed a significant spread for companies of the same size. In other words, large companies such as Wal-Mart and ABB have consistently outperformed their industries since 1987, while other large companies such as Sears and Unisys have not (see Exhibits 3-5, 3-6, 3-7, and 3-8).

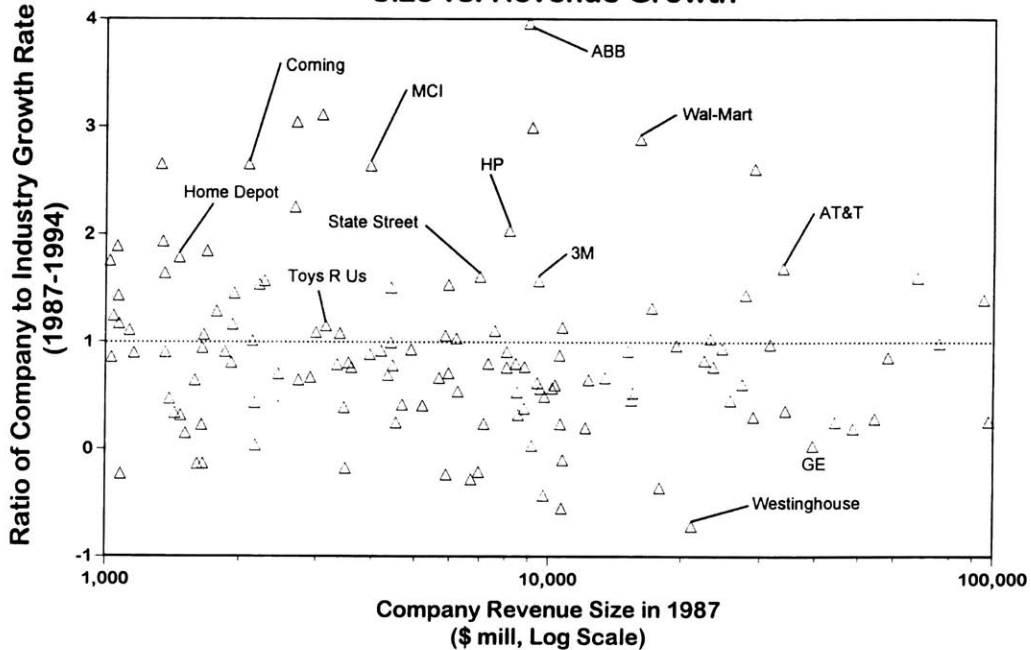
The spread is larger for companies generating less than \$200 million compared to significantly lower spreads for companies that generate more than \$200 million (see Exhibit 3-5). A closer look at companies between \$1 billion and \$100 billion in revenue show that above-average growers have a higher spread than below-average growers (see Exhibit 3-6). When successful growers outperform their industry, they do it in a grand way. On the other hand, the spread of below-average growers is significantly less than their counterparts (see Exhibit 3-5). Below-average growth firms tend to grow in line with their industry average (as is shown by the high relative density of firms below the dotted line equal to 1 in

Exhibits 3-5 and 3-6). A lower spread below average can be explained because a firm that regularly shows results below industry average is more likely to fail. Therefore, firms may go out of business and thus off the graph.

**Exhibit 3-5: Size versus Revenue Growth of Companies in Database**  
**Size vs. Revenue Growth**

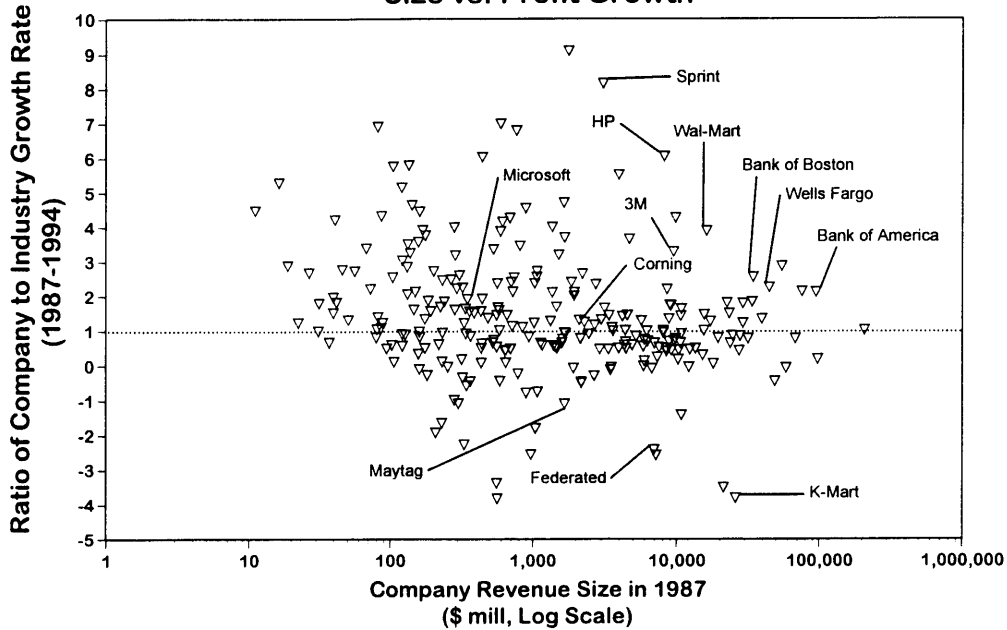


**Exhibit 3-6: Size versus Revenue Growth (close-up of lower quadrant)**  
**Size vs. Revenue Growth**

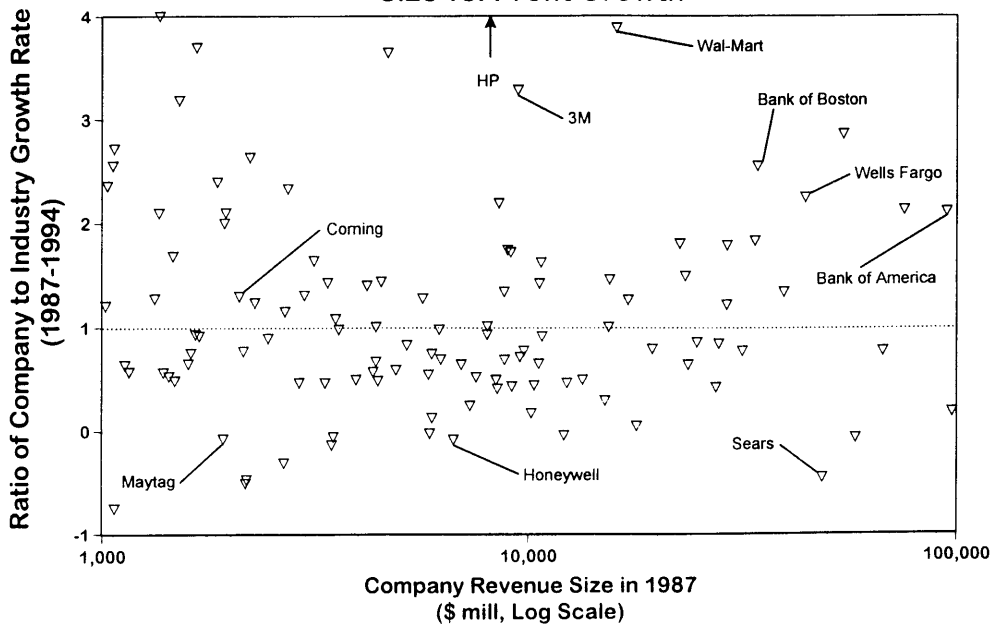


A similar comparison, this time looking at company size versus profit growth ratio, reveals that the spread is greater than that of revenue growth (see Exhibit 3-7). This is due mainly to cost-cutting methods such as scale efficiencies, accounting methods, and downsizing. A closer view of profit growth shows a higher spread for below-average growers as well (Exhibit 3-8).

**Exhibit 3-7: Profit Growth Compared to Industry Average  
Size vs. Profit Growth**



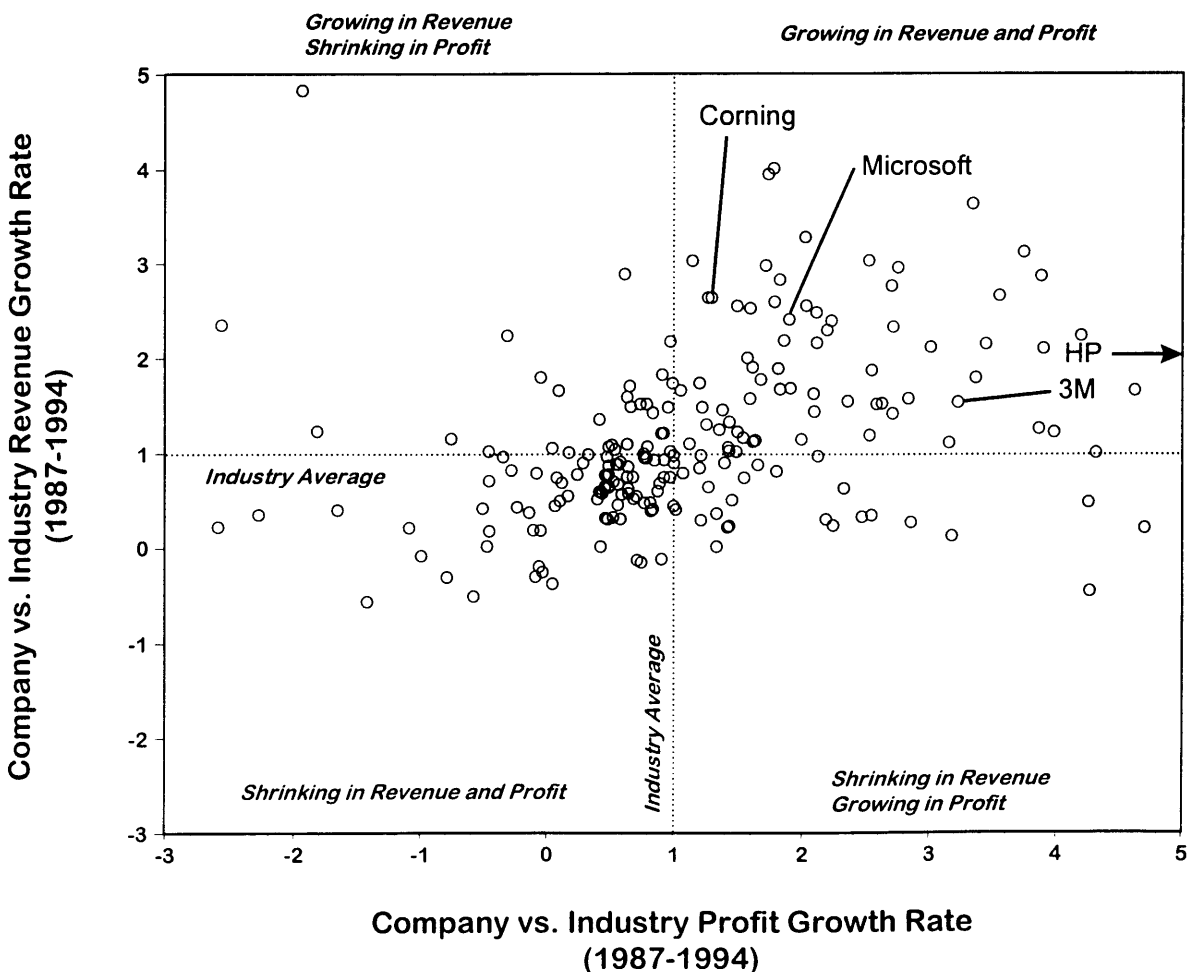
**Exhibit 3-8: Profit Growth Compared to Industry Average  
Size vs. Profit Growth**



A combination of profit and revenue growth graphs allow us to divide the new graph into four profitability quadrants: (see Exhibit 3-9).

- *growing revenues/growing profits* means that the companies in this category experience above- average growth in profit and in revenue.
- *shrinking revenues/growing profits* includes firms that experience above- average profit growth but below-average revenue growth.
- *growing revenues/shrinking profits* includes companies that grow above average in revenues, but below average in profit.
- *shrinking revenues/shrinking profits* identifies companies that are experiencing below-average growth in profit and revenue.

Exhibit 3-9: Company versus Industry Profit Growth Matrix (1987-1994)



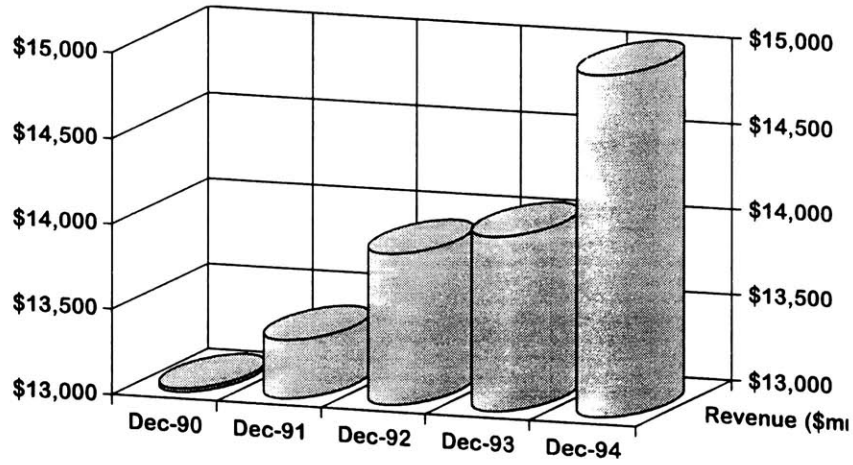
The rest of our work will focus on companies included in the *growing revenues and profits* quadrant. We identified five companies which are experiencing growth in both revenues and profits simultaneously which we believe are interesting case examples for our thesis:

**Exhibit 3-10: Selected companies**

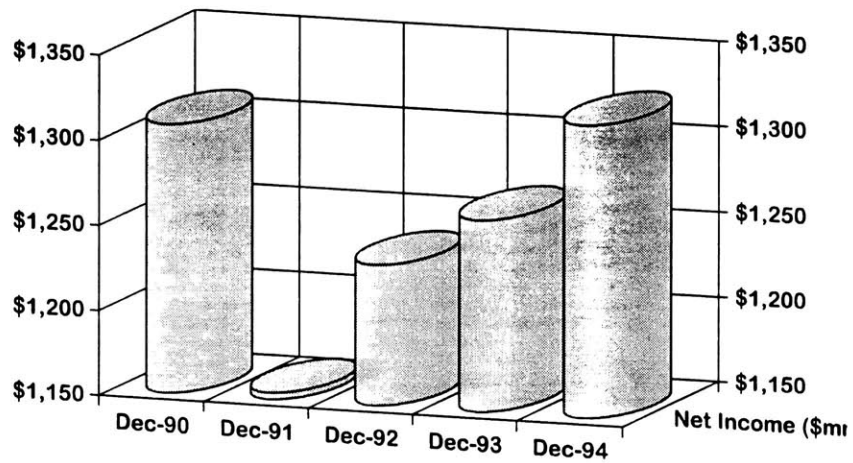
<b>Company</b>	<b>Industry</b>	<b>Revenue, Profit, and Market Value Growth</b>
<b>3M</b>	<b>Diversified Chemical</b>	<b>see exhibit 3-11</b>
<b>Corning</b>	<b>Specialty Materials</b>	<b>see exhibit 3-12</b>
<b>Hewlett Packard</b>	<b>Computer / Peripheral</b>	<b>see exhibit 3-13</b>
<b>Intel</b>	<b>Semiconductor</b>	<b>see exhibit 3-14</b>
<b>Microsoft</b>	<b>Computer Software / Services</b>	<b>see exhibit 3-15</b>

Exhibit 3-11: 3M's Historical Growth

### 3M Revenues (1990-1994)



### 3M Net Income (1990-1994)



### 3M Market Value (1983-1995)

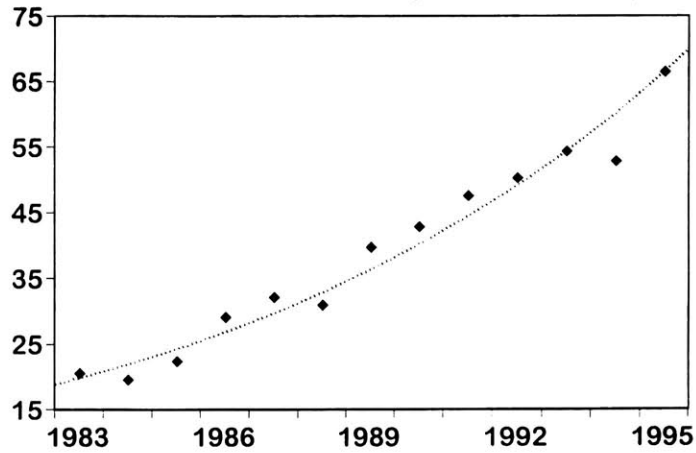
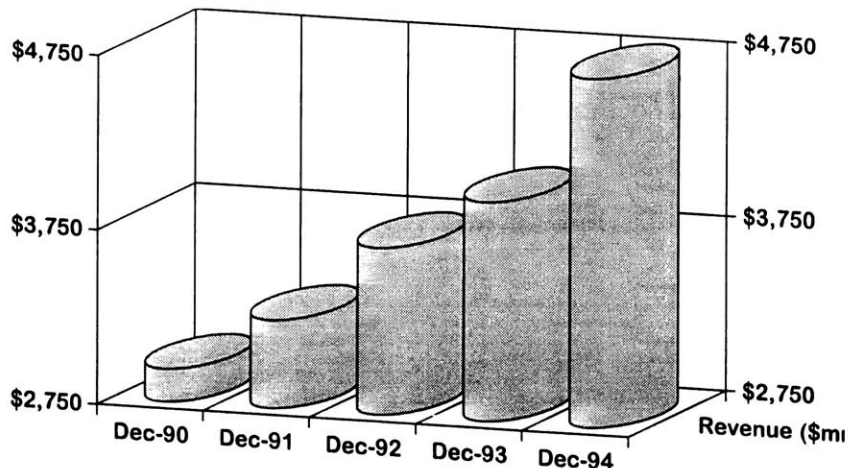


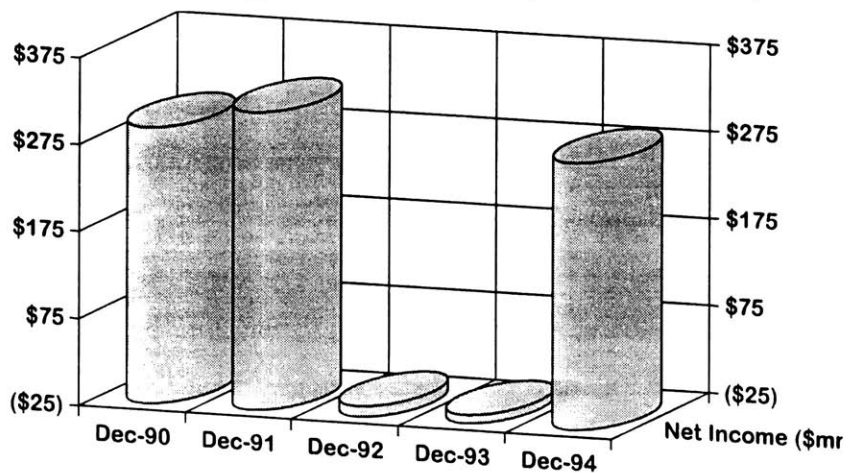


Exhibit 3-12: Corning's Historical Growth

### Corning Revenues (1990-1994)



### Corning Net Income (1990-1994)



### Corning Market Value (1983-1995)

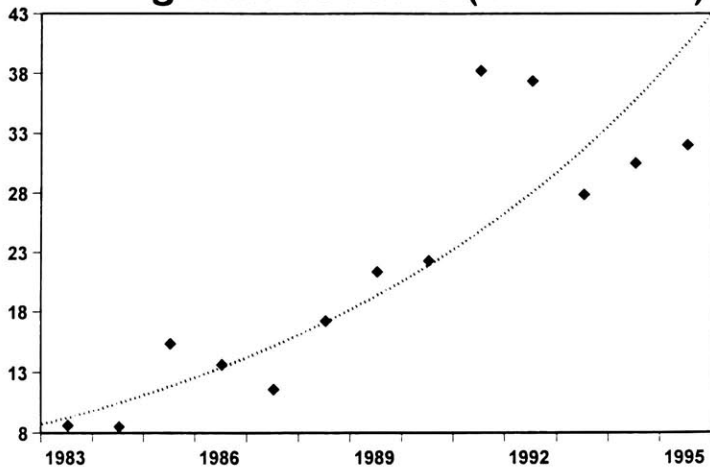
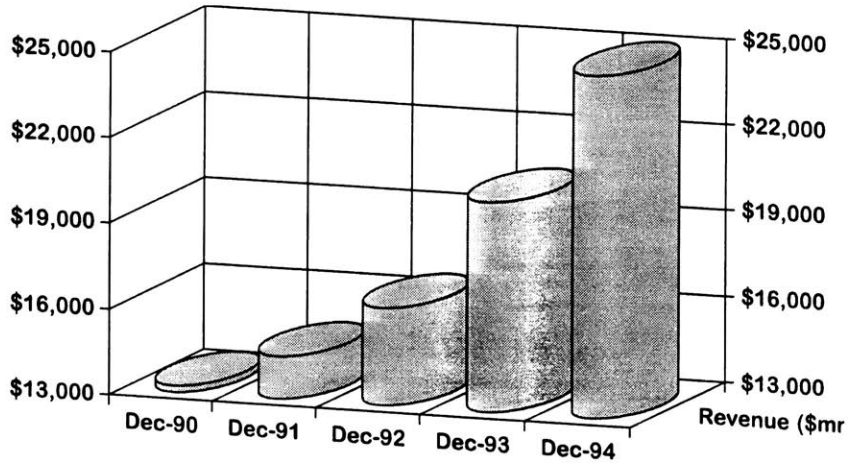
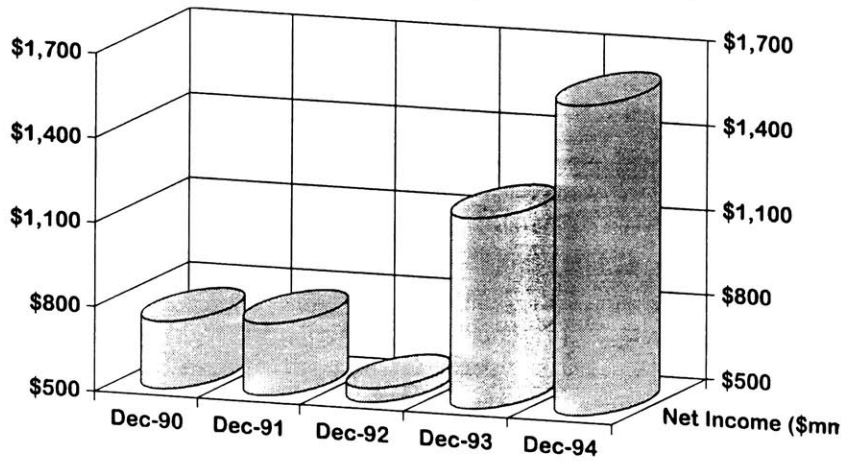


Exhibit 3-13: HP's Historical Growth

### HP Revenues (1990-1994)



### HP Net Income (1990-1994)



### HP Market Value (1983-1995)

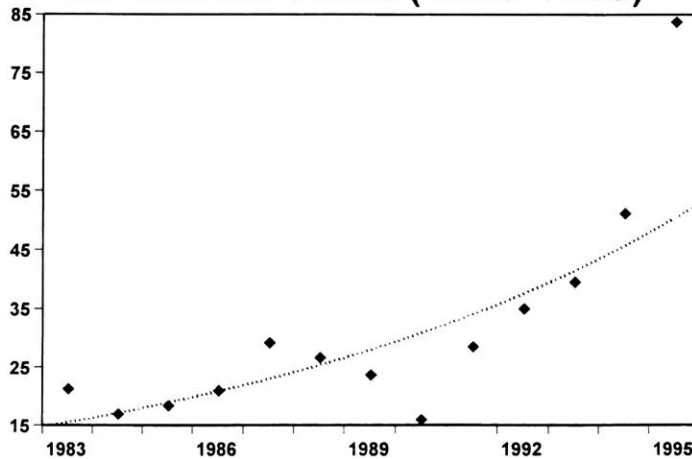
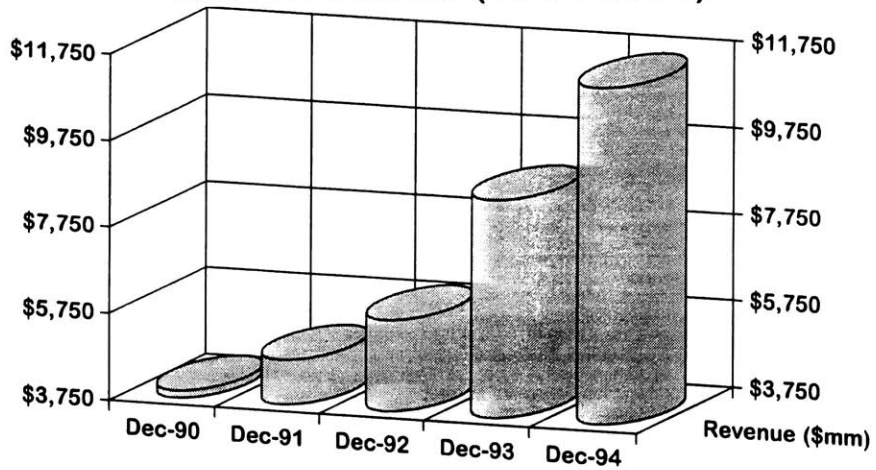
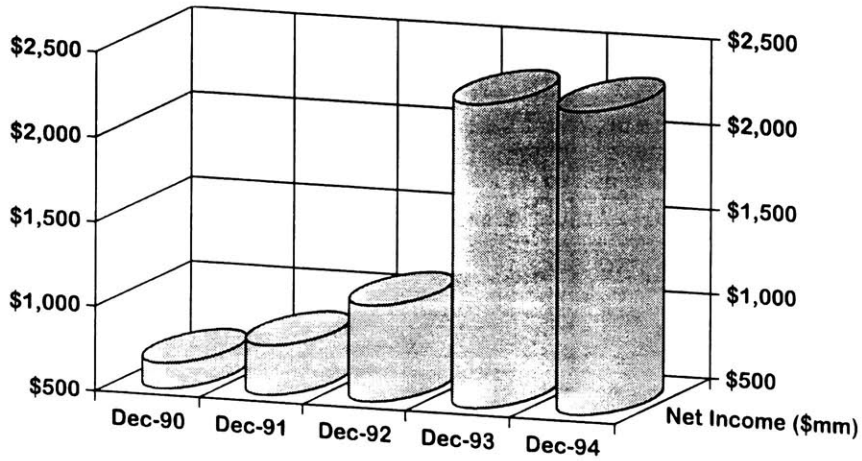


Exhibit 3-14: Intel's Historical Growth

### Intel Revenues (1990-1994)



### Intel Net Income (1990-1994)



### Intel Market Value (1983-1995)

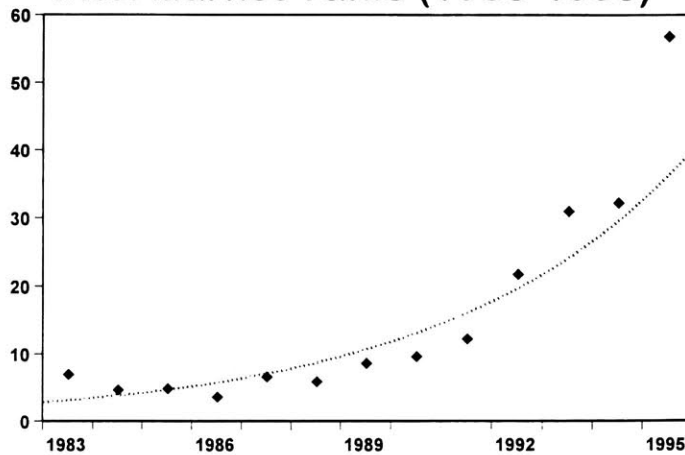
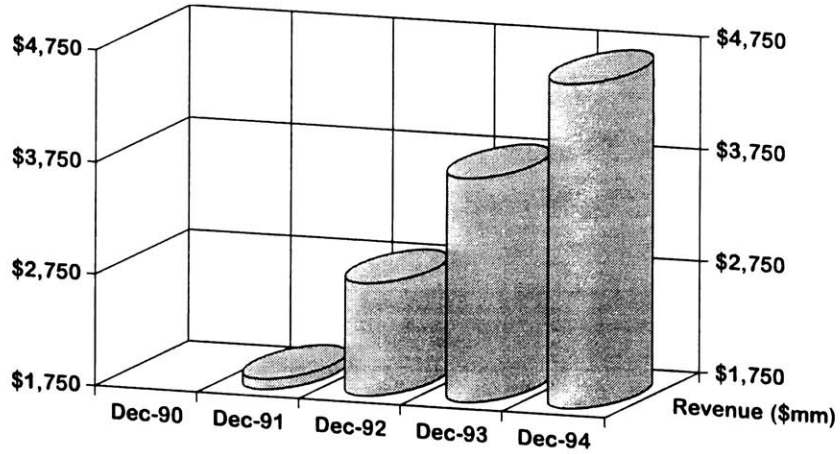
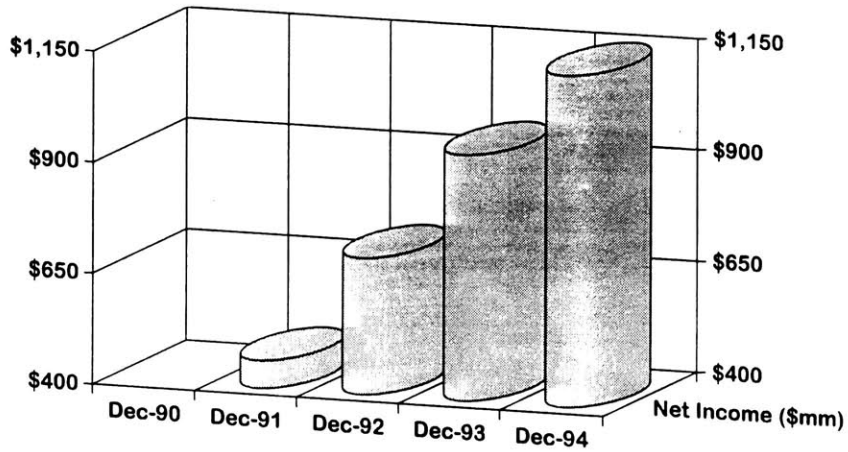


Exhibit 3-15: Microsoft's Historical Growth

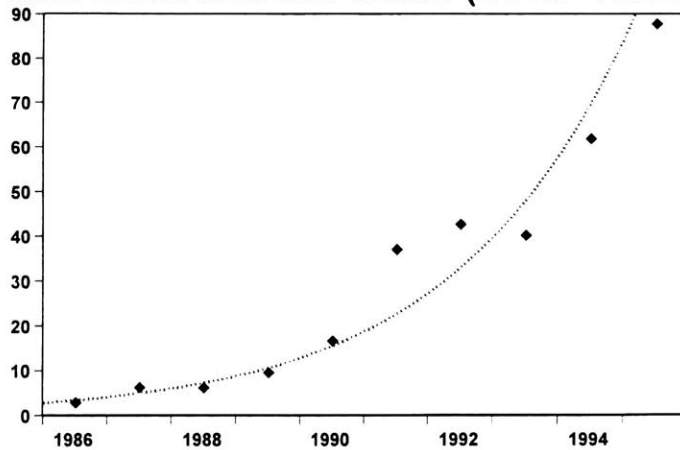
### Microsoft Revenues (1990-1994)



### Microsoft Net Income (1990-1994)



### Microsoft Market Value (1983-1995)



## CHAPTER 4

### FRAMEWORKS

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#### INTRODUCTION

When analyzing growth, the main challenge is how to link cause and effect with a concrete set of measurements that portray the corporation's performance. Two frameworks already exist, as we discussed earlier: Kaplan and Norton's Balanced Scorecard (BSC) and a system of causal loops introduced in the area of System Dynamics. In this thesis, we propose a third framework that combines the comprehensive measurement system of the Balanced Scorecard (BSC) with causal loops. We have called our end product **Maps of Growth**. Each map illustrates a cause-and-effect relationship between the main variables or drivers of growth associated with a measurement system.

When we began interviewing personnel at the five companies that are the subject of this thesis, we designed the interview guideline with the Maps of Growth framework in mind so we could assess what causes and effects exist within each company. In addition, we asked questions to determine what measurement system is in place in each company, and how it sets goals and measures results. Our questions incorporated the four perspectives of the Balanced Scorecard as they are now integrated into the Maps of Growth.

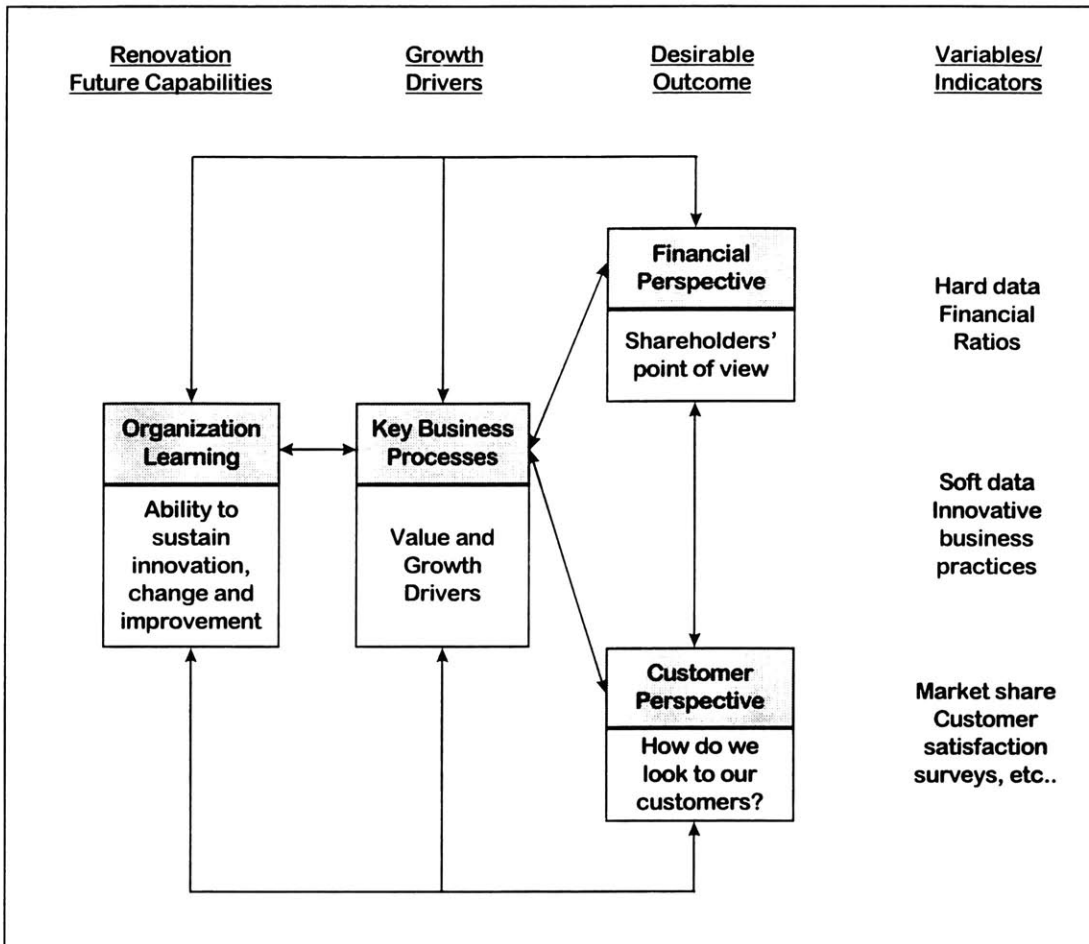
1. **Framework No. 1 -  
Metric System: The Balanced Scorecard**

Kaplan and Norton (1992, 1993, 1996) conceived the Balanced Scorecard as a measurement system that allows companies to manage performance through an integrated system. The premise is that the measurement system can influence management behavior and motivate employees; therefore, the conclusion is that the measurement system must be linked to strategy. Kaplan and Norton designed a "balanced scorecard" which combines both financial and operational measures into an integrated system of performance indicators. This approach to performance measurement assumes that no single measure is adequate for managing all aspects of the company's strategy.

In the balanced scorecard, traditional financial measures are supplemented with criteria that measure performance from three additional perspectives - customers, internal business processes, and learning and growth. These criteria enable companies to track financial results while simultaneously monitoring progress in building the capabilities and acquiring the intangible assets they will need for future growth.

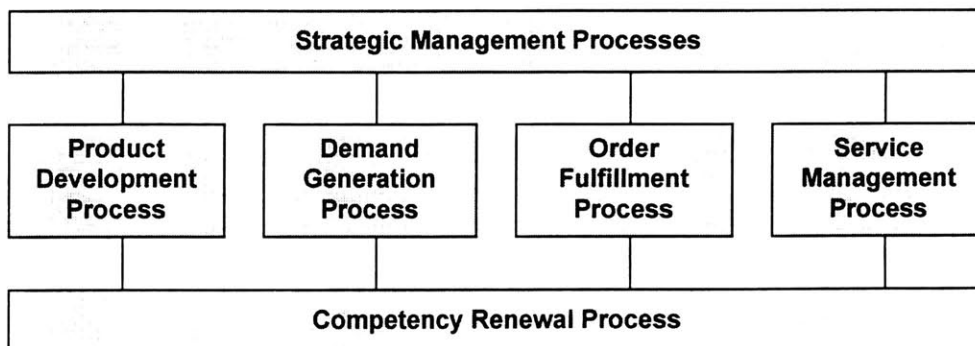
During conversations with Professor Arnaldo Hax, we realized it would be useful to modify the Balanced Scorecard as a way to assess the relationships between different perspectives and then correlate that with the strategy of the firm and its growth mechanisms. This modified balanced scorecard is illustrated in Exhibit 4-1, where Growth Drivers are evaluated from the perspective of Key Business Processes. These processes can be monitored using soft as well as hard variables. The Key Business Processes, described in Exhibit 4-2, are influenced by organizational learning, customer and financial perspectives in a continuous feedback process - each cycle produces observable measures that in turn influence and modify management behavior and therefore these Key Business Processes.

Exhibit 4-1  
Balanced Scorecard (modified)



Source: Kaplan and Norton (1992, 1993, 1996)

Exhibit 4-2  
Key Business Processes



Source: Kaplan and Norton (1992)

The goal of the balanced scorecard is to link a company's strategy with its measurement systems. Bearing that in mind, the criteria for an effective balanced scorecard can be summarized in the following points:

1. Cause and Effect Relationship

Strategy is a set of hypotheses about cause and effect; therefore every measure should be part of a cause and effect chain that represents the strategy.

2. Linked to Financial Ratios

Every measure selected can ultimately be related to financial indicators as a way of assessing its financial impact.

3. Performance Drivers

A balance of leading and lagging indicators is necessary to correctly connect cause and effect.

However, we believe that in order to be meaningful, the Balanced Scorecard needs to be supplemented with comparative measures such as benchmark metrics. This provides an assessment of individual performance levels in a more real context -- a comparison to the best or the average performers in a given industry.

We used these frameworks (as described in Exhibit 4-1 and Exhibit 4-2) to develop the metrics part of our interview questionnaire and to separate the different activities of each company in a consistent way. We tried to ascertain how each company translated its vision and strategies into a set of operating measures capable of driving growth that positively affects their Key Business Processes.



2. **Framework No. 2 -  
System Dynamics Causal Loops**

The crucial element of System Dynamics theory is the information flows and feedback that affect the decision processes of a firm. These are called "information feedback loops" and they determine the growth pattern that a company will likely follow (see Exhibit 4-3).

Exhibit 4-3: Business Dynamic

## PRINCIPLES OF BUSINESS DYNAMICS

**1. Every action produces a reaction.** One specific secondary effect of the new Us luxury tax was unemployment in the boat building industry. It took at least a year for the tax authorities to appreciate the full impact of their actions.

**2. Structure shapes behavior.** The linkages between parts of a business system and the ways in which decisions are made determine its performance. Hence behavior can be modified only through fundamental changes to the structure of a system.

**3. Complex interrelationships make a system's behavior difficult to understand.** The connection between cause and effect may become obscured, rendering reactions hard to predict.

**4. Time clouds the picture.** Where time delays operate in a system, understanding how and why things happen can be even more of a challenge.

**5. "Hard" and "soft" factors interact.** Consider how the morale of a workforce affects productivity, or how the motivation to save influences tax revenues. Such "soft" variables are often overlooked in strategic thinking. Their interrelationships with "hard" variables such as market share or capacity utilization add yet another layer of complexity to business systems.

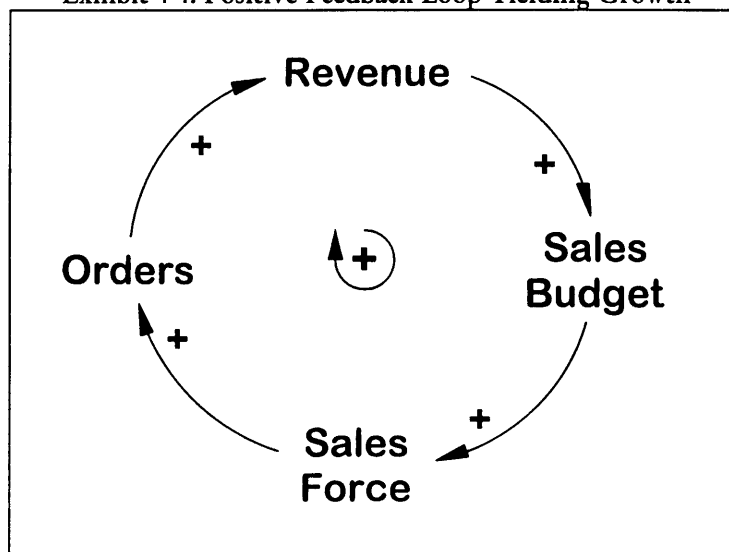
**6. Feedback reinforces and counteracts.** Once changes get going, some factors have a reinforcing and others an opposing or counteracting effect. Successful product development, for instance, enhances the reputation of a company, build market share, and yield profits to fund further product development - an example of reinforcing feedback. Heavy sales of a durable good, on the other hand, create an order backlog, delay deliveries, damage the product's attractiveness to future customer, and dampen sales - a case of counteracting feedback

Source: Avila, Mass and Turchan (1995, p 51).

There are two kinds of feedback loops: positive and negative. They can be characterized as follows:

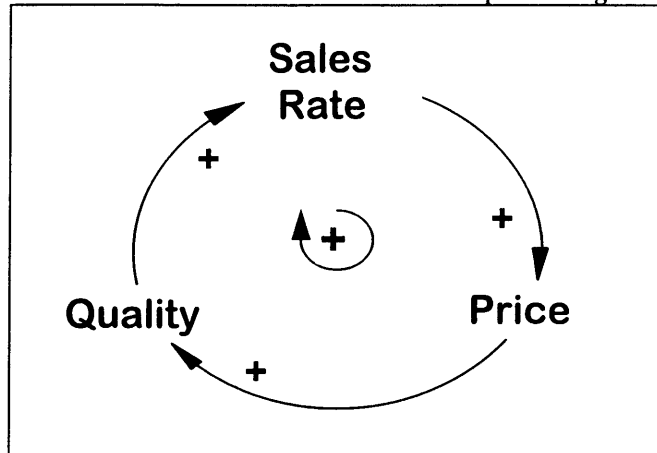
- Growth and decline are controlled by positive feedback loops. In a positive feedback loop, an increase in action A increases variable B which in turn increases action A still further. See Exhibit 4-4 as an example of a positive loop that yields growth. Exhibit 4-5 illustrates a positive loop that yields decline.

Exhibit 4-4: Positive Feedback Loop Yielding Growth



NOTE: This exhibit illustrates one important positive feedback loop underlying growth in a firm. An increase in sales of the firm's product leads to an increase in revenues. The increase in revenues in turn leads to an increase in the sales budget which allows the firm to increase sales effort. Increased sales effort increases sales. Therefore, an increase in sales leads to actions which increase sales further and growth result.

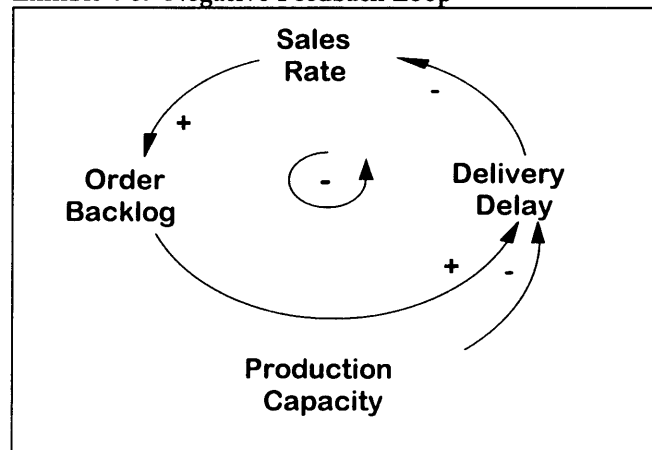
Exhibit 4-5: Positive Feedback Loop Yielding Decline



NOTE: This positive loop is likely to appear in its degenerative mode. A decline in sales leads to actions by the firm to decrease price so as to reverse the sales decline. The price decrease, however, potentially leads to economies which eventually lower quality. A decline in quality further decreases sales. Therefore, a decrease in sales leads to actions which decreases sales further. The feedback loop, while positive in polarity, leads to a decline in the firm's sales.

- Stagnation and the onset of crises are controlled by negative feedback loops. For example, if action A increases variable B above the firm's goal for variable B, decreases in action A result in an attempt to bring variable B back in line with the goal. See Exhibit 4-6 as an example of this loop.

Exhibit 4-6: Negative Feedback Loop



NOTE: This is a very common negative feedback loop, when a firm attempts to equate the firm's order rate with the firm's production capacity. An increase in sales rate above production capacity increases order backlog and delivery delay. Increased delivery delay results in a loss of sales to competitors and order rate declines. When order rate equals production capacity, the loop is in equilibrium.

### 3. Framework No. 3 – Combining Frameworks 1 with 2: Maps of Growth

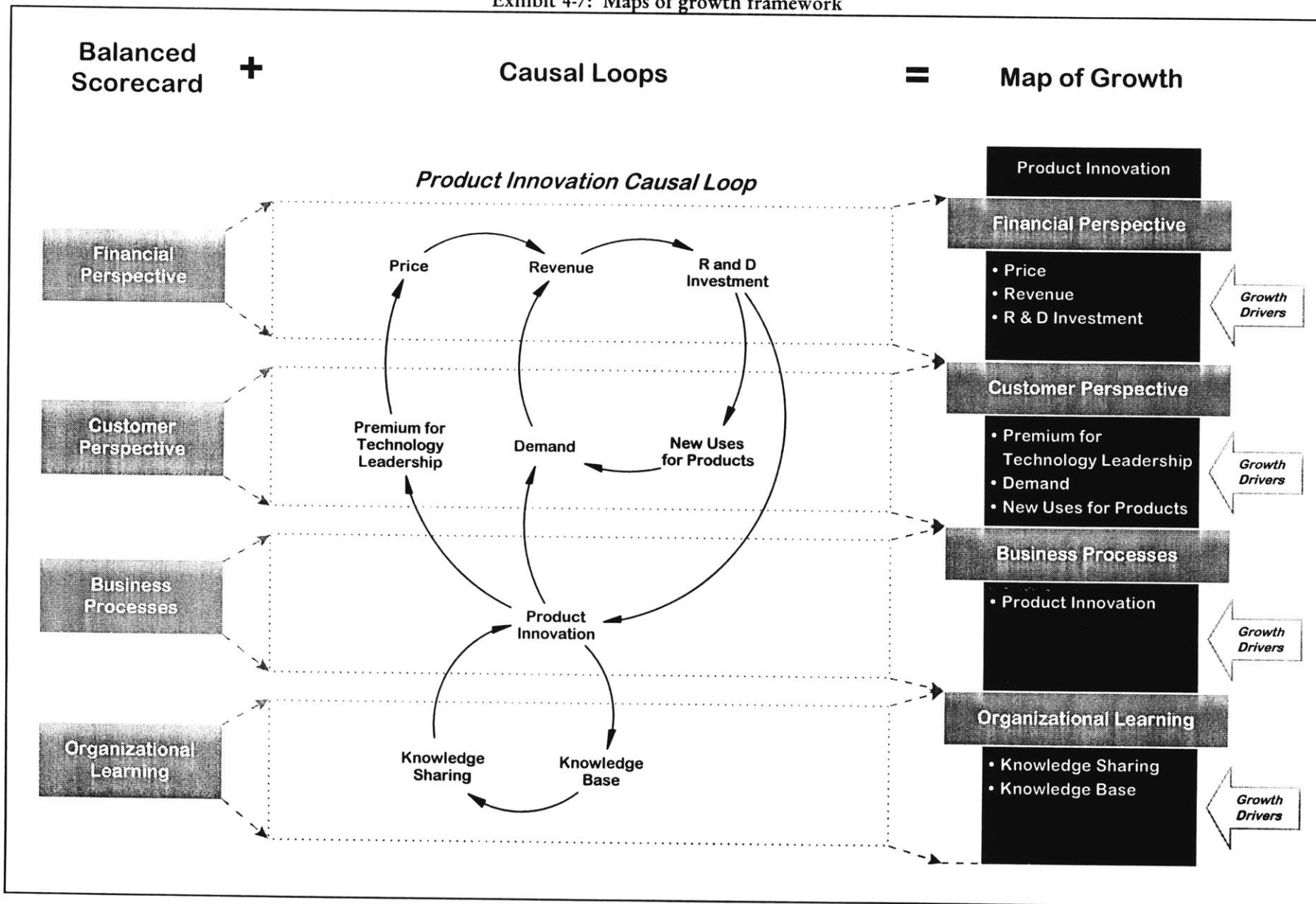
In the next chapter we identify the main growth processes experienced by firms. Using data collected from the literature review and from the previous two frameworks, we drew a series of cause and effect relationships that link what we believe are the main drivers of growth. We call these cause and effect relationships *Maps Of Growth*. Maps of Growth are useful for studying the relationship between key growth drivers, the firm's growth strategy, growth limits, and the measures required to track and reward the accomplishment of such strategy. These maps also help to understand the Key Business Processes and therefore better align the strategic process with the reward system and the key business measures.

Elements of the Balanced Scorecard framework helped us to characterize the growth drivers in our Maps of Growth by associating them with the four perspectives originally defined in the Balanced Scorecard. For each map of growth, we systematically assessed the relative importance of each growth driver, and decided to which of the four perspectives of the Balanced Scorecard each driver belonged (see the Maps of Growth matrix, Exhibit 4-7).

Finally, we put the general maps in order through the value chain so as to facilitate identification. For managers, it is useful to identify which Maps of Growth apply to their firm and industry. Having identified the applicable maps, a manager can decide on the correct set of measures that applies to the company's unique circumstances. Our goal is to encourage consideration of the dynamics of business and growth, the relationship between cause and effect, and the choice of a measurement system that will match strategy with reward.

In Chapter 5, we present five specific examples of this process as it was applied to five high-growth companies. We began by interviewing management from each company. Then, drawing on the general maps, we devised a set of specific maps of growth for each company. These maps illustrate key business processes and cause-and-effect loops that are unique to the company. We believe that identifying these unique processes and growth drivers, and uncovering cause-and-effect loops (positive and negative), can build a deeper understanding of business dynamics and success factors for each company ultimately resulting in a strong competitive edge for the company.

Exhibit 4-7: Maps of growth framework



# CHAPTER 5

## GENERAL MAPS OF GROWTH

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### INTRODUCTION

In Chapter 4 we introduced a framework to analyze the growth processes in companies - the Maps of Growth (see Exhibit 4-7). In this chapter we will describe 16 Maps of Growth represented by a number of growth drivers or variables and their links (symbolized by arrows). These growth drivers could be categorized under the appropriate perspective within the context of Kaplan and Norton's Balanced Scorecard. Using this concept, Exhibit 5-20 helps us to perform an assessment of the growth drivers for each Map of Growth.

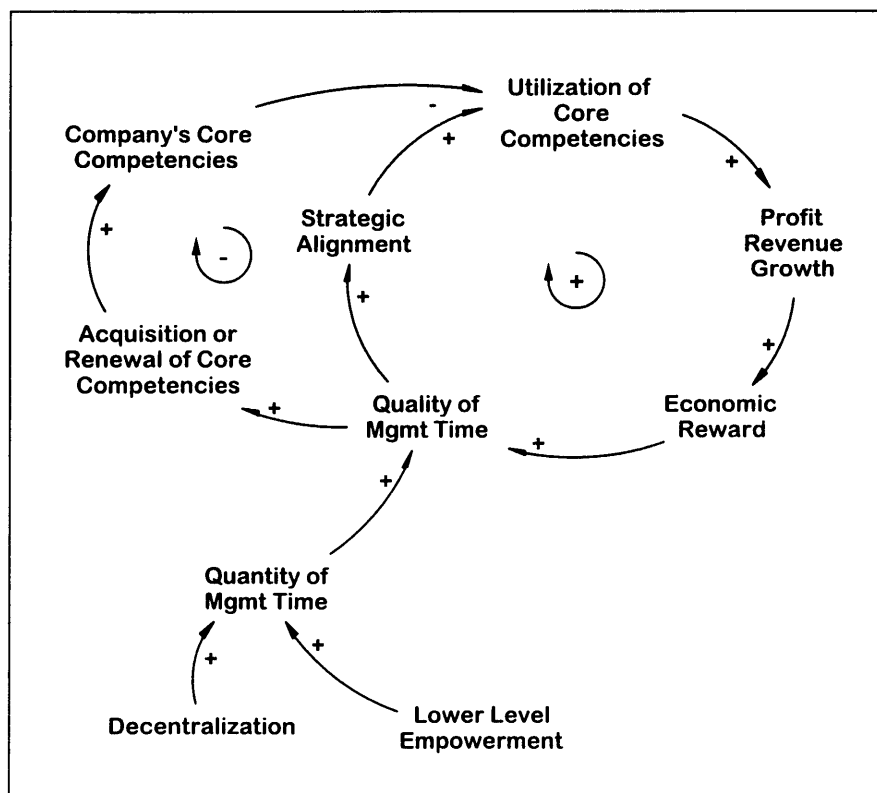
For a general overview of the Maps of Growth, Exhibit 5-21 at the end of this chapter provides a summary of their main features. The exhibit contains a description, the main drivers, limits to grow, and examples for each of map type. Maps of Growth, both throughout this chapter and in the Growth Matrix were arranged following Porter's (1985) Value Chain (see Exhibit 5-19). An in-depth description of the Maps of Growth follows.

#### 1. **Growth Through Strategic Alignment**

Every company periodically faces the challenge of designing its business strategy. The process is oriented toward placing the company in a better competitive position. If management in charge of strategy is rewarded based on utilization of the company's unique competencies (also referred as core competencies) then a sustainable growth circle is initiated.

According to Mark Taylor, Core Technology Manager for Corning, people who identify a better way to utilize a core technology are rewarded with promotions and/or one-time cash rewards. By increasing the use of core technologies, Corning can leverage existing technologies in more products thus reducing unit R&D costs associated with bringing a new product to market. New product introductions increase revenues and lower unit costs to create a competitive advantage for the company which, coupled with more revenues, lead to profit growth. Through a reward system that depends on profit growth, managers are motivated to find new applications for their existing technologies. This set of relationships is illustrated in Exhibit 5-1.

Exhibit 5-1: Strategic Alignment Map



*Note: The most valuable assets of a company are competencies that distinguishes it from competitors. This map illustrates how with the proper reward system, management is motivated to align the company's strategy with a more efficient use of its core competencies, therefore generating growth through differentiation from competitors. Also in the map, it is shown that the limit to the efficient use of core competencies is given by the limited time that managers can devote to establishing company's strategy.*

The previous exhibit presents how the use of existing core competencies affect profit growth. Another way to obtain the same result is the acquisition of new competencies and their successful integration into the company. Without integration, the company cannot absorb the new competency and could lose its investment. This represents a strong negative loop that acts as a limit to the growth of the company. In a significant number of mergers and acquisitions, integration of new competencies is never achieved, and the market responds by downgrading the value of the acquirer. Healy, Palepu and Ruback conclude:

.... merged firms have significant improvements in operating cash flow returns, resulting from increases in assets productivity relative to their industry. These improvements are particular strong for transactions involving firms in overlapping businesses. Post-merger cash flow improvement do not come at the expense of long-term performance, since sample firms maintain their capital expenditures and R&D rates relative to their industries after the merger. Finally, there is strong positive relation between post-merger increases in operating cash flows and abnormal stock returns at merger announcements, indicating that expectations of economic improvements explain a significant portion of the equity revaluations of the merging firms.<sup>1</sup>

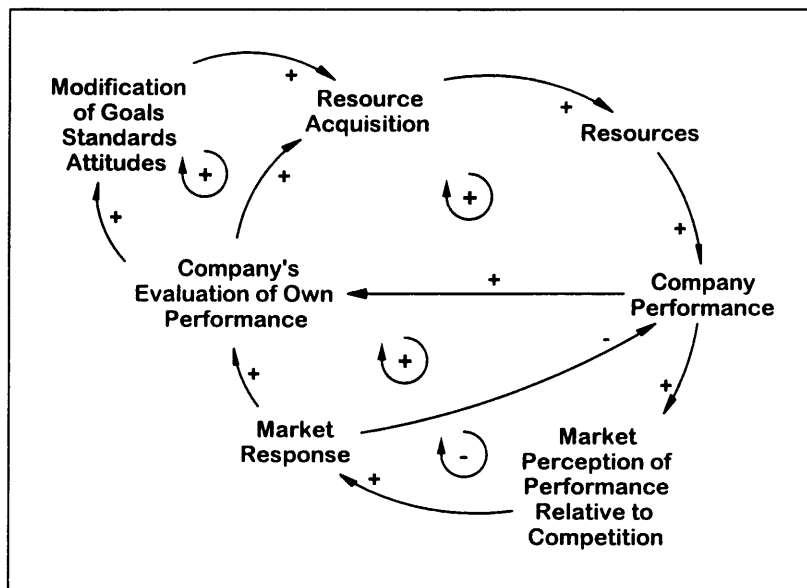
Since critical projects that involve acquiring or renewing core competencies often require significant time from top management, limits to growth arise due to lack of quality time from management. Companies have two options to overcome this limitation. First, under the same organizational structure, companies can broaden the decision-making base toward lower management layers (i.e., delegating power). Second, by changing the organizational structure, companies can decentralize their decision-making process by creating independent business units that have the power to control their own growth strategies (e.g., ABB, Johnson & Johnson).



## 2. Growth Through Resource Acquisition

Lyneis<sup>2</sup> suggests that company performance is determined by the way in which resources are acquired and allocated in the firm. The perception of the company's performance derives from two different sources: first, market response to performance compared with the competition, and second, the company's own perception of its performance as measured by internal parameters. These relationships are shown in Exhibit 5-2.

Exhibit 5-2: Resource Acquisition Map



*Note: The amount of resources that a firm has determines the relative firm's performance; the company's performance perceived by the market leads to a positive response in the form of more orders or negative response in the form of complaints. At the same time, the goals, standards and attitudes a company selects for itself, affect its market perception and response. In this way, the resource acquisition policy of the firm is modified as a result of the market response to the previous set.*

However, the difficulty of establishing resource policies is greatly increased by the number of resources or when one resource can be used to determine different elements of performance.

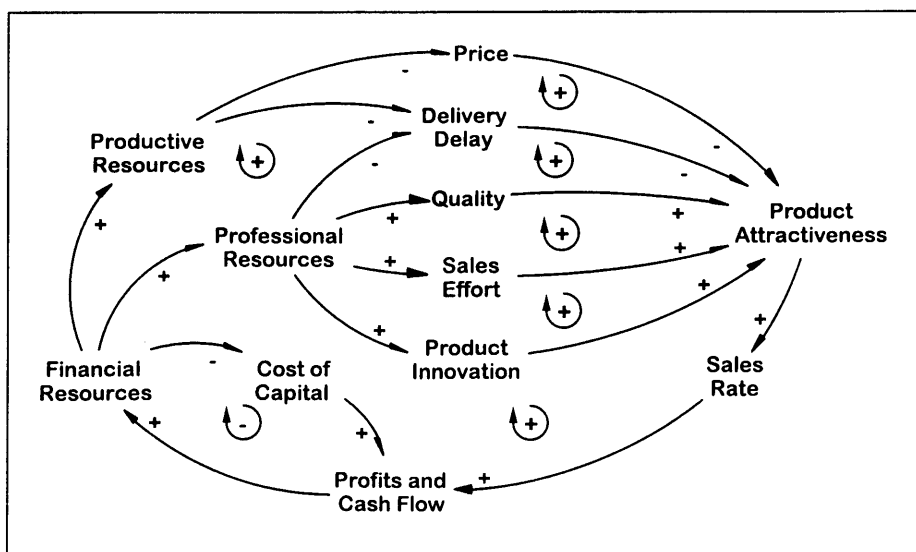
### 3. Growth through Resource Allocation

Interactions between the company and the market determine the company's resource allocation policy (see Exhibit 5-3). This interaction was described in Forrester's corporate growth study<sup>3</sup> and is further explained below:

The company acts on the market through sales force effort. It delivers a product flow. In addition, there are a number of information flows which describe the nature of the company products and services. One of these is delivery delay. Customers are interested in availability of the product, and customer inclination to order depends on the waiting time for delivery. Likewise the market responds to product quality and to price. The product newness ratio defines the degree of innovation in the product and measures the product differentiation from competition. Products which are too new may find an unreceptive and unready market. Products which are too old will encounter more difficult competition.

Flowing from the market to the company are of course streams of orders. But there are other very important, but much less tangible, variables. The market has certain reaction to price, quality, delivery delay, and product newness. These streams of information, tenuous though they may be, are guiding inputs to the company in determining its allocation of resources to the creation of those products characteristics that flow from company to market.<sup>4</sup>

Exhibit 5-3: Resource Allocation Map



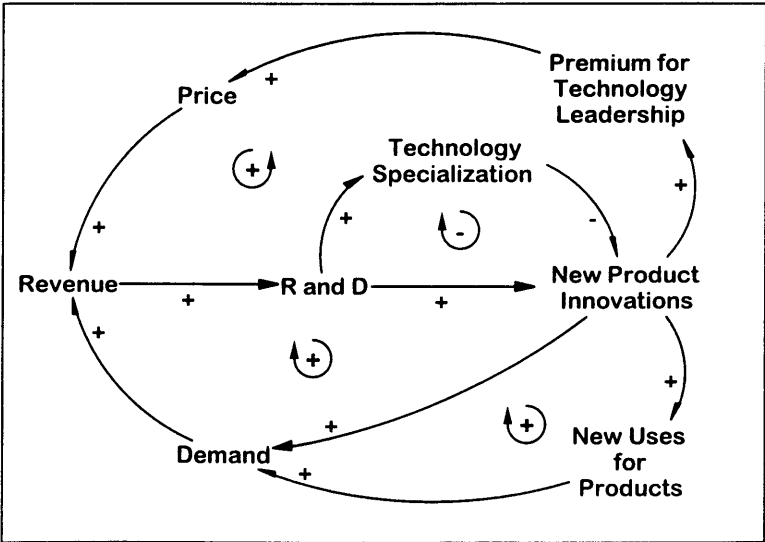
Source: Lyneis (1975)

#### 4. Growth through Product Innovation

Timing of a new product introduction to market can have a significant impact on lifetime profits relative to a competitor's introduction. Introducing a new product six months earlier than a competitor yields three times higher profits over the life of the product; conversely, being late to market by the same period can lead to zero profit.<sup>5</sup>

In addition, a fast development cycle also produces a technological edge over competitors. This edge creates a significant performance gap over time, to the extent that customers can discern differences in performance. In other words, a faster rate of product introduction to market creates a superior product over time. This product superiority enables the producer to command a premium price in the market which leads to higher profits. The product innovation map is an important growth driver for highly innovative companies (see Exhibit 5-4).

Exhibit 5-4: Product Innovation Map



*Note: As shown above, the market pays a premium for leading technologies, which in turn generates more revenues and profit, which can be invested in more R&D, which in turn enhances the technology leadership image of the company. New products increase the product portfolio of the company which has a positive impact on market demand and revenue. Also, new products often suggest new uses and applications for the same product thereby enhancing the attractiveness of the product which again increases demand and revenue.*

The high profitability realized from new products can be explained by two factors: low price sensitivity on the part of early adopters and initial monopolistic rent (Nagle and Holden, 1995). The price sensitivity of early adopters was explained earlier as the premium price that a buyer is willing to pay for technological innovations.

The initial monopolistic rent factor plays a role during the product introduction stage. At this stage the product does not face competition and it can take advantage of the market imperfection or anomaly, thus allowing companies to enjoy monopolistic price policies. When a new product is perceived by customers as a foreign concept, the product is considered an innovation. Not every product is an innovation. For example, a technological breakthrough aimed at reducing the production costs of an existing product, or improved benefits offered by an existing product, are not considered innovations but rather product differentiation. In these examples, the initial product introduction has already accomplished the educational process of the consumer.

#### **Pricing the Innovation for Market Development and Growth**

The diffusion theory, based on the number of early adopters, quantifies the degree of market penetration a particular product has achieved. At the same time, the number of early adopters is a function of pricing policy, word of mouth, and marketing expenditures. Therefore, pricing is one of the policies we have to carefully assess in order to get the desired early adopter's target.

Before selecting a pricing strategy corresponding to a product strategy, a company should consider the following questions about the market and its capabilities:

- Is there a market segment that desires unique product benefits and is willing to pay premium prices for them?
- Does the firm have the requisite distinctive competence to produce and market a differentiated product?
- Is the market sufficiently price sensitive to produce significant cost economies?
- Is the firm willing to commit the resources and bear the risk necessary to see through a cost leadership strategy until it pays off?
- Are there cost advantages that small-share firms can exploit?
- How much product specialization will the market pay for?
- How much product specialization will the market sacrifice to attain the lowest price?

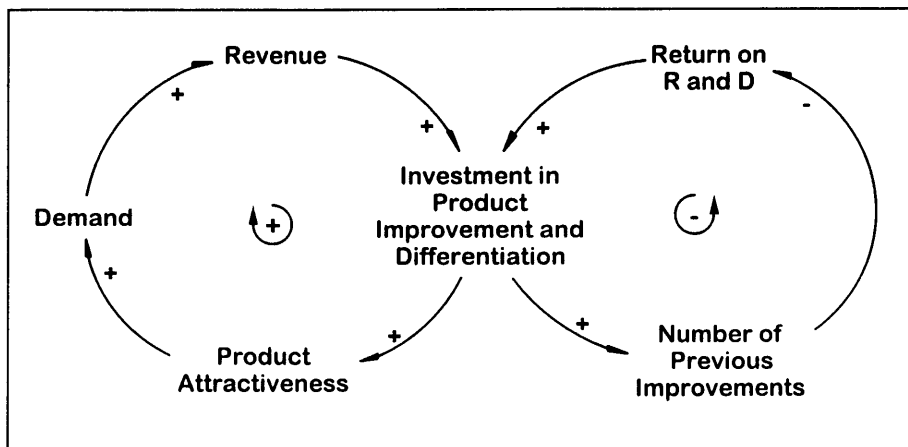
Rarely is a pure differentiated product strategy or a pure cost leadership strategy viable. What distinguishes the strategies of firms within a given industry is not their purity but their emphasis on price or product differentiation relative to the strategy of competitors. A successful strategy involves a mix of price and product features, including the rest of the elements of the marketing mix, that corresponds to the demand of some segment of the market. Almost any product can be slightly differentiated in some way that will make otherwise price-sensitive buyers willing to pay at least a small price premium. (Hall, 1980)

## 5. Growth through Product Improvement and Differentiation

Grant describes how product differentiation can limit price competition and result in high margins for producers:

The more similar the offerings of rival firms, the more willing are customers to substitute between them and the greater the incentive for firms to cut prices in order to expand business. Where the products of rival firms are virtually indistinguishable, the product is a commodity, and the sole basis for competition is price.<sup>4</sup> By contrast, in industries where products are highly differentiated, price competition is limited by customers unwillingness to shift their purchases simply on the basis of small price differentials. Even though these industries may comprise many producers, lack of price competition can result in high margins.<sup>6</sup>

Exhibit 5-5: Product Improvement and Differentiation Map

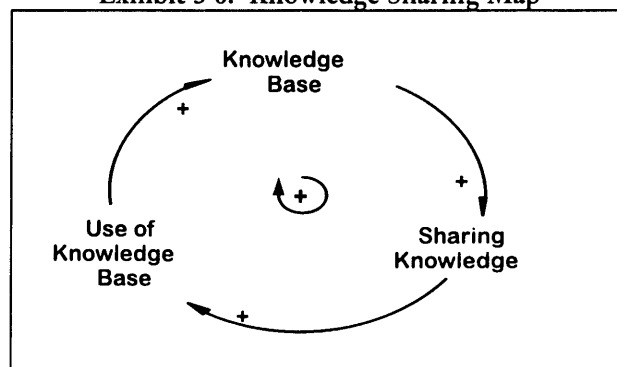


*Note: Product improvement and differentiation can generate high margins for companies by diminishing price competition. The limits to this map of growth include the decreasing returns that R&D generates when the number of improvements or differentiating features increase.*

## 6. Growth through Knowledge Sharing

The sharing of knowledge among employees, suppliers, and buyers promotes new uses for accumulated knowledge in a company. When such knowledge is used in new situations, even more knowledge is generated. Greater knowledge of markets, customers, products, and best practices in the company's industry enhances the firm's performance and success. If a link between knowledge sharing and performance enhancement can be seen, it is easier for managers to introduce alternatives for knowledge sharing. Once new alternatives are offered in an organization, this powerful reinforcing loop can be closed, as shown in Exhibit 5-6.

Exhibit 5-6: Knowledge Sharing Map



*Note: As knowledge of the market, customer, internal practices, etc. grow and they are shared in response to new challenges, organizational learning grows exponentially. Therefore, more cost and market-efficient responses are delivered thus fueling company growth in sales and profits.*

Sometimes it is difficult to capture and share knowledge within a company. Barry Harrington, senior partner of Bain & Company, explains how challenging it was to find relevant experience recorded in the company's presentations. For each 100 presentations that were produced by Bain & Co. consultants, only 20 were useful. Of those 20, only 5 were made accessible on the computer; 2 were actually understandable by other consultants, and less than one was actually relevant to a new case or client. With such

dismal beginnings, the company went on to develop an innovative way of sharing the knowledge available among its many employees and distributing it for further use and application. They created a knowledge database that contains the description of a specific situation, objectives of the customer, the approach taken by consultants, and results. Most importantly, it includes the names and locations of the case team members.

While implementing their knowledge network, Bain & Co. identified seven barriers to the implementation of a knowledge network:

- time invested to date,
- uncertainty about what information will be needed,
- local incentive systems in conflict with global knowledge network values,
- personal achievement norms not consistent with egalitarian nature of the network,
- legal constraints of proprietary information,
- walls created to protect other clients in direct competition, and
- critical mass of information initially required.

Each one of these barriers can prevent the successful launching of a knowledge network, according to Harrington.

After substantial effort to reach critical mass in the knowledge database, Bain & Co. allowed company-wide access to the innovative knowledge network. The company's knowledge-sharing inquiries have since increased by a factor of 30.

7. Growth through the Loyalty Effect

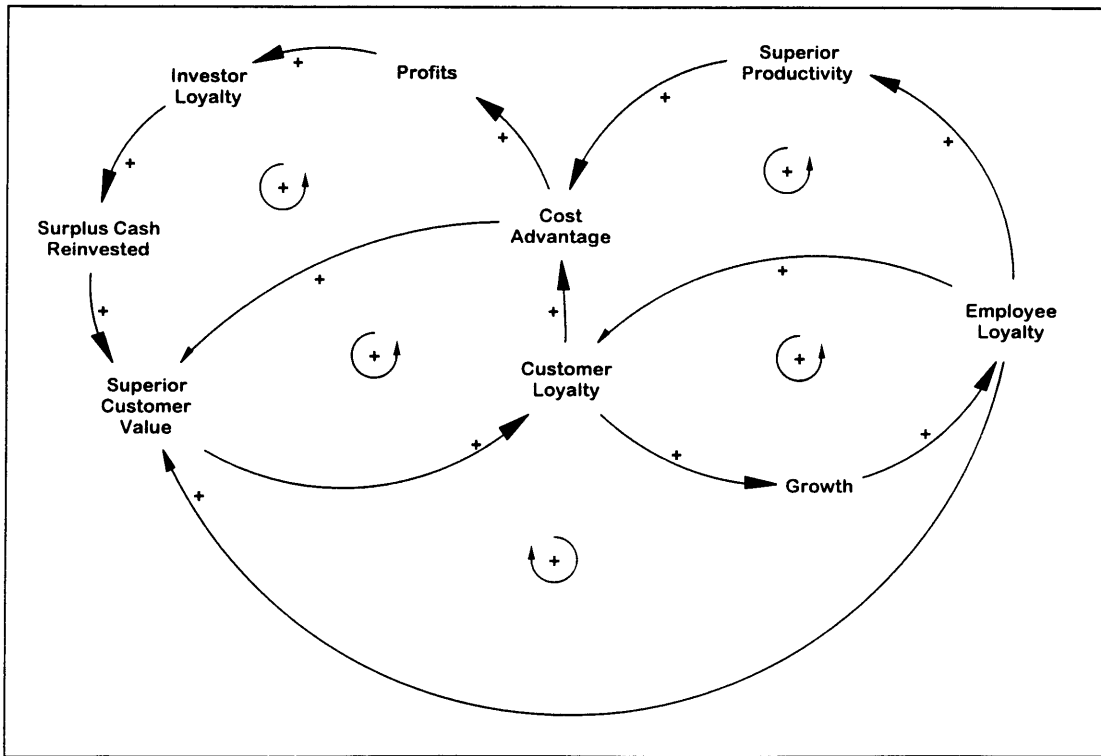
Loyalty can promote growth on two distinct fronts: customer loyalty, and employee loyalty (see exhibit 5-7.)

With regard to customer loyalty, Reichheld explains:

Loyalty is inextricably linked to the creation of value as both a cause and an effect. As an effect, loyalty reliably measures whether or not the company has delivered superior value: Customers either come back for more or they go elsewhere. As a cause, loyalty initiates a series of economic effects that cascade through the business system.<sup>7</sup>

When a company creates superior value, customers will repeat purchases and increase referrals.

Exhibit 5-7: Loyalty Effect Map



Source: Reichheld (1996)



Superior value also permits a company to select the most profitable customers which in turn generates profit growth. Sustained growth attracts the best and brightest people who can create superior value for their customers. Successfully growing companies are extremely clear about who they are, what they stand for, and what they are trying to achieve. Employees who are unwilling or unsuited to meet these standards do not last long in the company.<sup>8</sup> What happens in such companies is that they retain the best and brightest people who identify with the company's values and culture and are therefore strongly committed to the company. This generates strong loyalty among employees.

Employee loyalty fosters learning, thus making employees more productive and enhancing customer value. Gains in productivity generate more profit that can be used to reward employees and reinforce employee loyalty.

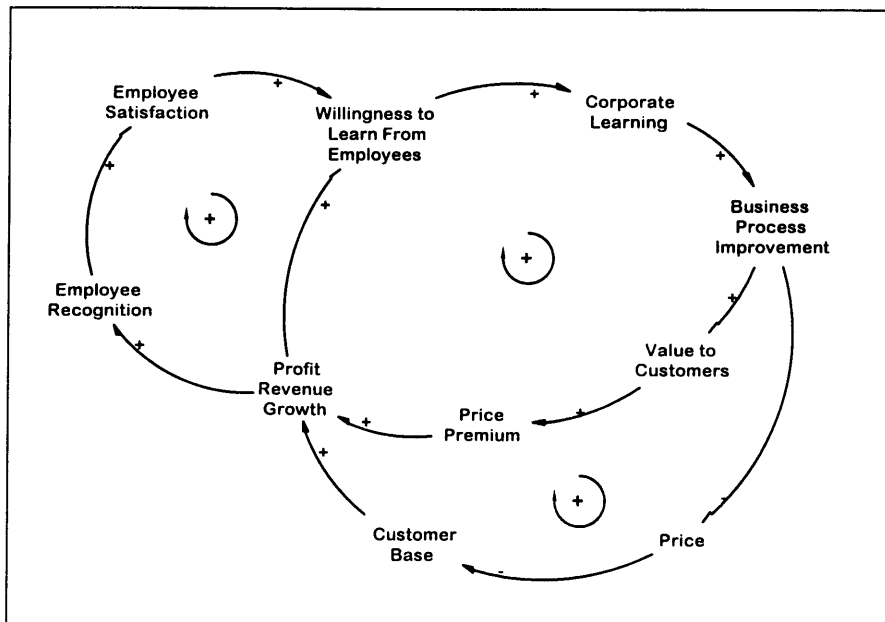
The combination of productivity gains with superior value to customers creates a sustainable cost advantage that leads to profit growth. This combination attracts new investors that identify with the company's management and are willing to reinvest more cash to increase the company's value-creation potential.

## 8. Growth through Learning from Employees

Building an organization that is capable of integrating and transmitting employee knowledge to the rest of the corporation is right near the top of today's corporate agenda. Organizations that are capable of learning and growing (analogous to humans) or that become adaptive (like natural species) are necessary in order to deal with the challenges posed by information-based competition in today's information age. Senge calls this type of organization "the learning organization"<sup>9</sup>; Quinn calls it "the intelligent enterprise"; and others refer to the "adaptive organization".<sup>10</sup>

Intel is a good example of successful mastery of this source of growth. It has developed a culture of "open space" offices with no doors, and "constructive confrontation" (a communication technique for teamwork based on problem-solving tools<sup>11</sup>), and an ability to integrate cutting-edge product innovation professionals with high-performance production specialists. These results are achieved by small teams integrated by a "vertical mix" of the brightest designers with experienced manufacturing leaders (see exhibit 5-8.)

Exhibit 5-8: Learning by Listening to Employees Map

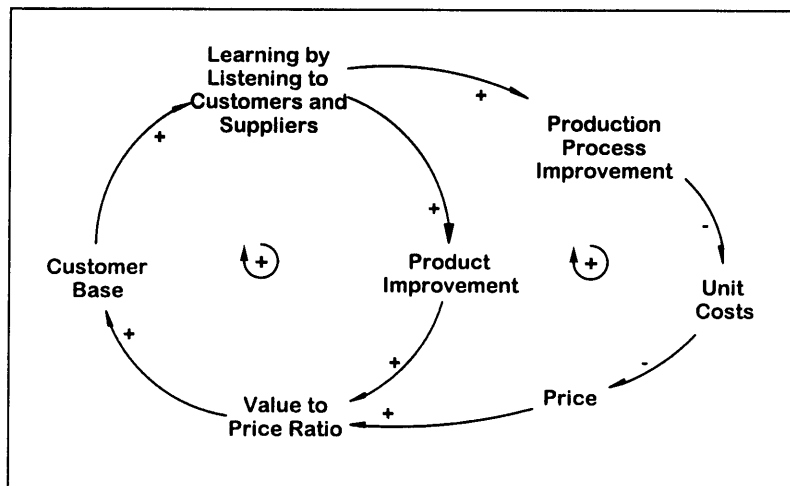


*Note: Incorporating learning from employees - through organizational learning, continuous improvement or total quality programs - increases corporate knowledge that leads to processes and products improvement. These improvements shows up either as costs reduction, or value added products or both. Then, the company is able to growth in profit or revenues, which in turn allows to recognize employees for their contributions.*

## 9. Growth through Learning from Customers and Suppliers

Willingness to learn from customers and suppliers can improve a company's value-to-price ratio and stimulate growth of the customer base. Listening to customers can generate knowledge of product attractiveness and functional usefulness. Attractiveness is a direct measure of how well a company understands its customers' needs. Such understanding can produce suggestions that for product improvement, thereby boosting customer satisfaction by increasing the value-to-price ratio of the product. Greater customer satisfaction generates more loyal customers which will ultimately produces higher sales through repeat purchases and positive word-of-mouth (see Exhibit 5-9).

Exhibit 5-9: Learning from Customers and Suppliers Map



Attention to the usefulness of a product's functionality is a subtler way to improve growth. Understanding what functionality is more highly valued in a product can shift the focus of production from a undistinguished set of functions to a few important functions that will sell more products. The other function may or may not need to be part of the product. They can even be sold as accessories to customers that require such functionality. An improved production process brings unit cost down and eventually prices drop, passing along savings to customers and improving customer satisfaction through a lower

value-to-price ratio.

On the other hand, suppliers can be a valuable source of information about the competition's accumulated experience. By nurturing a learning/listening relationship with suppliers of DRAM equipment, Intel captured most of the experience curve advantages of its larger rivals.<sup>12</sup>

## 10. Growth through Economies of Scale, Scope, and Learning Curve

In 1968, the Boston Consulting Group (BCG) published *Perspectives in Experience*, describing the experience or learning curve. BCG summarized its findings in "*The Law of Experience*":

The unit cost of value added (total cost per unit of production less the cost per unit of production of bought-in components and material) to a standard product declines by a constant percentage (typically between 20 and 30 percent), each time cumulative output doubles.<sup>13</sup>

The main implication of the Learning Curve is that a company's primary strategic goal should be market share and that it should price its products on the basis of anticipated cost. This may not always happen. Benefit gained from learning has the following determinants: it requires a willingness to learn, the capacity for change, reliance on increased dexterity, and the implementation of incremental improvements in organization and coordination.

The experience curve combines cost reduction elements from different sources: economies of scale, learning effect, improved product design and product innovation, capacity utilization, cost of inputs, and residual efficiencies in operating efficiency. These factors are the cost drivers which determine unit cost and the firm's cost structure.

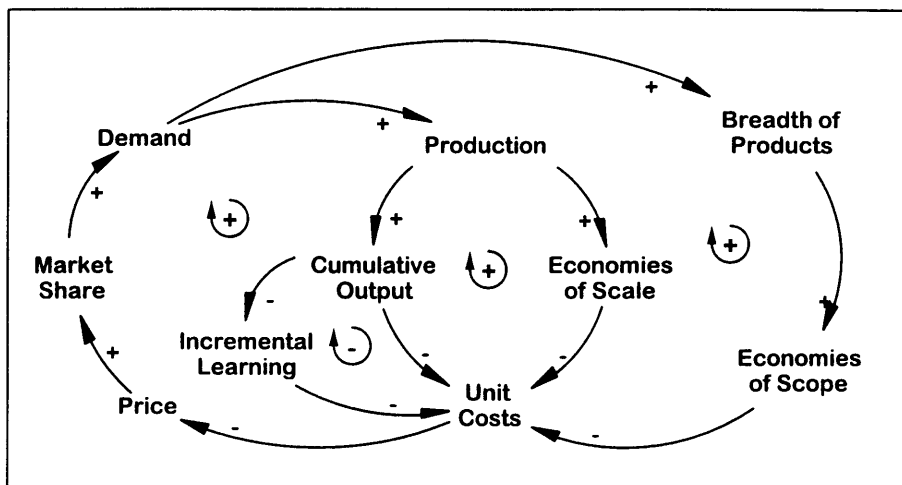
Economies of scale are realized when an increase in the amount of inputs produces more than a proportionate increase in total output (see Exhibit 5-10). Therefore, as the scale of production increases, unit cost falls. The main sources of economies of scale are:

- *Indivisibility*: In some circumstances inputs are not available in small sizes, therefore firms able to amortize over a larger number of units can reduce unit costs.
- *Specialization*: Larger amounts of raw materials allow for specialization of labor (division of labor) or mass production techniques.

- *Technical input/output relationships*: In some cases, increases in output do not mean a proportionate increase in R&D, sales effort, or inventory level. Therefore, this allows a reduction in unit costs.

The same technical input/output relationships apply in the case of economies of scope to explain unit cost reduction derived from a broader product line.

Exhibit 5-10: Scale, Scope and Learning Curve Map



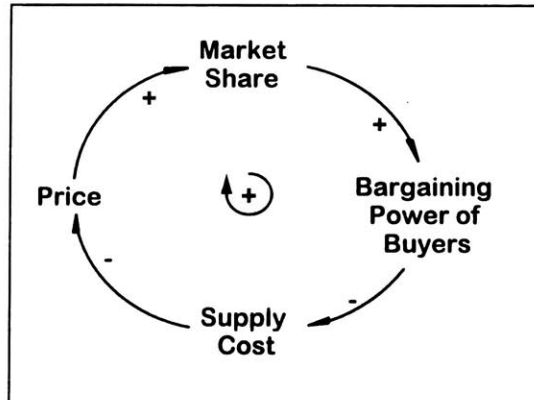
*Note: As demand increases, the breadth of the product line can be expanded without incurring major development and production costs. This leads to economies of scope that reduce unit costs and increase attractiveness of the product line, thus fueling further demand. At the same time, as production increases economies of scale are realized due to, among other things, lower production and raw materials costs. With cumulative output and if learning is realized, companies can gain production experience, process innovation, and improved product design that leads to reduced unit costs. These reductions can be translated to the customers to gain market share. This is also known as Economies of Learning.*

## 11. Growth through Bargaining Power of Buyers

The distribution of profit as a result of a commercial transaction depends upon the relative economic power of the parties, among other factors. The economic power of a buyer is primarily affected by two set of factors:

- *Buyers' price sensitivity*, which in turn depends on the following:
  - The greater importance of an item as a proportion of total costs, the more sensitive buyers will be.
  - The less differentiated an item is, the more willing is the buyer to switch suppliers based on price.
  - The more intensive is competition between buyers, the greater their need for price reduction.
  - The greater the importance of the item to the quality of the buyer's final product, the less sensitive to price.
  
- *Relative bargaining power* (see exhibit 5-11), which depends on the following:
  - Size and concentration of buyers relative to suppliers.
  - Buyers' information about suppliers' products, prices, and costs.
  - Buyers' switching costs.
  - Buyers' or suppliers' ability to vertically integrate.<sup>14</sup>

Exhibit 5-11: Bargaining Power of Buyers



*Note: A buyer's bargaining power increases, pressure to reduce price of the suppliers' products increases, thus decreasing unit price. If buyers translate this savings to their customers, they can increase their competitive position, affecting positively their market share.*

As Buzzell and Gale state in their study of supplying industries, there is a tendency to concentrate purchases, which then leads to decreased prices and profits of supplier (see Exhibit 5-12).

Exhibit 5-12  
Impact of Customer Size and Importance of Purchase

	Price (%)	ROSP (%)
<b>Typical size of customers' purchase</b>		
less than \$1,000	27	10
\$1,000 to \$10,000	22	7
over \$10,000	21	6
<b>Customers' purchase as % of their total purchases</b>		
less than 1%	25	10
1% to 5%	23	9
over 5%	20	8

Source: Buzzell and Gale, 1987

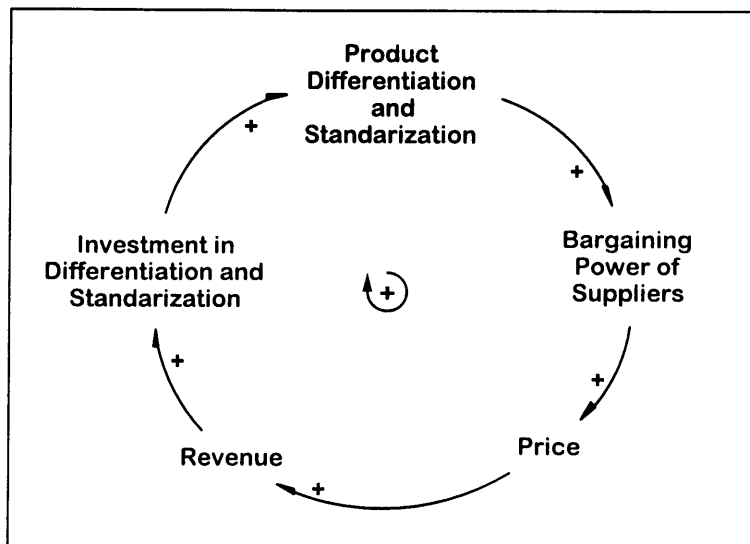


## 12. Growth through Bargaining Power of Suppliers

The factors that affect the bargaining power of suppliers are analogous to those described for buyers. The main factors affecting the bargaining power of suppliers are:

- *Product differentiation*: the more a suppliers' product is different from its competitors, the higher the price they can ask for it.
- *Product standardization*: the more a product becomes a market standard, the less price-sensitive are the buyers.
- *Relative economic power of the parties.* (see Exhibit 5-13)

Exhibit 5-13: Bargaining Power of Suppliers



*Note: When suppliers' products became more differentiated or the market standard, their bargaining power increases. This translates into higher prices that yields an increase in revenues and allow a proportional increase in investment in product differentiation.*

The main limits to an increase in the bargaining power of suppliers are:

- The commoditization of suppliers' products.
- Competition for and limited number of available market standards.
- Limited number of customers.

Buzzell and Gale<sup>15</sup> argue that increasing the concentration of a firm's purchases initially produces economies of purchasing, thus reducing raw material costs per unit. But too much concentration by buyers leads to an increase in suppliers' bargaining power, and therefore a shift in profitability due to reduction in economies of purchase (see Exhibit 5-14).

**Exhibit 5-14**  
**Impact of Suppliers' Power on Profitability**

	ROI (%)	RGS (%)
<b><u>Suppliers concentration: the percentage of total purchases from the three biggest suppliers</u></b>		
<b>Under 25%</b>	<b>21</b>	<b>8.9</b>
<b>25% to 50%</b>	<b>24</b>	<b>9.8</b>
<b>Over 50%</b>	<b>23</b>	<b>8.9</b>

Source: Buzzell and Gale (1987, pp. 56-57)

### 13. Growth through Channel Management

Changing consumer behavior and relative power shifting from manufacturers toward retailers can open a window of opportunity for reaching profitable consumers through new and innovative distribution channels.

*“Sales Channel Management: The Power of Innovation at the Point of Customer Contact”* by Robert Atkins and Andrew Cohen (1994.)

For more and more consumers today, the central question is not what to buy but how to buy it. Companies are jockeying to fulfill consumer demands for convenience and choice - not just price and quality - and in turn business value-added is flowing steadily downstream, away from the factory and toward the point of customer contact. As a result, the way companies select and manage their sales channels is increasingly determining their success in acquiring new customers, retaining existing customers, and, ultimately, generating profitable growth.”

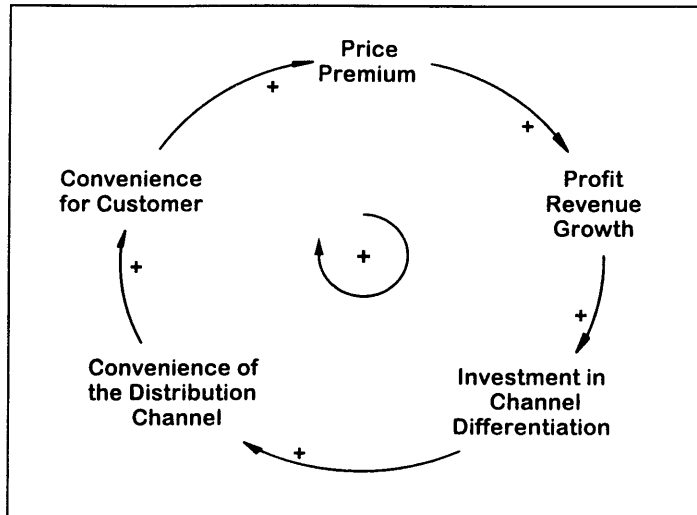
“Innovators in channel management. These companies fall into two categories. First are those whose businesses are, in essence, channels themselves. Second are those that have pioneered new ways of using channels to initiate and cement customer relationships.

“To win in this game, suppliers face several challenges:

- Understanding the sources of change affecting channels decisions,
- Developing sound channel strategies that match channel capabilities to suppliers and customer needs,
- Constructing an infrastructure for motivating and supporting desired channel functioning, and
- Developing a process for the continual modification of channel strategy and mix.”

The main drivers are channel differentiation, innovativeness and convenience, consumer available time for shopping, and relative power of channels and manufacturers. The limits to growth are organizational characteristics of distribution channels, cost structure of the channels, and potential limits to number of customers in each channel (see Exhibit 5-15).

Exhibit 5-15: Channel Management Map



*Note: For consumers, the convenience of the transaction is becoming more important as their time is becoming more scarce. A highly convenient channel can charge a premium for that convenience or can at least gain repeated purchases by clients. This profitable growth in revenues could be reinvested by more differentiation and innovativeness, which in turn, leads to more convenience for customers.*

## 14. Growth through Customer Franchise Management

Customer franchise management is based on the acquisition, development and, retention of profitable customers. This concept, established by Wayland<sup>16</sup>, requires an effective valuation of the customers as if they were long-term assets of the company.

“Customer Valuation: The Foundation of Customer Franchise Management”  
by Robert E. Wayland

“What is a customer franchise? We define it as a portfolio of customers with whom a firm enjoys a privileged relationship and to whom the firm dedicates its efforts for creating and delivering value. When a true franchise exists, the provider and the customer are joined in a mutually beneficial bond. The company uses its superior understanding of its high-value customers to deliver greater value to them and, in turn, it reaps the benefits of a loyal clientele.”

“Customer valuation, which enables customers to be segmented on the basis of their profitability to the supplier, provides a systematic way to identify attractive customers for acquisition, development, and retention.”

“The sources of customer value, since customers make a series of purchases over the course of their lives, include not only the original sales volume, but also the potential for increased sales, for increased margins, for cross-sales of related products, and even for indirect revenues from referrals”.

The main drivers are profit growth and therefore economic reward for the sale force, customer differentiation, shift of the relative power towards customers, and the economics of customer retention.

The main limits to growth through customer franchise management are organizational rigidity - to produce the necessary changes, potential number of profitable customers, diminishing return in sales to profitable customers - when sales forces focus on the second tier of profitable customers and so on, and economics of customer acquisition.

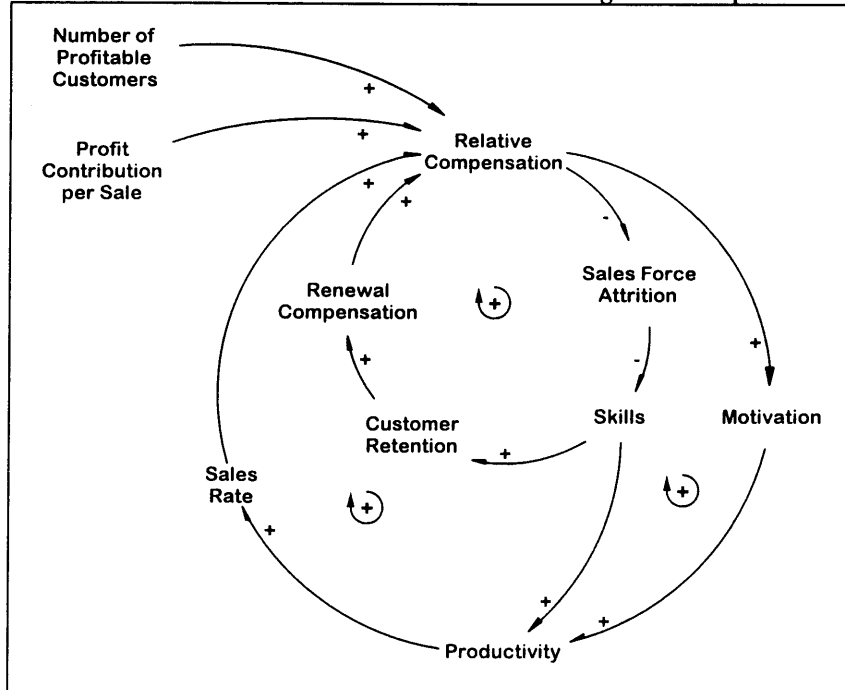
### Contribution of the Sales Force to Customer Franchise Management

Profit contribution per salesperson provides the firm with another alternative to

growth. Using the right compensation scheme for its sales force, a company can effectively increase productivity, skill level, and customer retention while at the same time decreasing attrition (see Exhibit 5-16).

A skillful sales force can identify customer profitability as well as understand their growth potential. Feedback from sales into product development and improvement is important for identifying changes in product use that may drive future demand. Equally important is the management of unprofitable customers. By correctly identifying these customers, salespeople can avoid the illusion that many customers equals more revenue and therefore more profit. For example, if the market price for a commodity type of product is \$40, and the cost to service a customer is \$41 from Plant 1, \$40 from Plant 2, and \$39 from Plant 3, accurate identification of these costs can bring profit or loss to the company depending on from where the product is delivered. If none of the plants can produce and deliver the product at a profit, salespeople can direct customers for that unprofitable product to other suppliers.

Exhibit 5-16: Customer Franchise Management Map



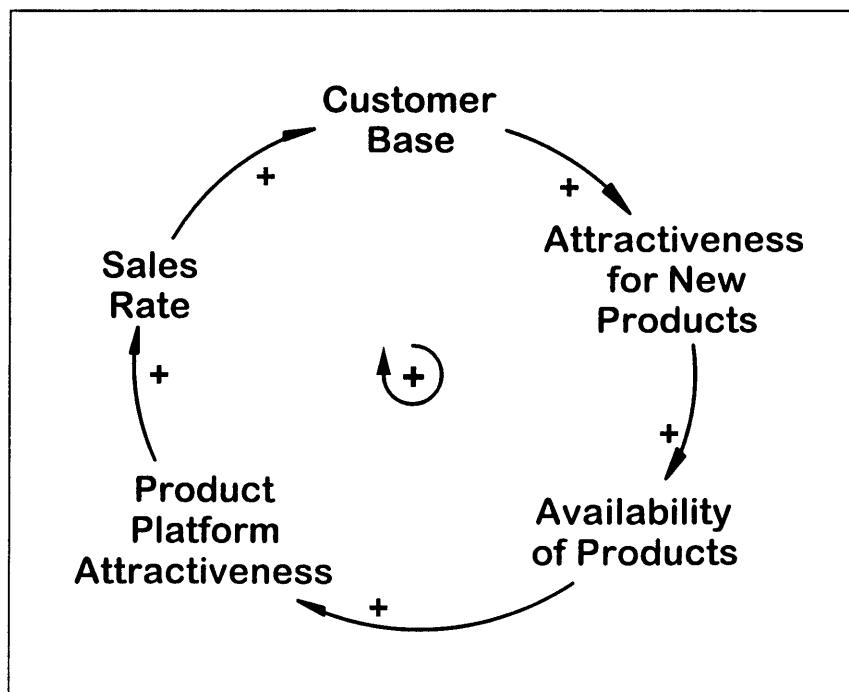
*Note: Since the major impact in customer franchise management is achieved through the sales force, the reward system has to be aimed at retaining and compensating the sales force for acquiring and retaining the most profitable customers. The net result is a drop in the attrition rate of the sales force, which in turn leads to an increase in skills and productivity.*

There are some limits to growing this way. Mainly, there is finite number of profitable customers in each industry segment. Also, the most profitable customers are usually approached first, which means that the next profitable customer will bring less profit to the firm than the previous one. This tends to decrease motivation and eventually growth will slow down.

## 15. Growth through Network Effects

The network effect enhances growth by attracting customers and product developers to the same product architecture. Customers find it attractive (and often reassuring) that a large number of customers and products exist for a particular market. A larger amount of customers means more benefits can be extracted from the network by new customers (e.g., Lotus Notes users). In turn, product developers are attracted to a product architecture because there is already a large base of customers using the product (e.g., applications based on Microsoft Windows) (see Exhibit 5-17). For users of Lotus Notes, purchasing the product is more attractive because there is a large number of other users they can reach using the product. For Microsoft Windows applications, product developers see a large customer base already installed to which they can sell their new products.

Exhibit 5-17: Network Effect Map



Source: Achi, Doman, Sibony, Sinha, and Witt (1995, p. 8)



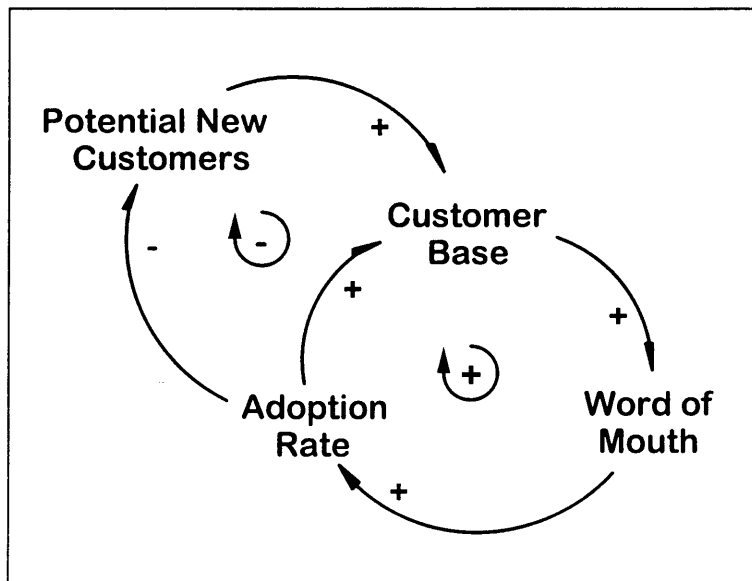
Markets dominated by network effects pose some risk. Once the customer base reaches a critical mass, products are perceived as standards, which causes a dichotomy as they emerge. On the one side, customers are attracted to innovations and are usually eager to try to new products. However, a lock-in exists after a customer has adopted a standardized product. Better products may be emerging in the market that fill a market niche need, but since the innovation has not reached standardization, customers will not purchase it.

## 16. Growth through Word of Mouth

From a marketing perspective, innovation requires educating the customer. An important aspect of the educational process is called *information diffusion* (Lilien, et al., 1992). Derived from this concept is the theory of the *diffusion of innovations* that addresses how a new idea, concept, product, or service is assimilated into a social system over time. This topic has been studied in depth by scientists from different disciplines, and is about how individuals react to new ideas and products and explains growth through the adoption rate.

The *diffusion process*<sup>17</sup> is the spread of an idea or the penetration of a market by a new product from inception to users or adopters. The *adoption process* includes all the steps an individual goes through from the time he hears about an innovation until his or her decision to adopt and use that innovation regularly (as illustrated in Exhibit 5-18). The response of an individual to new ideas is called *innovativeness* (Midgley & Dowling, 1978).

Exhibit 5-18: Word of mouth Map



Individuals are classified into different adopter categories on the basis of their innovativeness. They can also be classified by their influence on others. Opinion leaders are those individuals from whom others seek information and advice and who therefore influence the action of later adopters. These concepts have important implications for modeling the adoption process, and therefore the growth process.

Paich and Sterman<sup>18</sup> describe the key features of market behavior for new products based on diffusion models. A summary of their description follows:

- Word of mouth generates demand, which increases the customer base thus generating more word of mouth.
- Product price affects the number of potential adopters
- Marketing expenditures increase the fraction of potential customers adoption. High marketing expenditures generate diminishing returns
- A fraction of the customer base repurchase the product to replace worn or obsolete units.
- Total orders for the product are divided between the firm and the competition in proportion to the attractiveness of each product.

## CONCLUSION

We have seen a series of paths in which corporations can grow, but this is not a comprehensive list. We have presented a framework for analyzing the proposed ways that growth can occur, along four different steps: first, to recognize the growth drivers for each growth map; second, to connect the drivers using a cause and effect criteria; third, to relate each growth driver to a metric system; and fourth, to track these measures over time to assess the effect of a variation of any one of them on the rest.

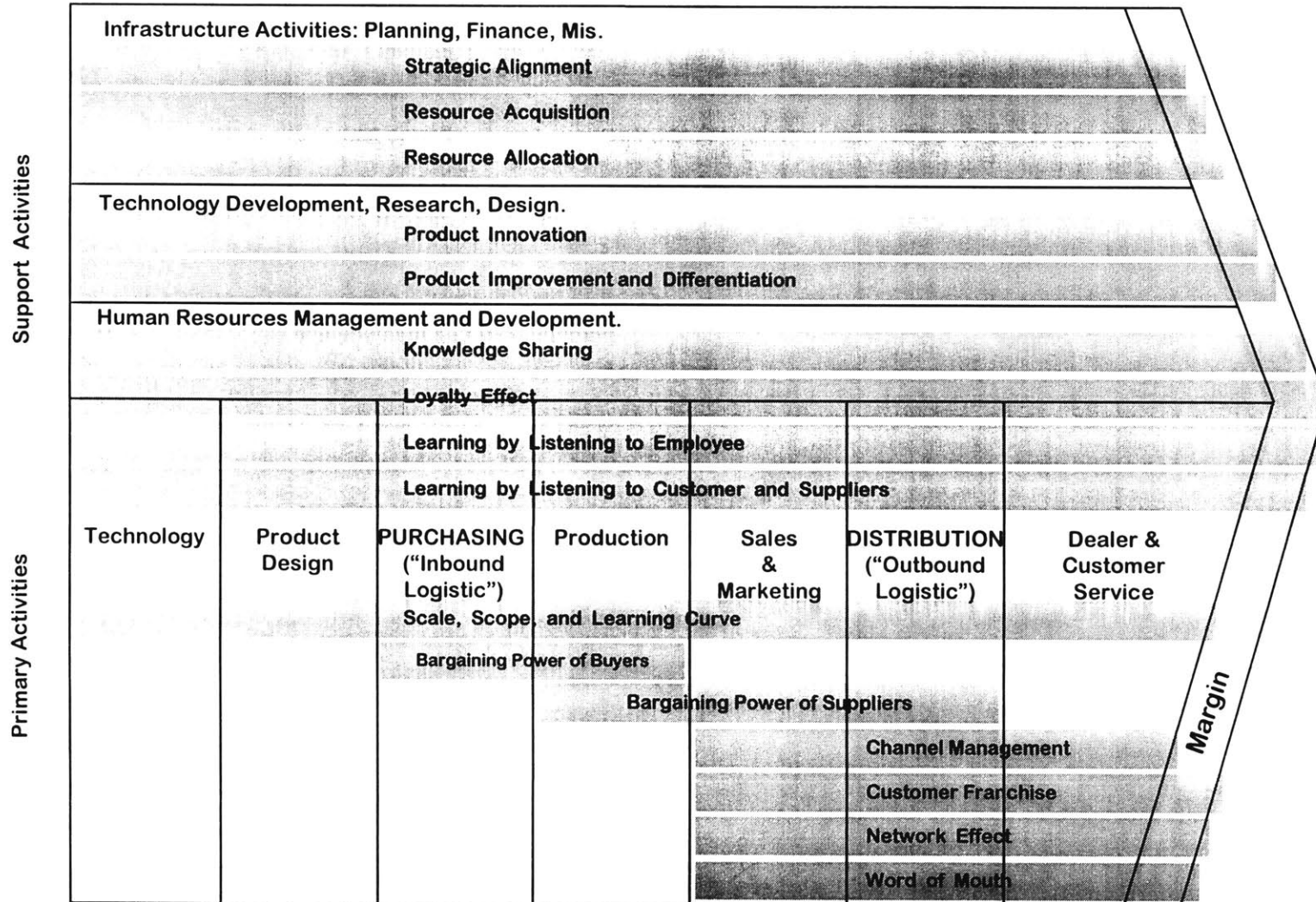
The first two steps conform to causal loops. The third and fourth steps are integrated with the causal loops in the Maps of Growth framework (see Exhibits 4-7 and 5-20), where each driver is categorized using one of the four perspectives of the BSC. The matrices can help us follow each driver's evolution over time and set goals for them once we have understood their intrinsic relationships.

In the sixteen Maps of growth we concentrated on the reinforcing effects on growth provided by each of the causes studied. It is also important to consider the negative loops that limit growth. While the study of negative loops is beyond the scope of this thesis, it is essential to have the complete picture of the cause and effect relationships affecting the growth processes.

Another important effect that is important (and not considered in this thesis) is the relative behavior of variables with respect to growth. For example, when investment in plant improvement goes up, growth goes down in the short run because part of the company's profit is being used for the improvements. Eventually, profit will grow due to production efficiencies that will lead to lower production unit costs in the long run. In system dynamics, this effect is known as "worse before better."

Exhibit 5-19: Value chain positioning

## Positioning the Maps of Growth in the Value Chain



Source: Adapted From M. E. Porter, Competitive Advantage, Free Press, 1985, P. 37.

Exhibit 5-20

## Maps of Growth

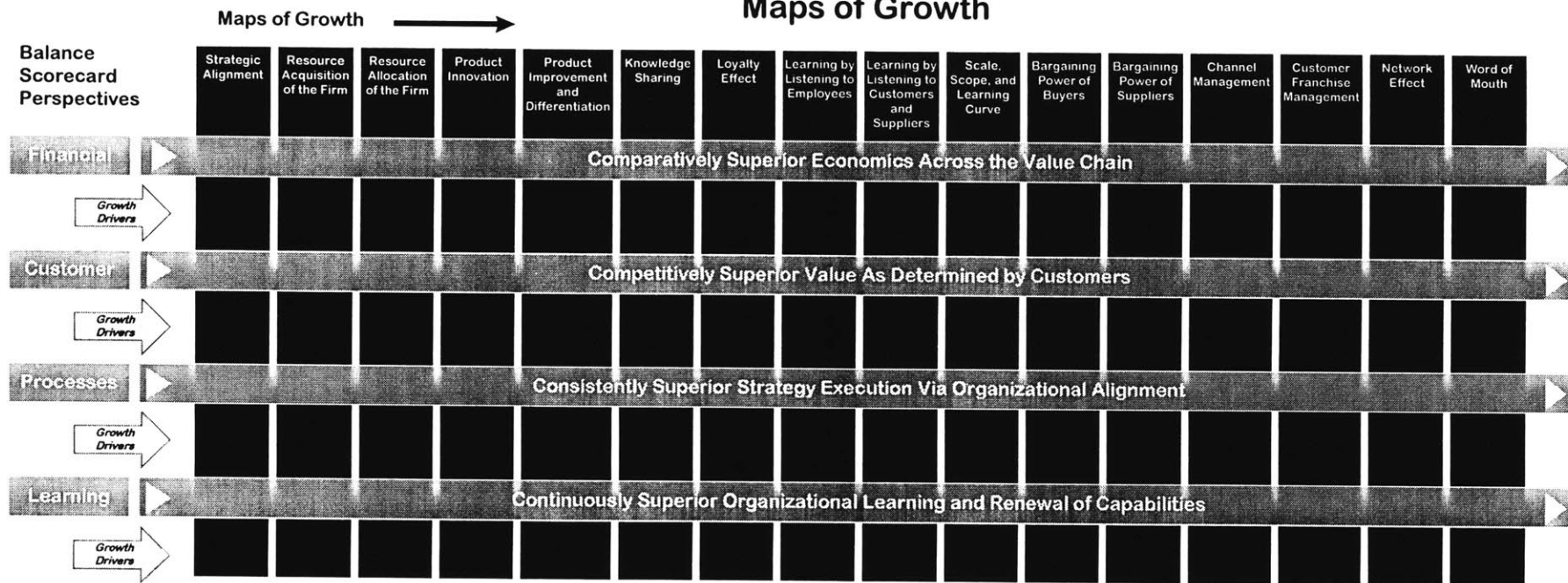


Exhibit 5-21: Maps of growth summary

Map Name	Description	Example	Drivers	Limits
Strategic Alignment	Growth is achieved through alignment between strategy and core competencies of the firm.	<ul style="list-style-type: none"> <li>• Core competencies generate growth that translates into financial rewards to stimulate alignment of strategy with these competencies.</li> </ul>	<ul style="list-style-type: none"> <li>• Reward system</li> <li>• Unique competencies</li> </ul>	<ul style="list-style-type: none"> <li>• Top management's quality and quantity of time</li> </ul>
Resource Acquisition	The firm's observed performance lead, through corporate policies, to acquire resources aimed to improve performance.	<ul style="list-style-type: none"> <li>• Consulting firms based on measurements of service quality to clients hire more or less consultants</li> <li>• Corning according to R&amp;D competencies acquire complementary marketing resources</li> </ul>	<ul style="list-style-type: none"> <li>• Reward system for better acquisition of resources</li> <li>• Performance measurement system</li> <li>• Market response, mainly through sales and complaints</li> </ul>	<ul style="list-style-type: none"> <li>• Resources available</li> <li>• Top management time to decide acquisitions</li> </ul>
Resource Allocation	The firm's resources affect the firm's performance and therefore its growth.	<ul style="list-style-type: none"> <li>• 3M and Corning have a resource allocation system for new products that simulates an open market competition system</li> </ul>	<ul style="list-style-type: none"> <li>• Reward system for better utilization of resources</li> <li>• Performance measurement system</li> </ul>	<ul style="list-style-type: none"> <li>• Resources</li> <li>• Delivery delay</li> <li>• Price</li> </ul>
Product Innovation	Price premium commanded by technology leadership drives motivation for new product development.	<ul style="list-style-type: none"> <li>• 3M</li> <li>• Hewlett Packard</li> <li>• Corning</li> <li>• Intel</li> </ul>	<ul style="list-style-type: none"> <li>• Technology leadership</li> <li>• Entrepreneurship</li> <li>• Rewards for innovativeness</li> <li>• Resource sharing</li> </ul>	<ul style="list-style-type: none"> <li>• Technology specialization</li> <li>• Potential applicability of innovation</li> <li>• Aging effect</li> <li>• Cumulative number of innovations</li> <li>• Resources</li> </ul>
Product Improvement and Differentiation	Differentiation provides uniqueness to the firm	<ul style="list-style-type: none"> <li>• HP printers</li> <li>• Intel microprocessors</li> <li>• Microsoft OS</li> </ul>	<ul style="list-style-type: none"> <li>• Rewards for differentiation</li> <li>• Resource sharing</li> </ul>	<ul style="list-style-type: none"> <li>• Number of major process innovations</li> <li>• Diminishing return on R&amp;D</li> </ul>

Exhibit 5-21: Maps of growth summary (continued)

Map Name	Description	Example	Drivers	Limits
Knowledge Sharing	As knowledge bases grow and they are shared in response to new challenges, organizational learning grows exponentially. Knowledge sharing promotes new and more efficient uses of accumulated knowledge.	<ul style="list-style-type: none"> <li>• Intel, Corning, 3M, and HP integrate people from different areas so they can share and use their knowledge</li> <li>• In credit card companies, utilization of knowledge about customer behavior generates more knowledge and better product offerings.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge sharing</li> <li>• Efficient utilization of resources</li> <li>• Appropriability of knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Information systems</li> <li>• Data interpretation capability</li> <li>• Transferability of knowledge</li> </ul>
Learning by Listening to Employees	When learning by listening to employees is emphasized, the processes are improved, employee morale is increased by reducing rework and increasing rewards.	<ul style="list-style-type: none"> <li>• Saturn employee suggestion system</li> <li>• Japanese manufacturers</li> <li>• Intel, Microsoft, 3M small team organization approach to facilitate communication</li> <li>• HP cash profit sharing</li> </ul>	<ul style="list-style-type: none"> <li>• Reward system</li> <li>• Process improvement</li> <li>• Product improvement</li> <li>• Willingness to learn</li> <li>• Diversity of suggestions</li> </ul>	<ul style="list-style-type: none"> <li>• Indirect communication time delays</li> <li>• Willingness to respond to suggestions</li> <li>• Limited number of suggestions per employee</li> </ul>
Learning by Listening to Customers and Suppliers	When learning by listening to customers and suppliers is emphasized, the perception of product's value increases, generating more sales.	<ul style="list-style-type: none"> <li>• Microsoft's product wish line</li> <li>• Intel learns from suppliers of equipment, capturing most of the experience curve advantages of its larger rivals</li> </ul>	<ul style="list-style-type: none"> <li>• Process improvement</li> <li>• Product improvement</li> <li>• Willingness to learn</li> <li>• Diversity of suggestions</li> <li>• Better product value for customer</li> <li>• More business for suppliers</li> </ul>	<ul style="list-style-type: none"> <li>• Number of potential customers</li> <li>• Limited number of suppliers</li> </ul>
Scale, Scope and Learning Curve	Cumulative output brings unit costs down through economies of scale and learning effect. Established distribution channels allows introduction of more products cheaper.	<p>Scale</p> <ul style="list-style-type: none"> <li>• Microsoft</li> <li>• Auto industry</li> </ul> <p>Scope</p> <ul style="list-style-type: none"> <li>• 3M</li> <li>• Corning</li> <li>• Procter &amp; Gamble</li> </ul> <p>Learning</p> <ul style="list-style-type: none"> <li>• HP</li> <li>• Electronics industry</li> </ul>	<p>Scale</p> <ul style="list-style-type: none"> <li>• Capacity utilization</li> </ul> <p>Scope</p> <ul style="list-style-type: none"> <li>• Channel utilization</li> </ul> <p>Learning</p> <ul style="list-style-type: none"> <li>• Willingness to implement suggestions</li> </ul>	<p>Scale</p> <ul style="list-style-type: none"> <li>• Optimum production capacity</li> </ul> <p>Scope</p> <ul style="list-style-type: none"> <li>• Channel saturation</li> </ul> <p>Learning</p> <ul style="list-style-type: none"> <li>• Diminishing return of learning</li> </ul>
Bargaining Power of Buyers	Reduced costs originated by high bargaining power over suppliers increases market share.	<ul style="list-style-type: none"> <li>• Wal-Mart</li> </ul>	<ul style="list-style-type: none"> <li>• Relative economic power</li> <li>• Size of buyer</li> <li>• Information about supplier</li> <li>• Low buyer's switching costs</li> <li>• Buyer's price sensitivity</li> </ul>	<ul style="list-style-type: none"> <li>• Number of suppliers</li> <li>• Size of buyer</li> <li>• Ability to vertically integrate</li> <li>• High buyer's switching costs</li> </ul>



Exhibit 5-21: Maps of growth summary (continued)

Map Name	Description	Example	Drivers	Limits
Bargaining Power of Suppliers	Product differentiation and standardization increases bargaining power of suppliers	<ul style="list-style-type: none"> <li>• Intel</li> <li>• Microsoft</li> </ul>	<ul style="list-style-type: none"> <li>• Product differentiation</li> <li>• Product standardization</li> <li>• Relative economic power</li> <li>• Size of supplier</li> </ul>	<ul style="list-style-type: none"> <li>• Commoditization</li> <li>• Limited number of standards</li> <li>• Potential number of customers</li> </ul>
Channel Management	A change in consumer purchasing behavior opens a window of opportunity to manage new distribution channels.	<ul style="list-style-type: none"> <li>• Starbucks changed distribution from supermarket to bookstores, company-owned and franchised coffee shops, and mail-order catalogues</li> </ul>	<ul style="list-style-type: none"> <li>• Channel differentiation</li> <li>• Consumer behavior</li> <li>• Relative economic power of channels</li> </ul>	<ul style="list-style-type: none"> <li>• Organizational rigidity</li> <li>• Potential number of customers</li> <li>• Economy of channels</li> </ul>
Customer Franchise Management	<p>Focus on the acquisition, development and retention of profitable customers.</p> <p>Linking compensation to profit contribution increases relative compensation which in turn generates sales productivity improvement.</p>	<ul style="list-style-type: none"> <li>• Using database marketing, banks and credit card companies target the most profitable customers by offering tailor-made products and services to increase retention of this segment</li> <li>• Hotel reservation sales force does not offer discounts unless customers request one. AT&amp;T offers discounted rates if valuable customers want to switch carriers.</li> </ul>	<ul style="list-style-type: none"> <li>• Profit</li> <li>• Customer differentiation</li> <li>• Shift of relative power toward customers</li> <li>• Economics of customer retention</li> <li>• Compensation for profitability</li> <li>• Sales force skills</li> </ul>	<ul style="list-style-type: none"> <li>• Organizational rigidity</li> <li>• Potential number of profitable customers</li> <li>• Economics of customer acquisition</li> <li>• Number of profitable customers</li> <li>• Diminishing profitability per sale</li> </ul>
Network Effect	Customer base size attracts developers of new products (supply side) and new customers (demand side) to the industry	<ul style="list-style-type: none"> <li>• Telephony - being a customer depends on how many customers are connected to the network.</li> <li>• Intel microprocessors</li> <li>• Microsoft Windows OS</li> <li>• HP compatibility focus</li> </ul>	<ul style="list-style-type: none"> <li>• Connectability</li> <li>• Compatibility</li> <li>• Number of applications offered</li> <li>• Number of other customers</li> </ul>	<ul style="list-style-type: none"> <li>• First mover advantage</li> <li>• Commoditization of products</li> <li>• Adoption of standards</li> <li>• Number of potential customers</li> </ul>
Word of Mouth	The adoption rate of new products is strongly influenced by word of mouth	The Internet customer base	<ul style="list-style-type: none"> <li>• Customer base</li> <li>• Self reward for communication</li> </ul>	<ul style="list-style-type: none"> <li>• Potential number of adopters</li> <li>• Quality</li> </ul>

## NOTES

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Rogers (1983) attempts to synthesize over 3,000 studies of the diffusion process and reaches the following conclusions. First, he proposes that consumers go through a sequence of five stages when accepting and adopting a new product (Rogers, 1983, p. 164):

1. Knowledge occurs when an individual (or other decision-making unit) is exposed to the innovation's existence and gains some understanding of how it functions.
2. Persuasion occurs when an individual (or other decision-making unit) forms a favorable or unfavorable attitude toward the innovation.

3. Decision occurs when an individual (or other decision-making unit) engages in activities that lead to a choice to adopt or reject the innovation.
4. Implementation occurs when an individual (or other decision-making unit) puts an innovation into use.
5. Confirmation occurs when an individual (or other decision-making unit) seeks reinforcement of an innovation decision already made, but he or she may reverse this previous decision if exposed to conflicting messages about the innovation.

Second, he reports that the rate of adoption of an innovation can be modeled as a function of that innovation's attributes. For example, other things being equal, an innovation will diffuse more quickly through a population if it

- has a strong relative advantage -- a greater perceived value in terms of higher return on investment, reliability, ease of operation or whatever the relevant dimensions compared to the current product or products (relative advantage);
- has a high degree of compatibility -- that is, it is consistent with the existing attitudes, values and operations of the individuals in the social system (compatibility);
- is not complex (complexity);
- can be tried on a limited basis (trialability);
- is observable -- that is, the results or benefits of the innovation, other variables that affect the others (observability).

In addition to the perceived attributes of the innovation, other variables that affect the adoption rate include:

- the type of innovation decision. The fewer people involved and the less structured the decision process (in an organization), the more rapid the diffusion.
- the communications channels used. Mass media are effective for simple innovations but interpersonal (sales force) contacts may be essential for more complex innovations.
- the nature of the social system. A highly interconnected social system (e.g., linked by an effective trade association) will see more rapid diffusion than a less connected system.
- the effect of change agent's promotional efforts. Enthusiastic and highly visible early adopters will speed the diffusion process.

Third, Rogers suggest that individuals differ markedly in their likelihood of trying new products. As the characterization of consumers suggests, the continuum of innovativeness can be partitioned into a number of adoption categories. He characterizes innovators as "venturesome," early adopters as "respectable," early majority as "deliberate," late majority as "skeptical," and laggards as "traditional." Early adopters appear to differ from later adopters in terms of socioeconomic characteristics, personality variables and communication behavior:

- *Socioeconomic characteristics.* Education, income literacy and social status are positively related to early adoption, but no consistent relationship with age has been found.
- *Personality variables.* Early adopters have greater empathy (ability to project into the role of another), are less dogmatic in their beliefs, are better able to deal with abstraction, are more rational, have greater intelligence, have a more favorable attitude toward education and science, are less fatalistic, and have both higher levels of aspiration and achievement than later adopters.
- *Communication behavior.* Early adopters tend to rate more highly on range of communication-related dimensions such as social participation, exposure or mass media, contact with change agents, knowledge of innovations, and degree of belonging to interconnected communications systems than later adopters.

Finally, Rogers stresses the importance of and role of interpersonal influence, or opinion leadership, in activating diffusion networks. Innovators and early adopters communicate their experiences to others; later adopters look to these persons for opinion leadership, which either encourages or discourages them from adopting the product. The role of personal influence varies across individuals and decision situations, and it is more important in the evaluation stage of the decision process than in other stages, for late adopters than for early adopters, and in risky situations than in safe situations. In general, the traits of opinion leaders are innovators while others are not. Furthermore, opinion leadership appears to be product-area specific and is a relative phenomenon, because leaders have more information than followers.

These generalizations have been extended too apply to organizational adoption. In addition to individual variables, studies of organizational adoption have considered internal characteristics of the organization (such as centralization of decision-making authority, organizational slack---the level of uncommitted organization resources, organizational size, and the like) as well as external characteristics (such as the degree of market competitiveness, the length of the life cycle for new products in the industry, and the like).

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## CHAPTER 6

### STUDY OF FIVE COMPANIES

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#### INTRODUCTION

The same concepts that were used to build the general Maps of Growth were applied to the five individual companies that are the subjects of this thesis. The companies were selected based on outstanding growth performance and a ranking consistently among the top ten in *Fortune Magazine's* annual list of most admired companies in the United States. The companies chosen were 3M Company, Corning, Hewlett Packard, Intel, and Microsoft.

The objectives of this chapter are:

- to find the growth drivers for each of these companies,
- to find the cause and effect relationships between the growth drivers
- to find general patterns present in specific maps,
- to look for common practices associated with growth among these companies,
- to provide graphic examples of the use of the Maps of Growth as a means of understanding how growth mechanisms function, and
- to learn about the nature of growth processes.

The maps of growth for each company were built using information gathered from a two-hour interview as well as public information. Each variable or driver is associated with the company's practices, cultural characteristics, or programs. The interviews provided us with evidence of those links and with examples of how the growth drivers

work for each company. However, the intent of these case analyses is to show how to use the proposed framework to understand and evaluate the growth processes within corporations. Further analysis is required to confirm the validity of the processes described here as the main drivers for growth for the companies in our study.

**3M Company**  
(Minnesota Mining and Manufacturing Company)

## Map Of Growth

The starting point at 3M was the "Ten Commandments for Managing Creative People" and "3M Growth Initiatives and Objectives".

### "3M Ten Commandments for Managing Creative People"

In an interview with Fortune (1/16/95), Livio DeSimone, CEO, said:

**Give folks time to follow their muse.** *"Technicians are free to devote 15% of their time to any research project that they wish."*

**Create a culture of cooperation.** *"We should always have people from as many disciplines as possible talking to each other."*

**Measure your results.** *"3M has 45 business units that measure sales, earnings, etc. but also what they have done that is new. If it isn't happening, then there's an issue."*

**Stay ahead of the customer.** *"The most interesting products are the ones that people need but can't articulate that they need."*

**Stage a lot of celebration.** *Marshall Loeb wrote about 3M, "Man does not live by stock options alone. The company recognizes success not so much by giving shares or bonuses but by holding events where peers cheer peers. Call it corny, but it works."*

**Be honest and know when to say no.**

**Make the company a lifetime career.** *"It is tough to fire a lot of people and then ask the survivors to stick their necks out and be innovative."*

**Give your best managers assignments overseas.** *"The big manager sitting here in St. Paul doesn't run a whole business."*

**Keep increasing R&D spending.**

**Don't heed everything Wall Street tells you.** *"Play it prudently [financially], and you'll have a cushion of money to let your technicians chase their dreams, to invest in R&D, to make decisions on the basis of what you want and not what the bankers demand in order to pay down your debt."*

### "3M Growth Initiatives and Objectives":

**Innovation objective:** *"More than a quarter of 3M's sales are from products less than 4 years old", says William Coyne, senior vice president, Research and Development.*

**Growth Objective:** *"Consistently produce profitable growth, at least 10 percent a year, on average", says Marc Adam, vice president, Marketing.*

**Marketing Objectives:** *"We must deliver the full power of our technologies, products, reputation, and service to each key customer. To facilitate that goal, the company has accelerated its movement toward market-centered organizations that will enable business units to be more responsive to customer demands", says Marc Adam.*

#### **Growth Initiatives:**

- **Pacing Plus**, which is aimed at creating products that represent fundamental change, not incremental advances, and which truly change the basis of competition in a market or industry.
- **Supply Chain Excellence**, which is aimed at achieving world-class customer service, making 3M the preferred supplier to its customers.
- **Earning Customer Loyalty**, by making sure that every customer's impression of 3M is a positive one and by delivering the 3M Brand Promise to customers through 3M products and services.

*"We call these three initiatives, but they really are just elements of one big push for growth", Dr. William Coyne said.*

**Entrepreneurship:** based on a strong respect for the individual, first articulated by William McKnight, 3M CEO from 1929 to 1966. And in a principle called "grow and divide", in which successful project teams, consisting of an entrepreneur with an idea and a small team that believes in it, grow into departments. When they become large, they spin off as separate divisions.

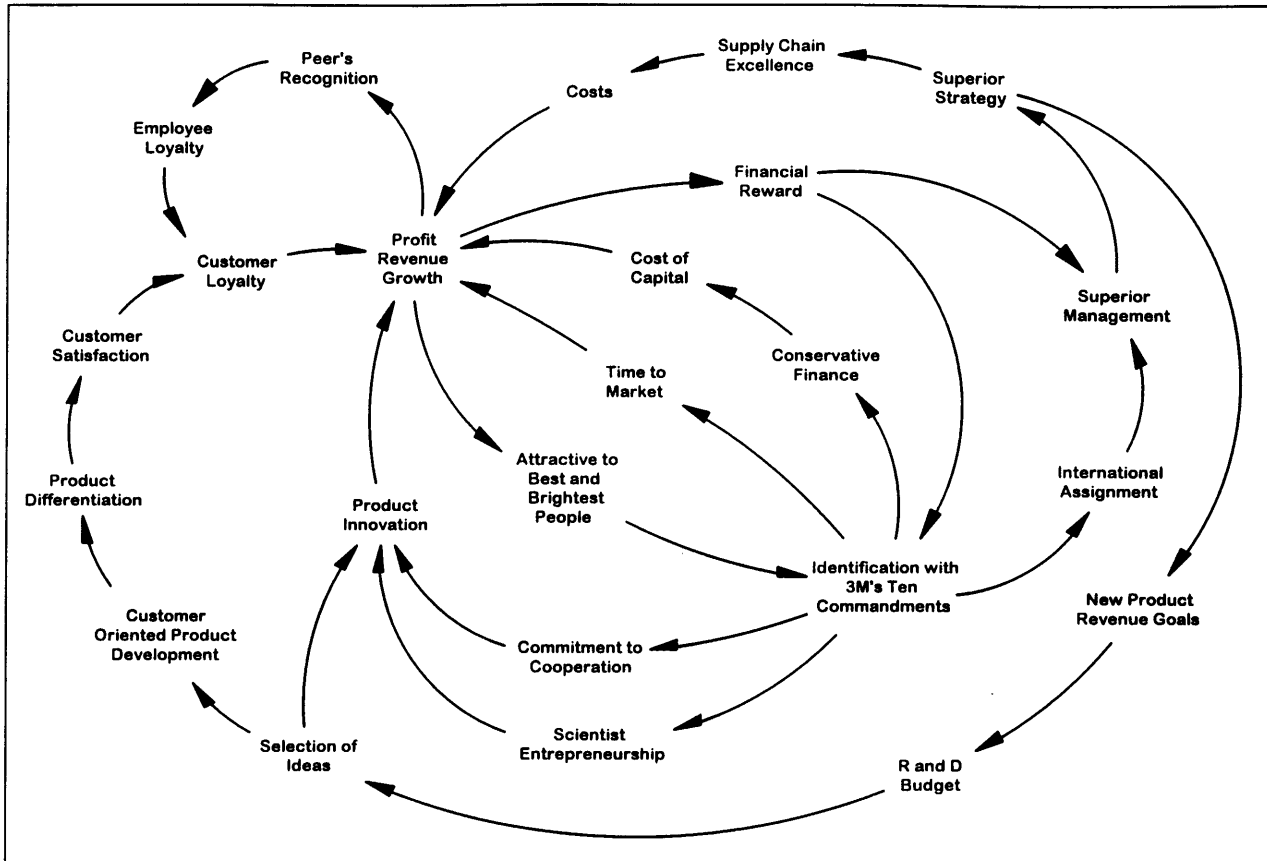
**Resource allocation:** there is a capital market within the company to fund projects from other departments. Projects compete openly for funds.

In our thesis research, we determined that for 3M the following general maps can be found inside its main growth map: Strategic Alignment, Resource Allocation, Product Innovation, Product Improvement and Differentiation, and Loyalty Effect.



The summary of the findings is represented in the 3M Growth Matrix, where each map pertaining to the 3M Map of Growth (see Exhibit 6-1) is identified and associated with the corresponding set of measurements of the Balance Scorecard (see Exhibit 6-7). A causal loop representation of 3M's dominant maps of growth were highlighted in exhibits 6-2 through 6-6.

Exhibit 6-1: 3M Map of Growth



Note: 3M's principal growth processes identified correspond to the following general maps: Strategic Alignment, Resource Allocation, Product Innovation, Product Improvement and Differentiation, and Loyalty Effect

Exhibit 6-2: 3M's Loyalty Effect

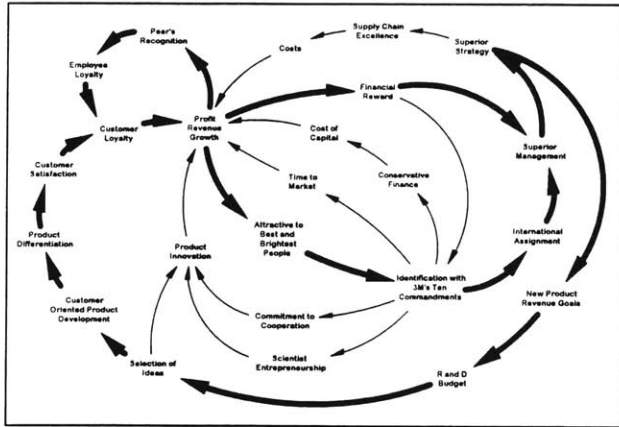


Exhibit 6-3: 3M's Product Innovation

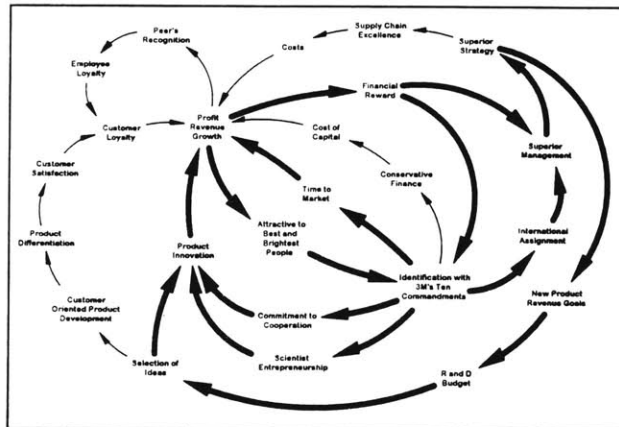


Exhibit 6-5: 3M's Strategic Alignment

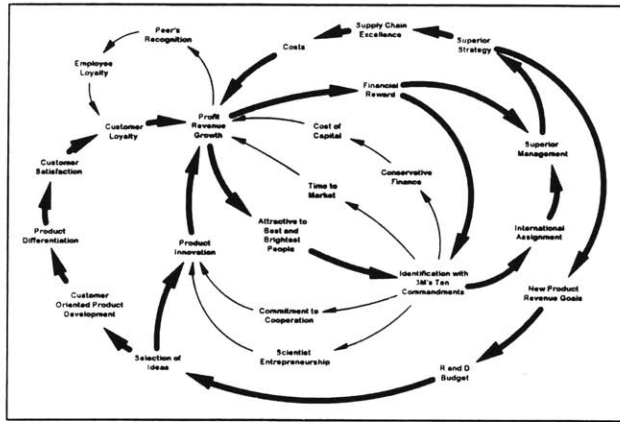


Exhibit 6-4: 3M's Product Differentiation

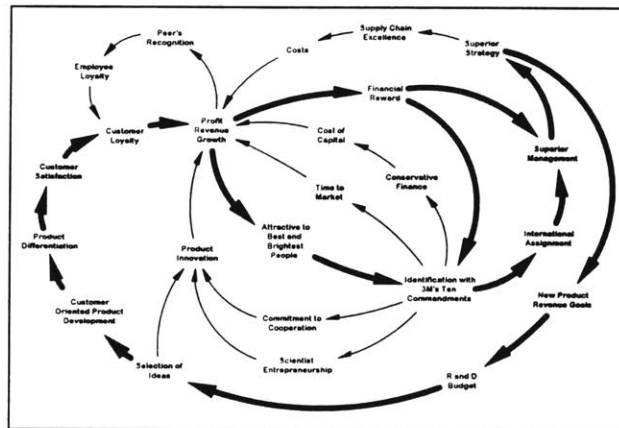


Exhibit 6-6: 3M's Resource Allocation

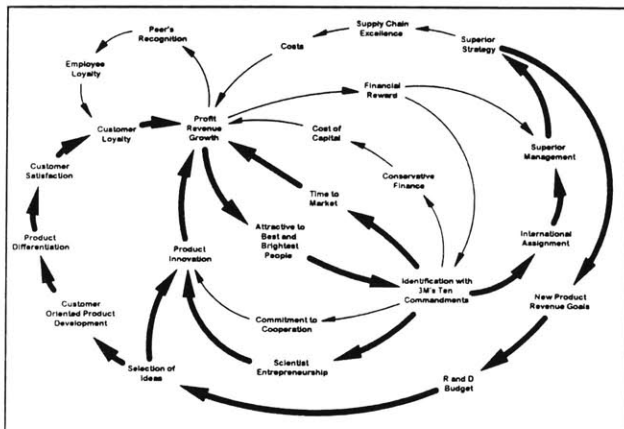
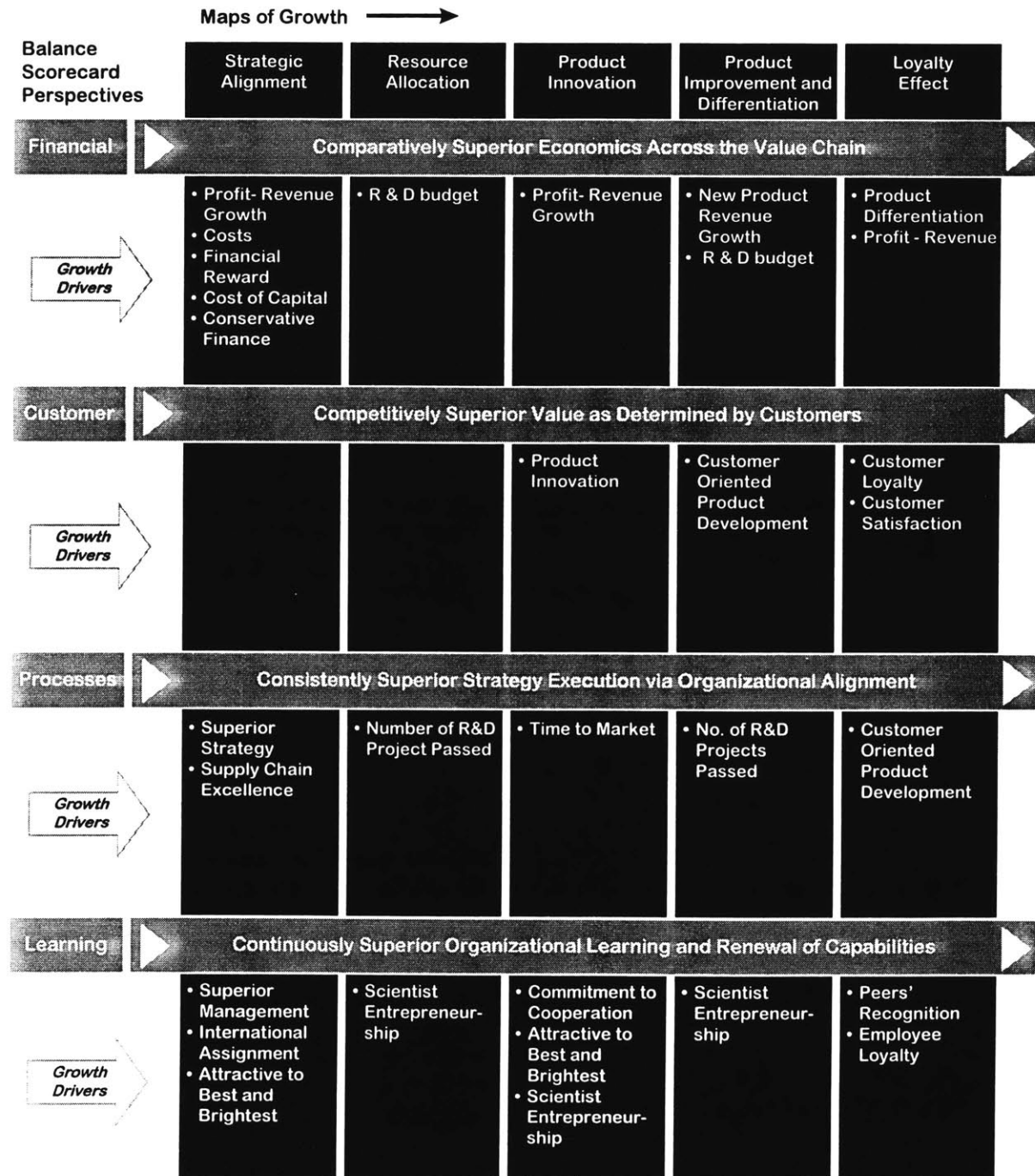


Exhibit 6-7: 3M's dominant maps of growth

## 3M Map of Growth



## Corning Incorporated

### Map Of Growth

We began with the *Corning Values Document*, and from there the interview discussed Corning's main cultural characteristics and how the company implements its goals and objectives. Below are excerpts from the *Corning Values Document*.

**Our Purpose:** To deliver superior, long-range economic benefits to customers, employees, shareholders, and to the communities. Accomplish this by living Corning's Corporate Values.

**Our Strategy:** Corning is an evolving network of wholly owned businesses and joint ventures. Corning chooses to compete in four global business sectors: Specialty Materials, Consumer Housewares, Laboratory Sciences and Communications. Each segment is composed of divisions, subsidiaries and alliances. Binding the four sectors together is the glue of common values, a commitment to technology, shared resources, dedication to total quality and management links.

**What we value:**

- Quality
- Integrity
- Performance
- Leadership
- Independence
- Technology
- The Individual

**Where we want to go:**

- We will be consistently in the top 25% of the *Fortune 500* in financial performance as measured by return on equity.
- We will grow at an annual rate of 5% in real terms.
- We will maintain a debt-to-capital ratio of approximately 25% and a long-term dividend payout of 33%.
- We will issue new shares of stock on a limited basis in connection with employee ownership programs and acquisitions with a clear strategic fit.

### Corning's Growth Practices and Objectives:

**Innovation objective:** *"Leveraging core technologies platforms into alliances, joint ventures or actual Corning distribution channels"*, according to Dr. Mark Taylor, Core Technology Management.

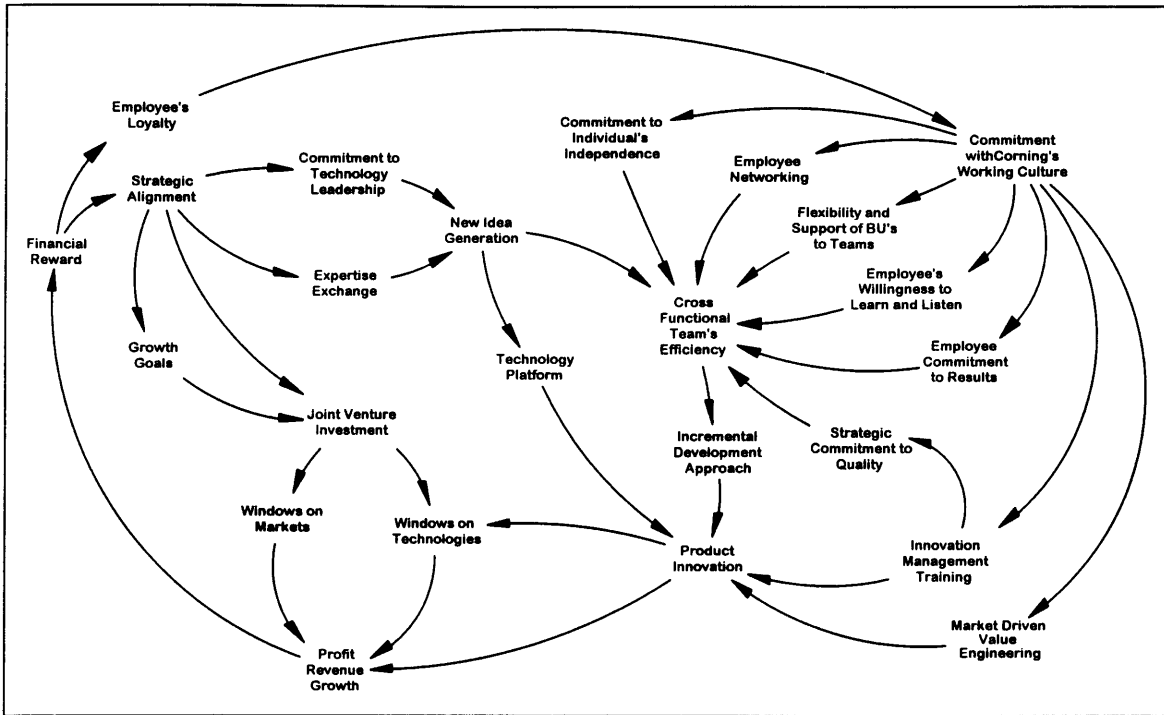
**Growth paths:** *"We recognize four areas of growth: internally-generated growth, cash-generated growth, technology growth, and joint ventures or alliances,"* Taylor said.

**Marketing Objectives:** *"We believe in value engineering for a market driven cost of production."*

In Corning's growth map we determined the following general maps: Strategic Alignment, Resource Acquisition, Product Innovation, Knowledge Sharing, and Learning by Listening to Employees.

The summary is presented in Corning's Growth Matrix (see Exhibit 6-8), where each sub-map of growth (see Exhibit 6-14) is associated with the corresponding set of measurements in the Balance Scorecard. A causal loop representation of Corning's dominant maps of growth were highlighted in exhibits 6-9 through 6-13.

Exhibit 6-8: Corning Map of Growth



Corning's principal growth processes identified correspond to the following general maps: Strategic Alignment, Resource Acquisition, Product Innovation, Knowledge sharing, and Learning by Listening to Employees.

Exhibit 6-9: Corning's Strategic Alignment

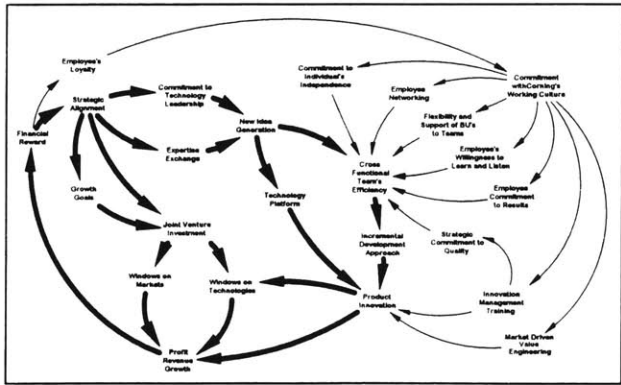


Exhibit 6-10: Corning's Product Innovation

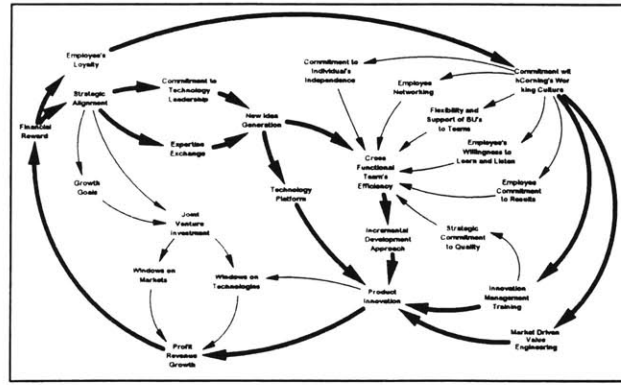


Exhibit 6-11: Corning's Knowledge Sharing

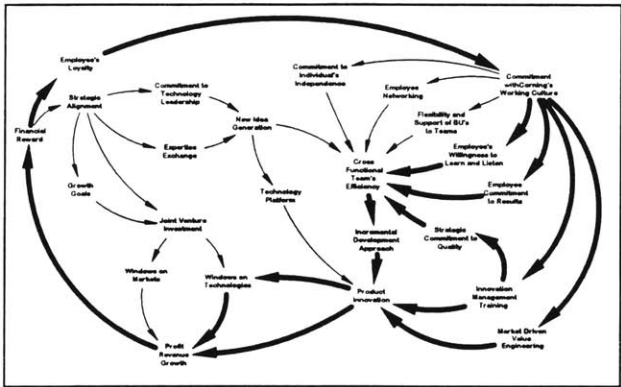


Exhibit 6-12: Corning's Resource Acquisition

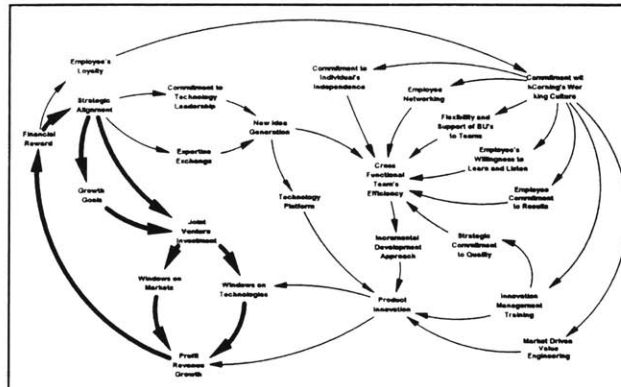


Exhibit 6-13: Corning's Learning by Listening to Employees

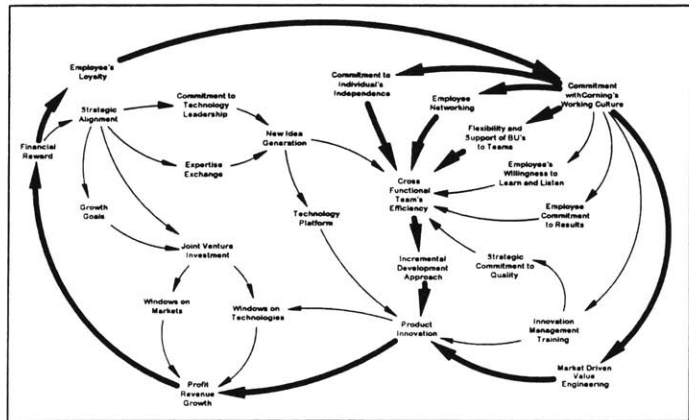
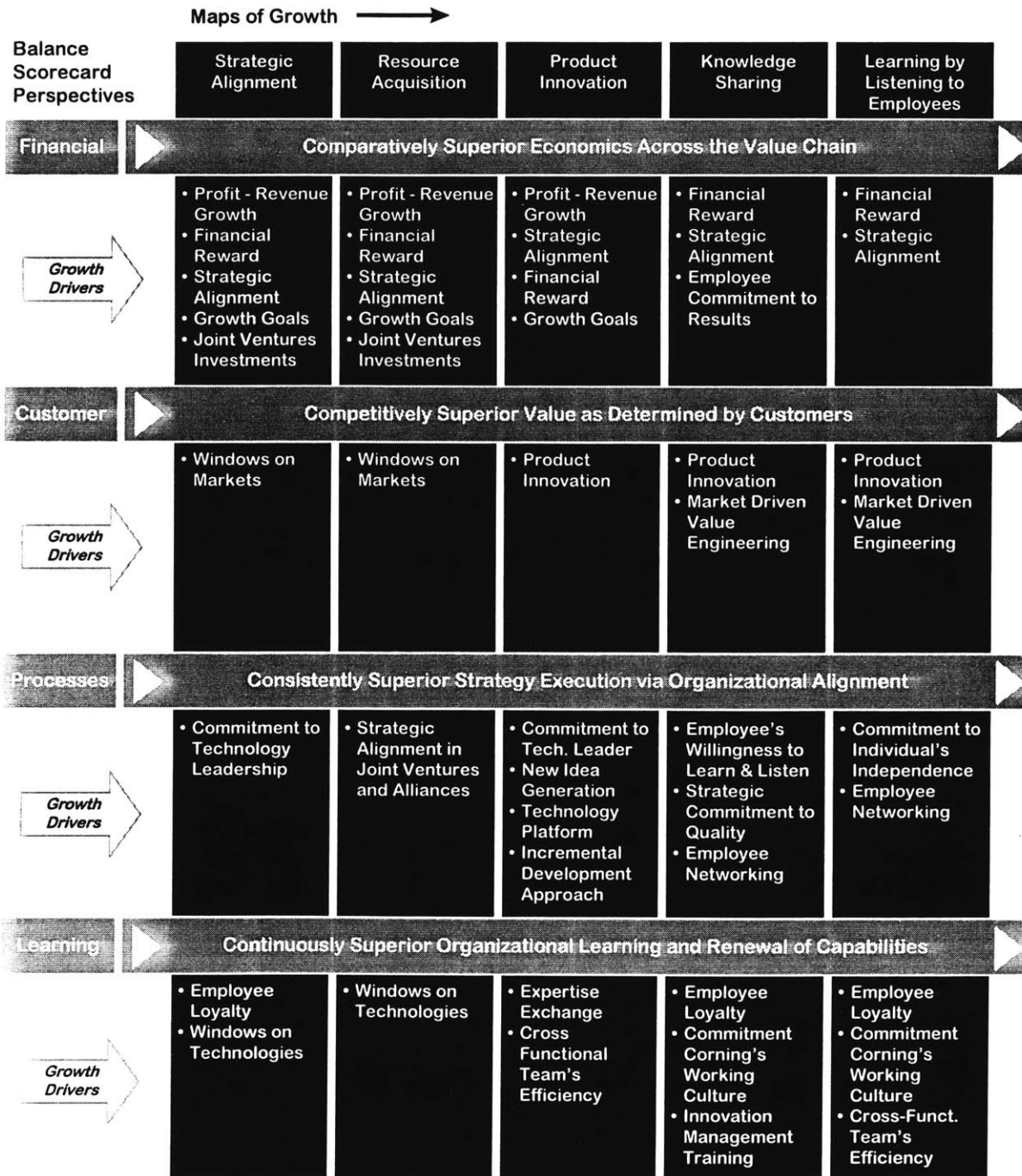




Exhibit 6-14 Corning's dominant maps of growth

## Corning Map of Growth



## Hewlett-Packard

### Map Of Growth

To understand the growth processes at Hewlett Packard (HP) it is necessary to consider its a strong internal culture. We interviewed Steve Rusckowski, General Manager, who told about "the HP Way" -- its high growth objectives, and its Seven Principles to Manage:

#### HP Way:

*"It is characterized by an open office on the shop policy. I can describe this policy as the right working environment -- egalitarian, plus highly developed communication skills. HP is a financially conservative firm, but at the same time a California entrepreneurial and liberal firm. We practice Hoshin Planning, in an structured and rigorous manner. We came to life to make big contributions to the industry with our products and technologies. All employees participate in cash profit sharing. We practice Total Quality Management, it's a ten-step business process which involves all the employees. We use it to evaluate our quality achievements a 'quality maturity score', with annual thresholds to surpass."*

#### Growth Objectives:

*"We have been growing at 30% a year for the last five years. We have a high revenue growth objective of \$8 billion for the next year. Our objective is to grow in new marketplaces (today revenues are 60% international)."*

#### Innovation Objectives:

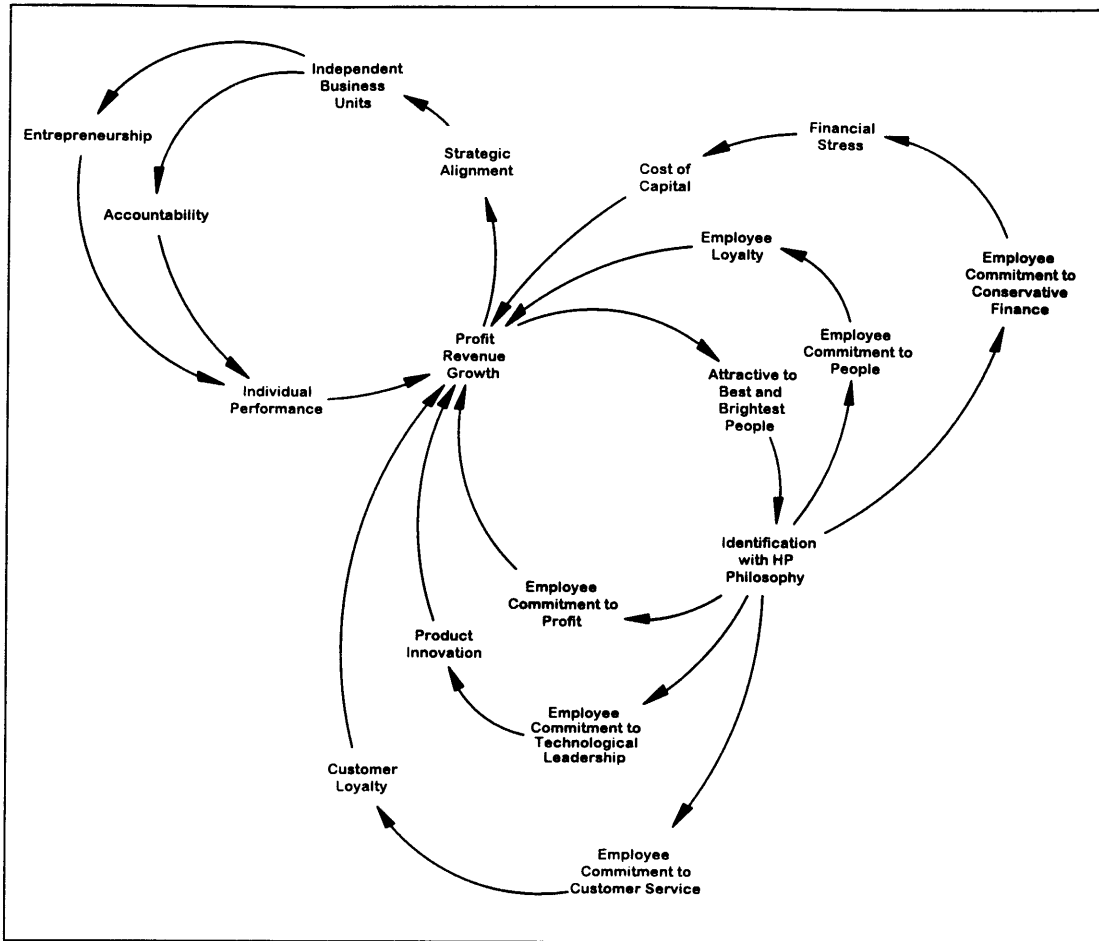
*"Sixty percent of our revenues come from products introduced in the past five years, and half of that from printers".*

### Seven Principles to Manage:

- **Profit Guide Business:** *"Each employee is committed to profit; stock options, stock purchasing programs, and profit sharing depend on this commitment".*
- **Technological Contribution to the Industry:** *"We came to life to produce precision instrument and highly engineered products. This is what drives innovation at HP".*
- **Commitment with to People:** *"Each person in our company is important, and every job is important. In the highly technical field in which we operate, little details often make the difference between quality products and those that aren't that good."*
- **Excellence on customer:** *"Our quality programs are the evidence of this principle".*
- **Commitment to our Community:** *"To be supportive of our communities allows us to better integrate with them".*
- **To Be Financially Conservative:** *"The premise is to grow from internally generated earnings".*
- **To Instrument what Engineers Develop:** *"Ideas came from engineers' dreams in the labs".*

Exhibit 6-15 depicts the HP Map of Growth and Exhibit 6-21 summarizes our analysis of growth drivers. A causal loop representation of HP's dominant maps of growth were highlighted in exhibits 6-16 through 6-20.

*Exhibit 6-15 - Hewlett-Packard Map of Growth*



*Hewlett Packard principal growth processes identified correspond to the following general maps: Strategic Alignment, Product Innovation, Product Improvement and Differentiation, and Loyalty Effect.*

Exhibit 6-16: HP's Resource Allocation

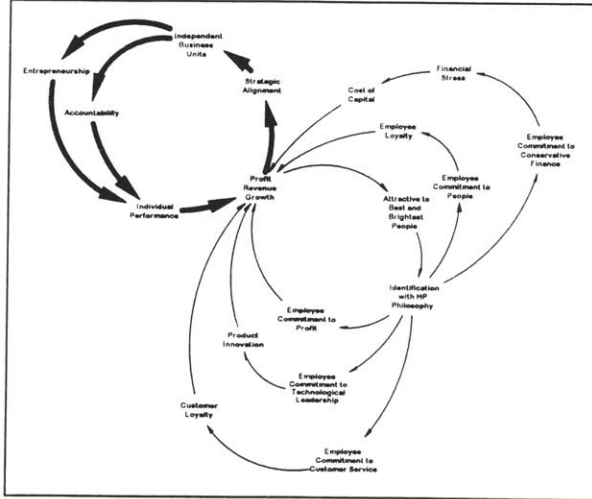


Exhibit 6-17: HP's Strategic Alignment

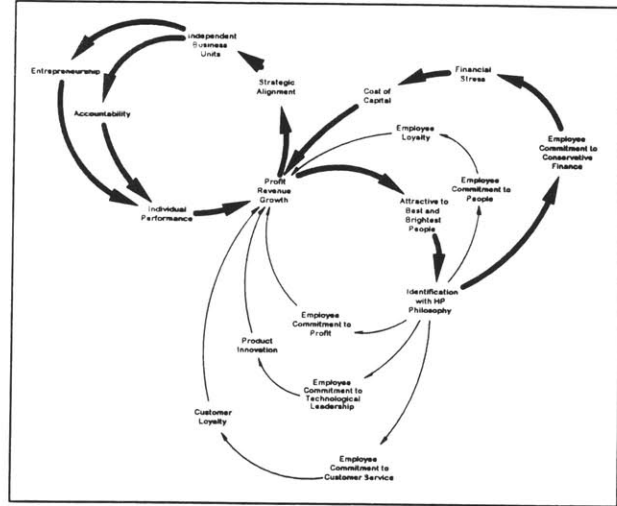


Exhibit 6-18: HP's Product Innovation

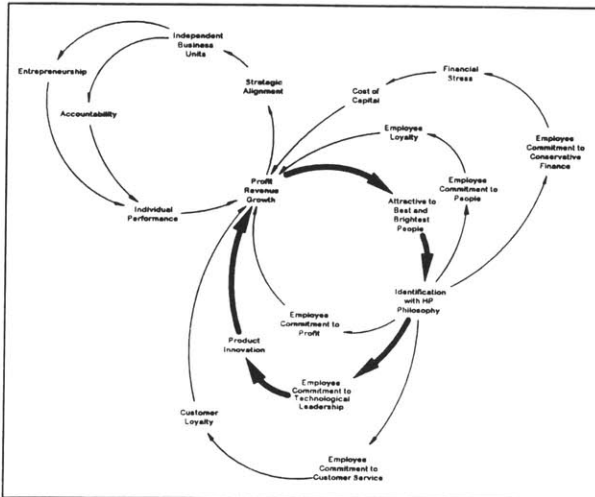


Exhibit 6-20: HP's Product Improvement & Differentiation

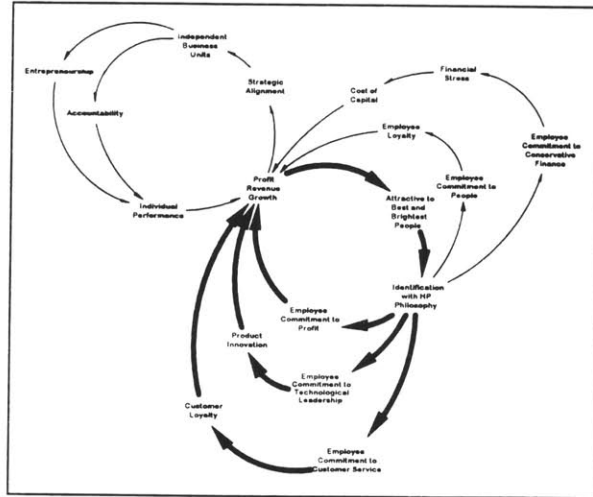


Exhibit 6-19: HP's Loyalty Effect

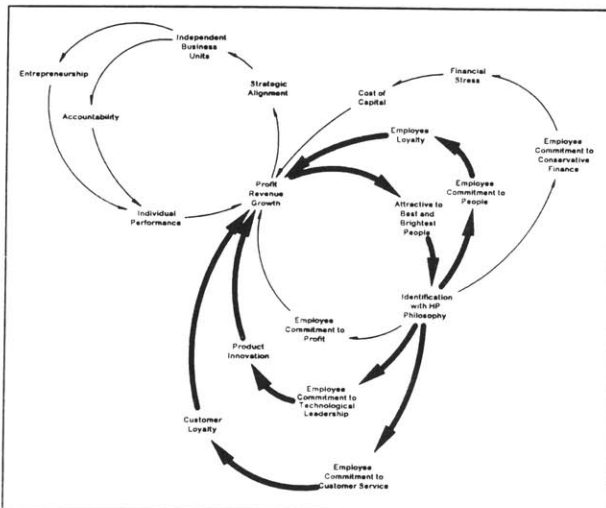
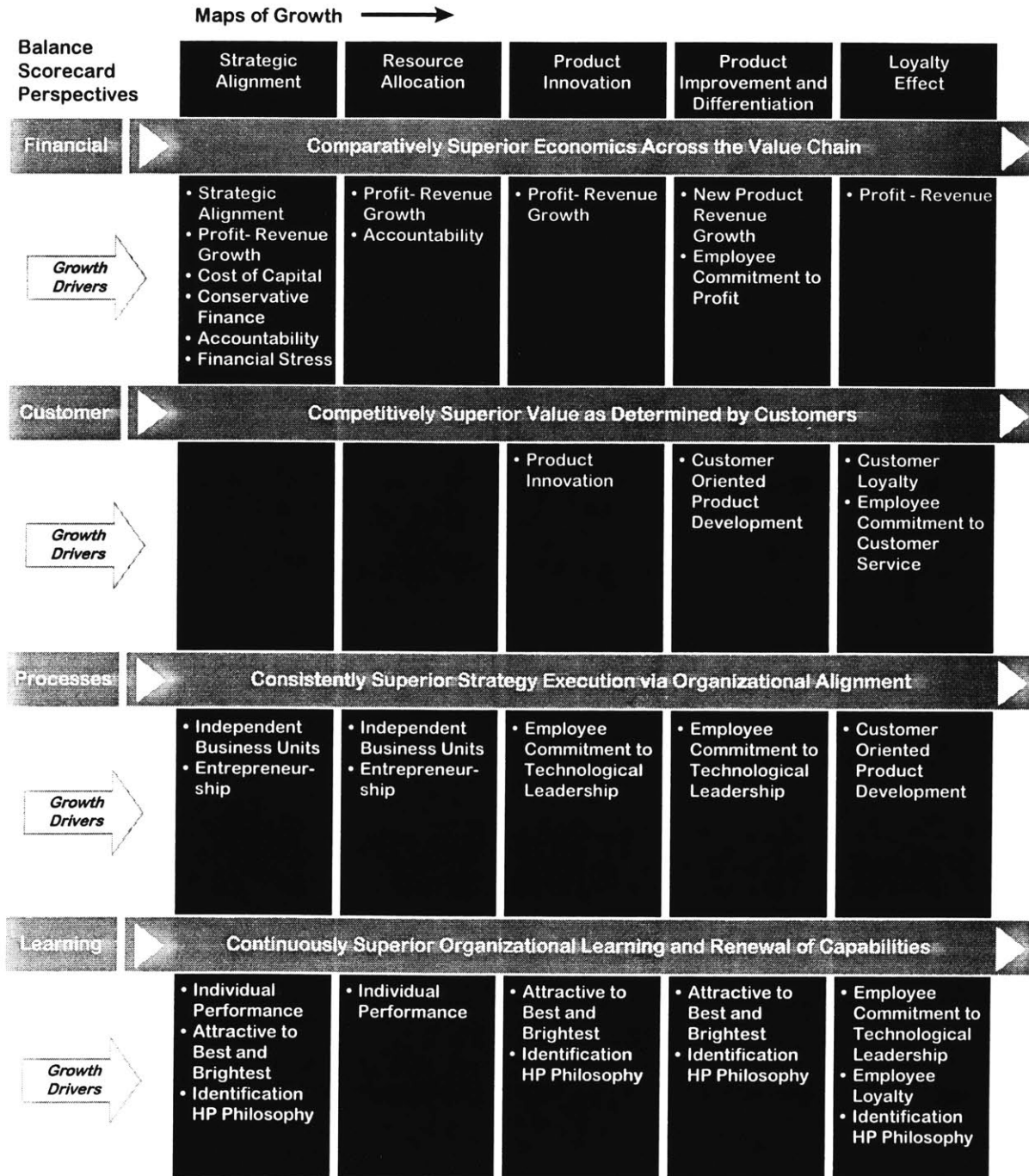


Exhibit 6-21 - HP's dominant maps of growth

## HP Map of Growth



## Intel

### Map Of Growth

To understand better how Intel has become the dominant player in the microprocessor market, we interviewed Eugene Meieran, Intel Advanced Technology Fellow. We also read the available public information about the company. We then created a map of growth for Intel (shown in Exhibit 6-22) which is composed of five Maps of Growth (see exhibit 6-28.)

Intel's Gordon Moore and the late Bob Noyce used to reiterate, "We are in the business of revolutionizing society", and their corporate goals, also constantly reiterated, said Intel was "To be, and to be recognized as, the technological leader in all areas we pursue. To be, and to be recognized as, the leader in meeting our customers' needs for delivery, reliability, quality, and service."

[Intel will] seek out and retain the best people at all levels and provide them with challenging jobs, training, and opportunities for personal growth so that they may share in Intel's success.<sup>1</sup>

The previous quote summarizes Intel's more dominant maps of growth. The first map of growth is the product innovation map. *"Today, Intel's microprocessors can hold 3 million active elements. Next year, they will hold 6 million, and by the year 2000 Intel will deliver 12 million active elements with their microprocessors,"* says Meieran about the influence that Moore's law has over the company's product improvement. Moore's law states that complexity will double each new generation of microprocessors, or every 18 months.

The second map of growth is the customer loyalty map. Intel's aggressive branding campaign is aimed at building greater customer awareness about their products and, coupled with high quality and performance, to increase customer loyalty.

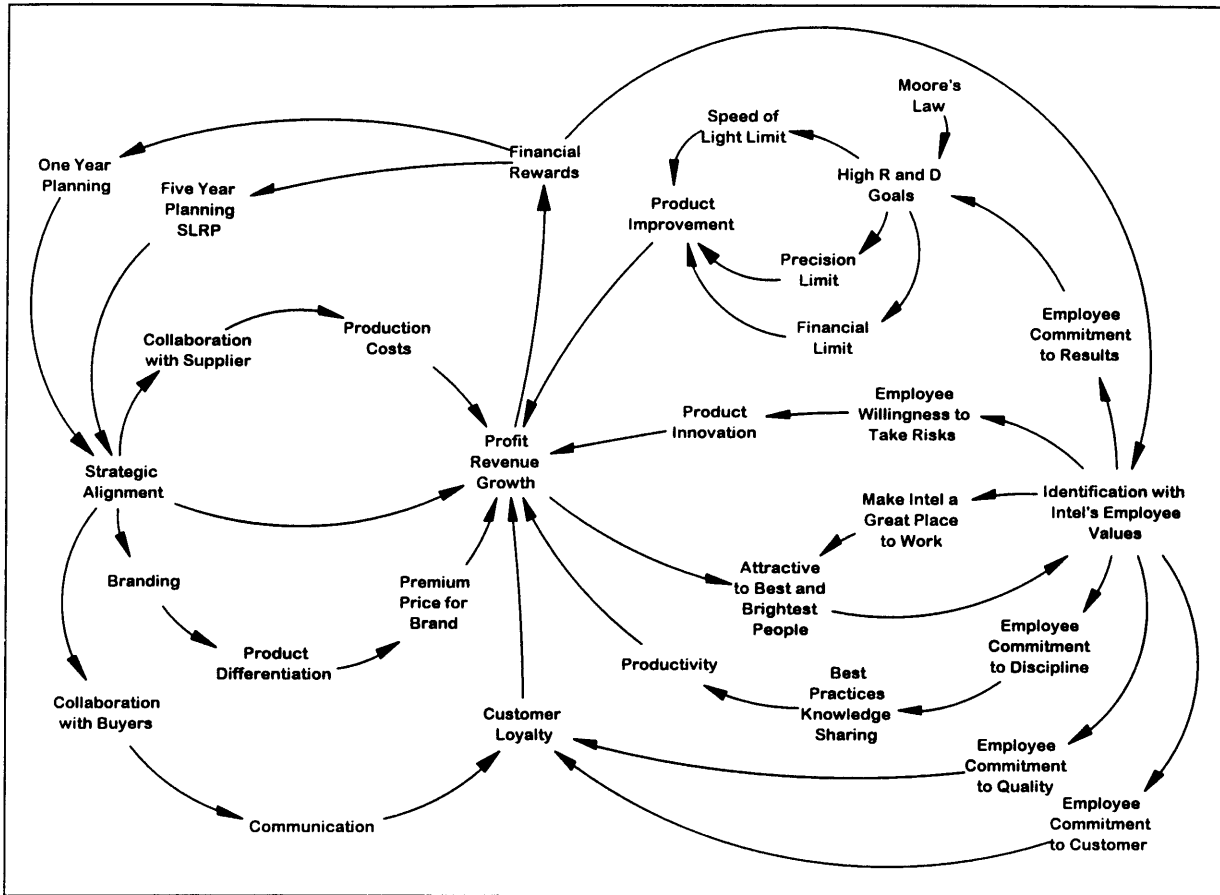
The third important map of growth is the knowledge sharing map.

Now organizations-like Intel or GE-highlight areas where the most learning can take place, systematically involve people from other activities at these key sites, and make sure they are rotated to or mixed with other skilled positions where they can share and use this knowledge. As their knowledge bases grow and they share them in response to new challenges, organizational learning grows exponentially.<sup>2</sup>

A causal loop representation of Intel's dominant maps of growth were highlighted in exhibits 6-23 through 6-27.



Exhibit 6-22 - Intel Map of Growth



*Intel principal growth processes identified correspond to the following general maps: Strategic Alignment, Product Innovation, Product Improvement and Differentiation, Knowledge Sharing, and Loyalty Effect.*

Exhibit 6-24: Intel's Strategic Alignment

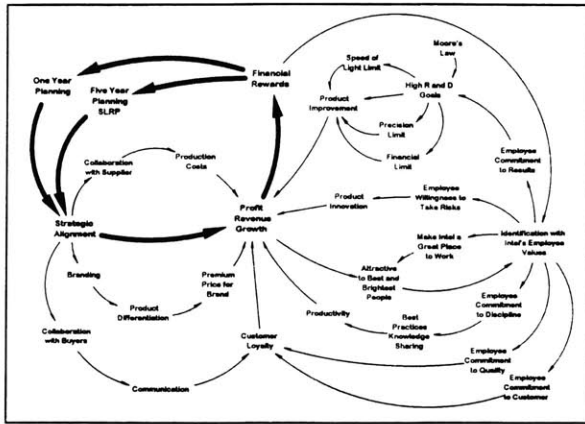


Exhibit 6-23: Intel's Product Improvement & Differentiation

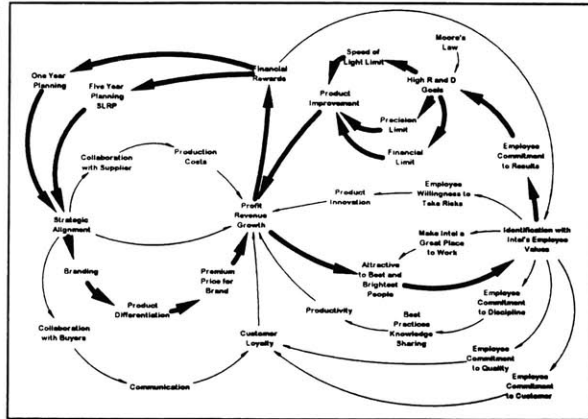


Exhibit 6-26: Intel's Product Innovation

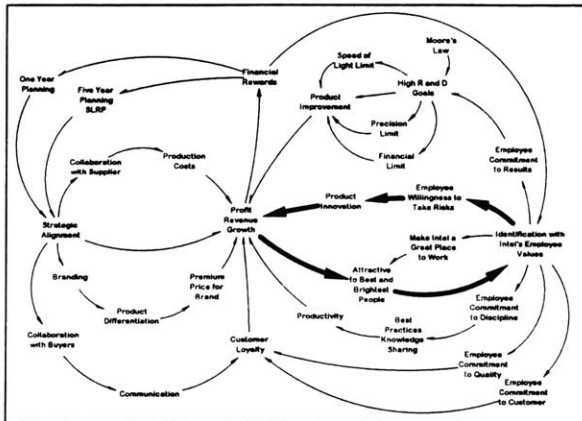


Exhibit 6-25: Intel's Knowledge Sharing

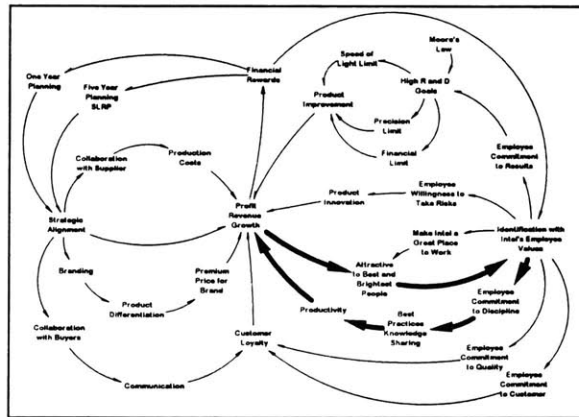


Exhibit 6-27: Intel's Loyalty Effect

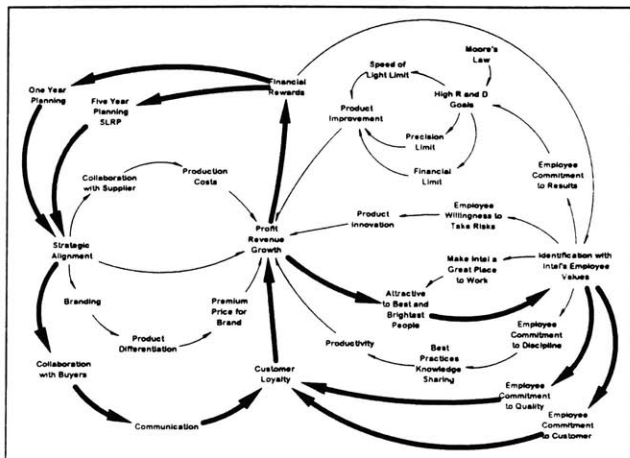
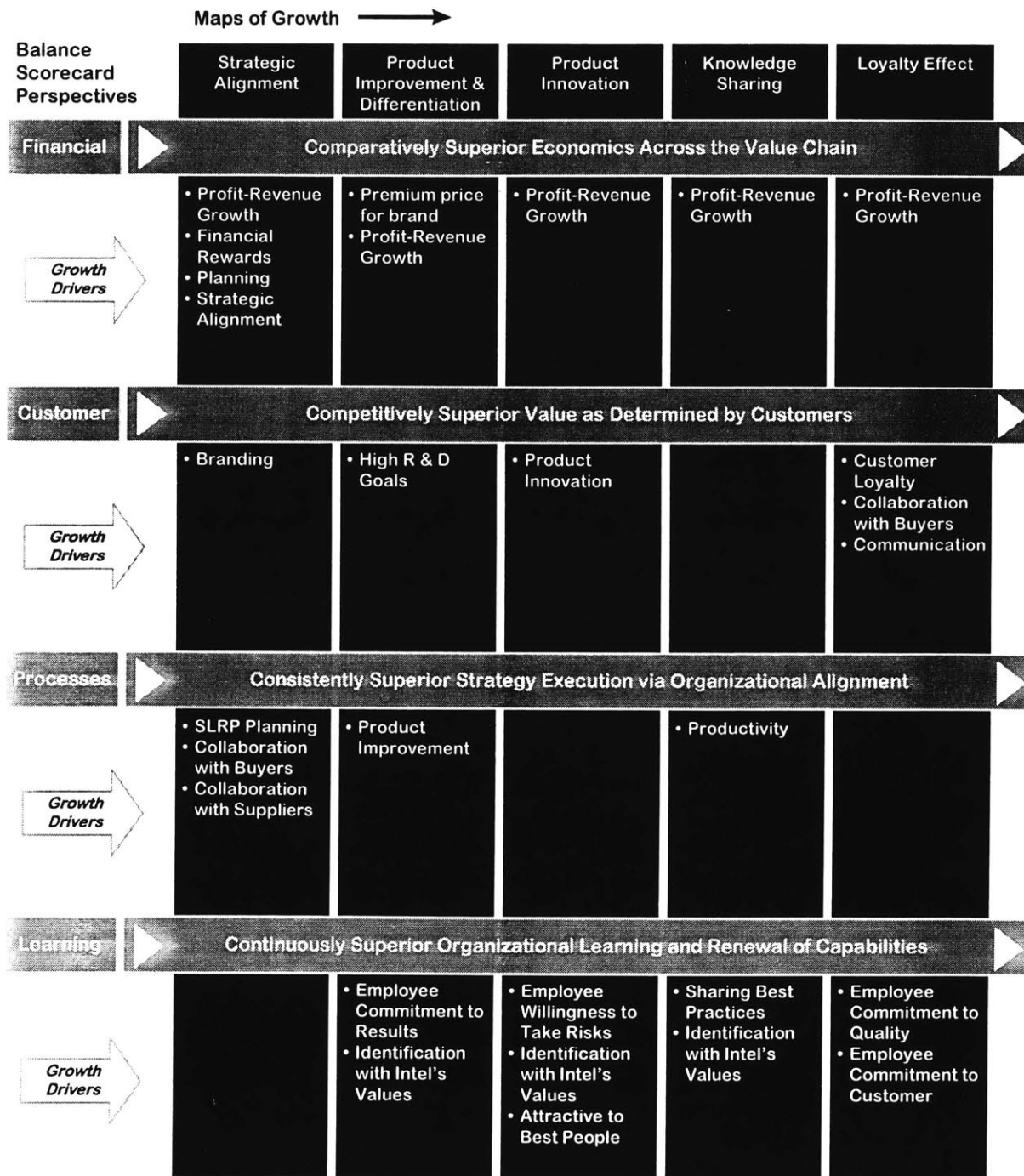


Exhibit 6-28 Intel's dominant maps of growth

## Intel Map of Growth



## Microsoft

### Map Of Growth

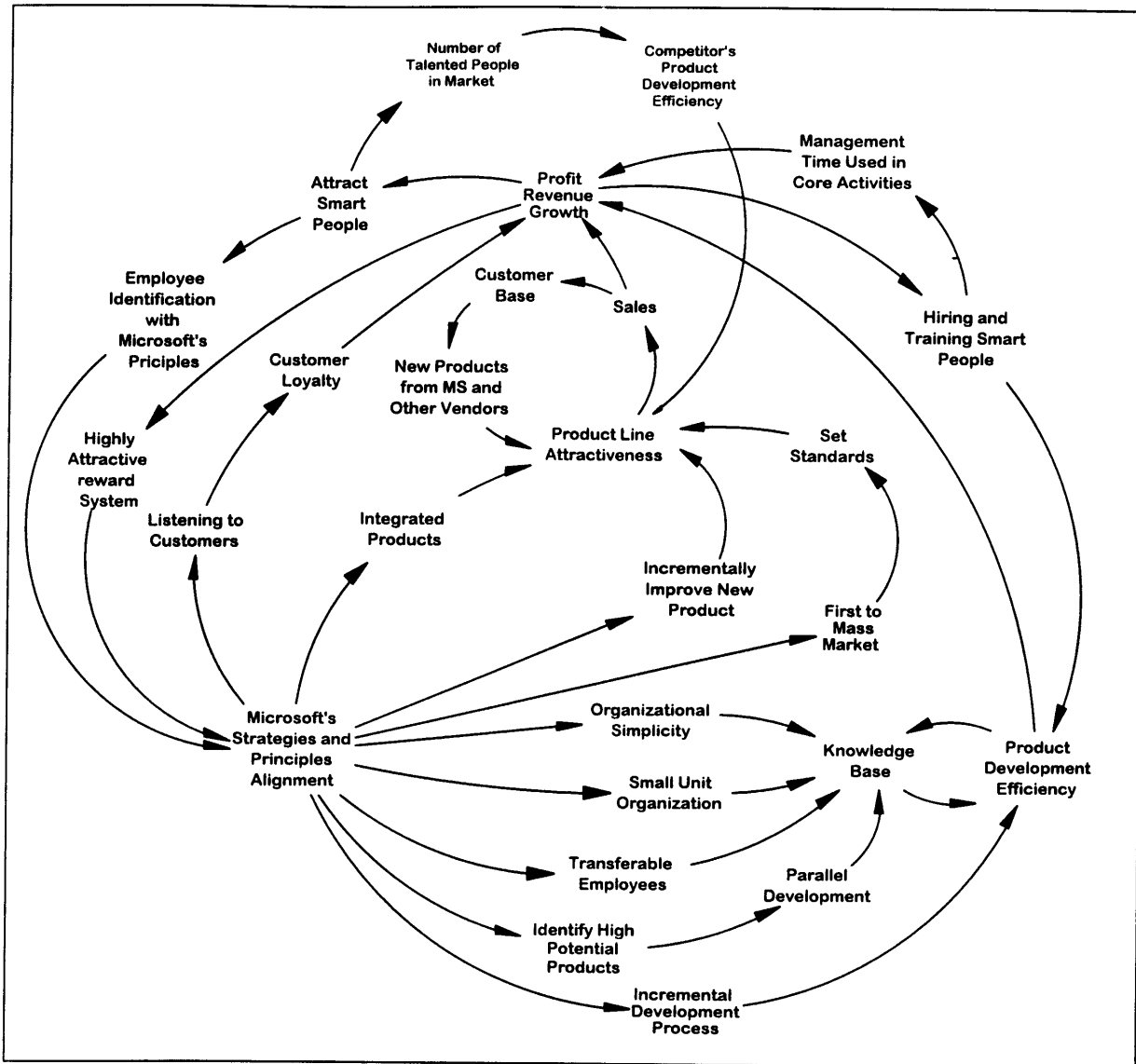
For Microsoft, we interviewed M.I.T. Professor Michael Cusumano, from whom we derived our analysis of Microsoft growth. The main findings were derived from *Microsoft Secrets*<sup>3</sup> and from Lavery's article about Microsoft.<sup>4</sup>). The summary of our analysis is presented in exhibit 6-30 and 6-37. A causal loop representation of Microsoft's dominant maps of growth were highlighted in exhibits 6-31 through 6-36.

**Exhibit 6-9: Microsoft's Strategies and Principles**

STRATEGY	PRINCIPLES
<b>Organizing and Managing the Company</b> Find Smart People who knows the technology and the business	Hire a CEO with a deep understanding of both the technology and the business. Organize flexibly around and across product markets and business functions. Hire the smartest managers you can find - people with deep understanding of the technology and the business. Hire the smartest employees you can find - people with deep understanding of the technology and the business.
<b>Managing Creative People and Technical Skills</b> Organize small teams of overlapping functional specialists.	Establish functional specialties, but work in small teams and overlap responsibilities. Let functional experts define and hire for their technical specialties. Educates new hires through learning by doing and mentoring Create career paths and "ladder levels" to retain and reward technical people.
<b>Competing with Products and Standards</b> Pioneer and orchestrate evolving mass markets.	Enter evolving mass markets early or stimulate new markets with "good" products that set industry standards. Incrementally improve new products and periodically make old products obsolete. Push volume sales and exclusive contract to ensure that company products become and remain industry standards. Take advantage of being the standard provider with new products and product linkages. Integrate, extend, and simplify products to reach mass markets.
<b>Developing and Shipping Products</b> Do every thing in parallel, with frequent synchronization.	Work in parallel teams, but "synch up" and debug daily. Always have a product you can theoretically ship, with versions for every major platform and market. Speak a common language on a single development site. Continuously test the product as you build it. Use metric data to determine milestone completion and product release.
<b>Building a Learning Organization.</b> Improve through continuous self-critiquing, feedback, and sharing.	Systematically learn from past and present projects and products. Encourage feedback and improvement using quantitative metrics and benchmarks. View customer support as part of the product and as data for improvement. Promote linkages and sharing across product groups.

Source: Lavery, 1995, p. 48 and Cusumano, 1995.

Exhibit 6-30 - Microsoft Map of Growth



Microsoft's principal growth processes identified correspond to the following general maps: Strategic Alignment, Product Innovation; Product Improvement and Differentiation; Knowledge Sharing; Loyalty Effect; Scale, Scope and Learning Curve; and Network Effect.

Exhibit 6-32: Microsoft's Product Improvement & Differentiation

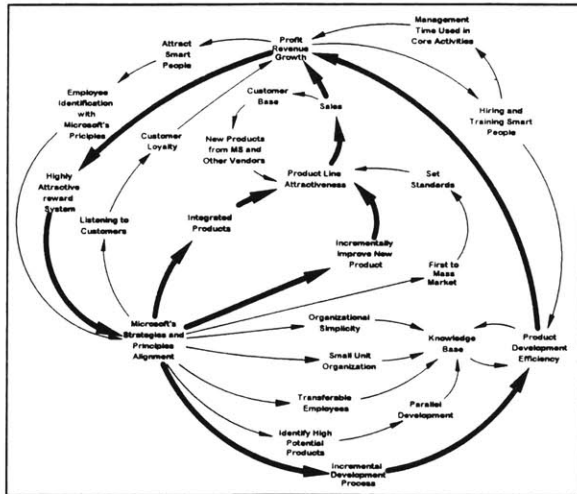


Exhibit 6-31: Microsoft's Knowledge Sharing

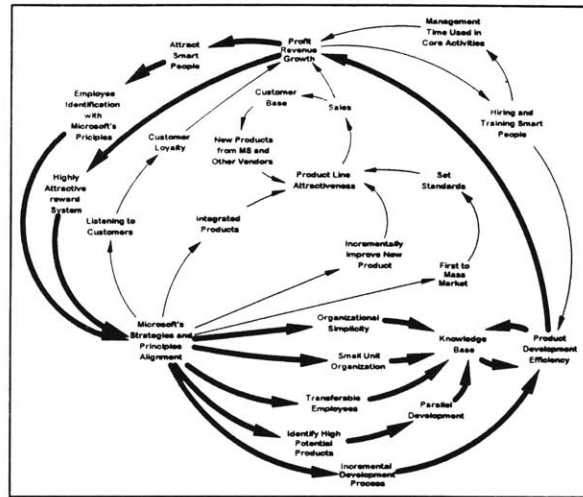


Exhibit 6-36: Microsoft's Loyalty Effect

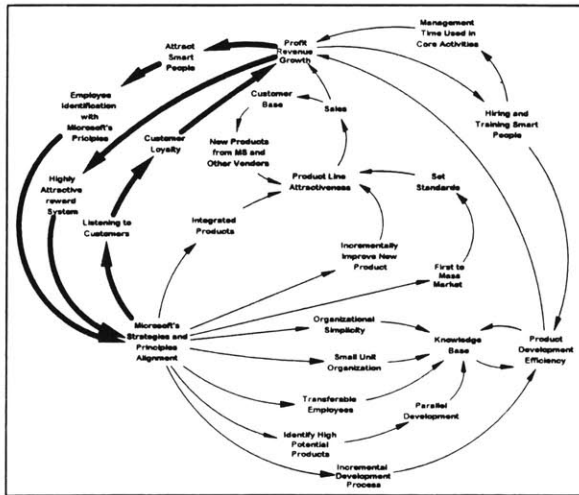


Exhibit 6-33: Microsoft's Scale, Scope, and Learning Curve

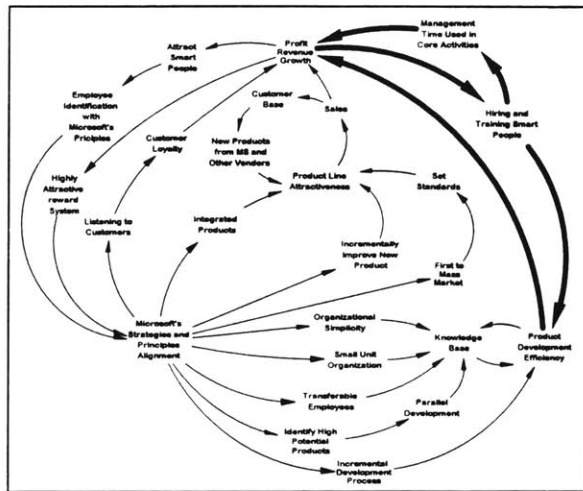


Exhibit 6-35: Microsoft's Network Effect

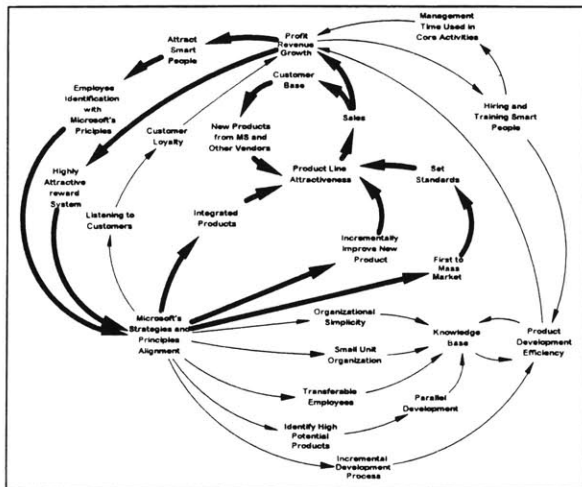


Exhibit 6-34: Microsoft's Strategic Alignment

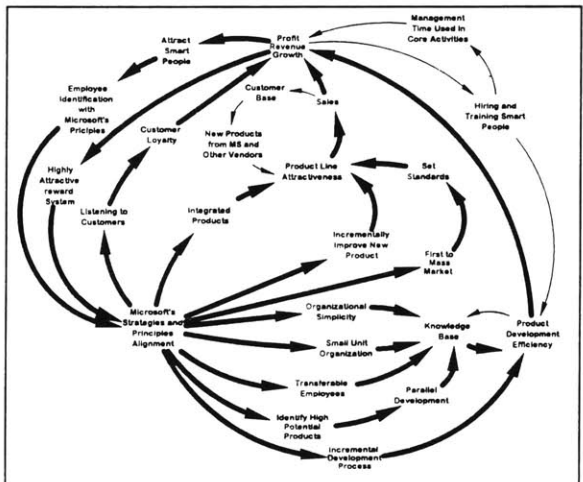
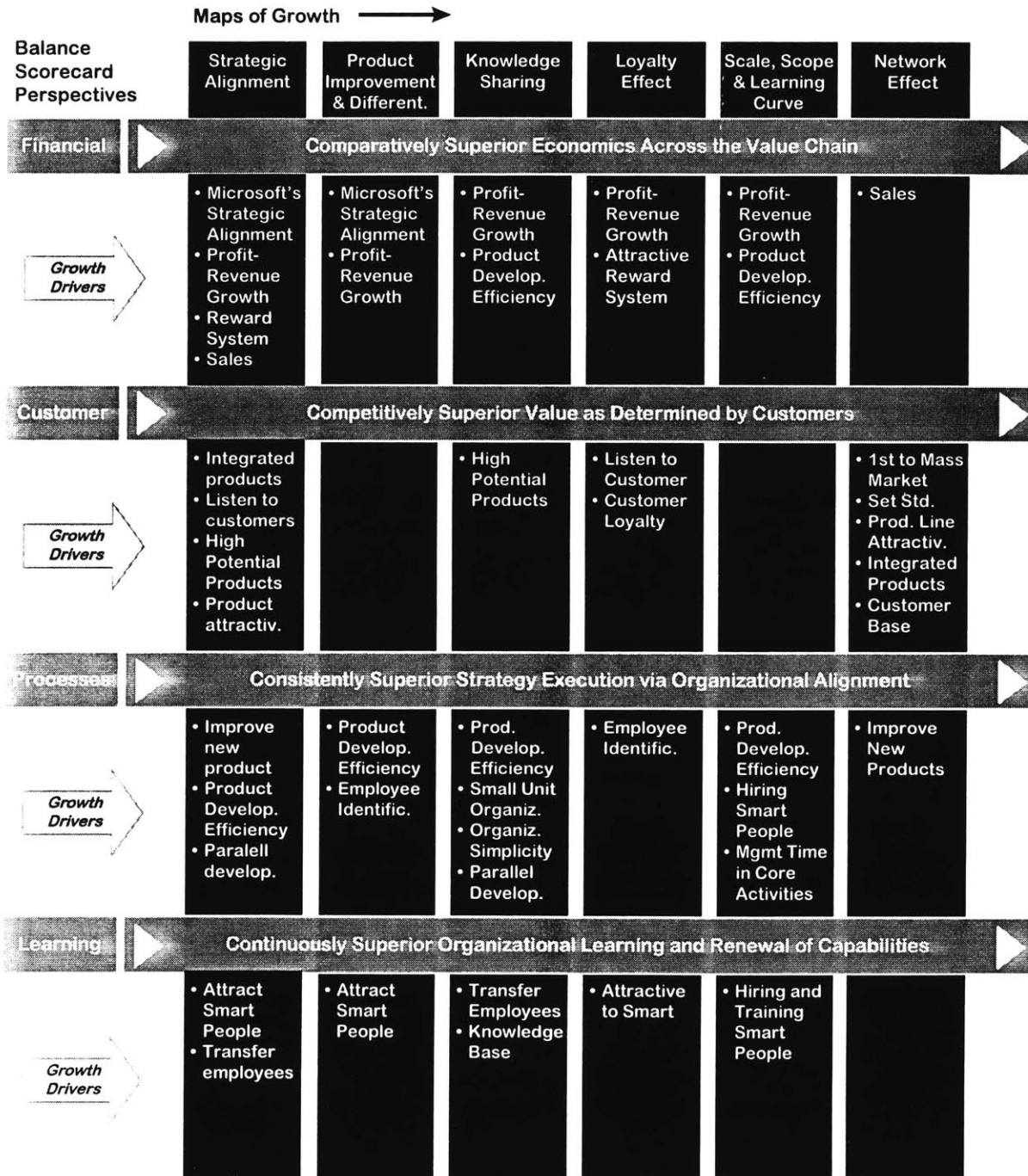


Exhibit 6-37 - Microsoft's dominant maps of growth

## Microsoft Map of Growth



## NOTES

1. Quinn, James B., *Intelligent Enterprise*, The Free Press, New York, 1992, p. 257.
2. *Ibid.*, p. 256.
3. Cusumano, M.A. and Selby, R.W. *Microsoft Secrets*. New York: The Free Press, 1995.
4. Lavery, K., "Strategy and Leadership". In: Cusomano, M. and Selby, R.W. *Microsoft Secrets*. New York: The Free Press, 1995, p. 48.



## CHAPTER 7

### CONCLUSION

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#### *A. Companies Studied*

We found that four maps of growth were common among the companies studied: strategic alignment, product innovation, and loyalty effect. The strategic alignment map of growth describes the continuous renewal and leveraging of core competencies. The product innovation map explains the push toward shorter time to market (even if the product is not perfect), and the reward system associated with innovative employees. The loyalty effect explains the role of employee and customer's loyalty in corporate growth as well as how one's loyalty reinforces the other's.

An interesting result of our study is that HP and 3M show exactly the same dominant maps of growth. Both companies practice incremental product improvement, agile resource allocation, generate employee loyalty, reward product improvement, and above all heavily use their competencies.

Another effect is the attraction that successful companies exert over talented people. Under this effect, the most successful companies have an advantage by selecting talented employees first, thus reducing the pool of talented workforce for other companies. The more talented people a company has, the more successful it will become, therefore creating a reinforcing loop that helps companies maintain their growth. This effect is especially important to Microsoft when it hires the best software programmers in the market for the development of new software.

Of the sixteen maps of growth identified, we found ten to be dominant in the companies studied. The implication of this result is that the maps of growth selected are consistent with the growth drivers of successful companies. More importantly, this result implies that our methodology is useful to understand and manage growth.

One of our initial objectives was to identify common practices among successful companies. We found that there are many company-specific practices at work at the same time. In our opinion, companies that want to grow for the long-run should concentrate in three processes: building unique competencies within the firm, identifying the dynamics of their environment, and maximizing the use of unique competencies.

Nevertheless, we would like to mention some of the practices identified as growth drivers during our interviews with managers:

- Knowledge sharing among employees
- Creation of new markets instead of following existing ones
- Encouragement of entrepreneurial working environment
- Financially conservative
- Reward system for innovativeness
- Management development from within
- High profit goals, desire to be number one
- Continuous improvement approach to quality
- First to market
- Strong culture creates employee loyalty
- Contribution to society

## *B. Frameworks*

Most maps of growth in chapter 5 include reinforcing loops that generate growth. Equally important are balancing loops that limit the influence of growth drivers. The interaction of these two types of loops can generate counter intuitive results. For example, when managers set company objectives, they give higher priority to reinforcing loop variables (like profit and revenue growth) than to balancing loop variables (like plant improvement, R&D, etc.) But it usually works the other way around. First, a company has to invest in plant improvement and R&D, to later realize profit and revenue growth. Therefore, managers sometimes should assign higher priority to variables that limit growth in order to achieve growth goals.

When we used the maps of growth framework in our analysis, we were able to view each company studied in a much more comprehensive way than before. The addition of a dynamic perspective to traditional measurement systems opened more in-depth views of the processes that bring growth to firms. On the other hand, a dynamic dimension brings more complexity to the managers' daily tasks. Overall, the benefits of introducing a dynamic perspective are greater than its costs.

We believe the maps of growth framework can be used to manage companies for long-term growth. Currently, companies engage in a static measurement of growth goals. Top management seldom looks at soft variables and cause and effect relationships of these variables.

### C. Growth Research

The *paths* corporations choose to grow are as diverse as corporations themselves. However, we were able to group some of those paths in sixteen general maps of growth and identified the main drivers for each one of them. Maps of growth represent our view of how growth ought to be managed; using a dynamic measuring system.

Growth is mainly a consequence of the decisions that managers take every day. Therefore, is important to look at the motivation that managers have to set and achieve growth goals. People think that achieving growth is a measure of *success*. For this reason, managers' motivation to growth is associated with the desire to be recognized as a successful manager. Sustained growth, on the other side, requires management's *commitment* to continuous improvement. When a company grows successfully, it attracts other companies wanting to grow at similar rates, thus increasing competition. In order to maintain their growth rates, companies have to improve constantly.

The *strategic alignment* map was critical to explain growth behavior because of two clear and simple growth drivers. The first driver is the alignment of the *reward and measurement system*, which explain growth through the use, renewal, and acquisition of core competencies. The reward and measurement system strongly influence the employees' willingness to adjust their behavior in accordance with the company's growth policies. This alignment is expressed by the degree of employee commitment to follow company policy.

The second driver is the *quantity and quality of top management time*. Top management's direct involvement in setting corporate growth goals and policies, as well as in assessing different alternatives to growth, constitutes the main limit to growth. This rationale leads to decentralization of the decision-making process and empowerment of lower levels to broaden the decision-maker base, thus allowing more physical time available for the process.

Understanding the growth process in corporations can broaden our understanding of the market and industry forces that shape the competitive environment.

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